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AGRICULTURE

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2 February 1985

USSR REPORT AGRICULTURE

CONTENTS

LIVESTOCK FEED PROCUREMENT

Role of Microbiological Industry in Feed Processing Discussed (I. Poteryanko, et. al.; EKONOMICHESKAYA GAZETA, No 40, Oct 84).....	1
Use of Chemical Preservatives in RSFSR Feed Processing (Yu. Chetkov; SEL'SKOYE KHOZYAYSTVO ROSSII, No 10, Oct 84).....	4
Unsatisfactory Alfalfa Cultivation in RSFSR Decried (M. Zaripov, A. Podol'skiy; SOVETSKAYA ROSSIYA, 1 Nov 84).....	7

LIVESTOCK

Efficiency of Livestock Sector Mechanization Examined (N. Morozov; EKONOMIKA SEL'SKOGO KHOZYAYSTVA, No 10, Oct 84).....	11
Meat, Dairy Industry Production Costs, Labor Output Figures (MOLOCHNAYA PROMYSHLENNOST', No 11, Nov 84).....	19
Need To Increase Meat Production Efficiency in Uzbek SSR (Z. Turakulov, et. al.; EKONOMIKA I ZHIZN', No 8, Aug 84).....	22
Low Milk Quality in Estonia Cause for Concern (SOVETSKAYA ESTONIYA, various dates).....	25
Estonian AGROPROM Notes Problems Scientists Seek Solution Quality Upgrading Discussed	

Culling Nonproductive Cows From Herds Recommended (G. Bembinov; SOVETSKAYA ROSSIYA, 14 Nov 84).....	29
Industrialized Hogbreeding Promoted in Siberia, Far East (A.G. Kryuchovskiy; ZEMLYA SIBIRSKAYA, DAL'NEVOSTOCHNAYA, No 9, Sep 84).....	32
Belorussian Livestock Sector Problems Considered (SEL'SKOYE KHOZYAYSTVO BELORUSSII, No 10, Oct 84).....	37
Lagging Productivity of Uzbek Dairy Complexes Examined (V. Shalimov; EKONOMIKA I ZHIZN', No 9, Sep 84).....	42
REGIONAL DEVELOPMENT	
Kazakh Official Reviews Food Program, Indicates Problems (T. Kuppayev; NARODNOYE KHOZYAYSTVO KAZAKHSTANA, No 10, Oct 84).....	47
Estonian Rural Social Development, Food Program Discussed (Ye. Madis; SOVETSKAYA ESTONIYA, 1 Sep 84).....	60
AGRO-ECONOMICS AND ORGANIZATION	
Price Forming, Profit System in Grain Enterprises Analyzed (V. Narkhov; ZAKUPKI SEL'SKOKHOZYAYSTVENNYKH PRODUKTOV, No 10, Oct 84).....	64
Eschew Unproductive Use of Capital in Agriculture (G.A. Palaguta; FINANSY SSSR, No 10, Oct 84).....	72
Effectiveness of Kazakh Inter-Farm Specialized Enterprises (S. Baymukhanova; SEL'SKOYE KHOZYAYSTVO KAZAKHSTANA, No 10, Oct 84).....	77
Reader Commentary on Aspects of 'Unearned Ruble' Discussed (V. Trushkov; SOVETSKAYA ROSSIYA, 3 Oct 84).....	80
FORESTRY AND TIMBER	
Timber Resources Lost in Krasnoyarsk GES Flood Zone (A. Isayev; EKONOMICHESKAYA GAZETA, No 38, Sep 84).....	84
Timber Procurement Contract Violations Deplored (A. Chursin; LESNAYA PROMYSHLENNOST', 13 Dec 84).....	88

LIVESTOCK FEED PROCUREMENT

ROLE OF MICROBIOLOGICAL INDUSTRY IN FEED PROCESSING DISCUSSED

Moscow EKONOMICHESKAYA GAZETA in Russian No 40, Oct 84 p 13

[Article by I. Poteryanko, director of the North Caucasus Branch of the All-Union Scientific Research Institute for Protein Biosynthesis; A. Filatova, head of the laboratory; Yu. Yeremenko, head of the department; B. Glazman, chief engineer; and N. Khomenko, senior scientific associate: "All Agricultural Crop Wastes--Targeted for Livestock Feed"]

[Text] Feed Base Reserves

The potential exists on every farm for adding to feed reserves through the use of various agricultural crop wastes. A major role in increasing fodder reserves for the animal husbandry sector has also been assigned to the reprocessing enterprises, particularly, the microbiological industry.

In the past few years in our country, there has been steady growth in the practice of reprocessing plant wastes for use in the production of feed protein by means of microbiological synthesis. Commonly employed are corn cobs and rice and sunflower seed hulls, as well as other waste products. Among the primary products of the microbiological industry are high-protein, high-vitamin feed yeasts, which are produced through suitable reprocessing of plant raw materials. For example, a ton of corn cobs will yield 225 kilograms of feed yeasts.

The product from a ton of agricultural plant wastes reprocessed in enterprises of the microbiological industry has a value which varies from 150 to 400 rubles, depending upon the particular reprocessing technology employed.

Because of their virtually complete nutritional value, easily assimilated protein, and biologically active components--vitamins, enzymes, hormones and microelements--feed yeasts are used to supplement feeds which are high in carbohydrates. The quality of such feeds is thereby greatly improved. The protein content of 1 kg of yeasts is equivalent to 3 kg of oats. When introduced into feed rations, the yeasts accelerate growth and increase survivability in calves, and also boost weight gains. The use of 1 ton of feed yeasts, for example, in the poultry industry, permits the realization of an additional 1.5-2.5 t of weight gain, or 25-35,000 eggs. Essentially, 1 t of feed yeasts permits a savings of 5-7 t of grain.

At the present time, microbiological industry plants in the Northern Caucasus, Moldavia, the Ukraine and Central Asia make use of plant wastes primarily for the production of feed yeasts, furfural and edible crystalline xylite.

The primary supplier of corn cobs is the USSR Ministry of Procurement, whose enterprises turn out about 570,000 t of them per year. Threshing of the entire corn crop raised for grain in the above-mentioned regions could yield about 2.5 million tons of cobs. At this time, however, plan objectives call for Glavmikrobioprom [Main Administration of the Microbiological Industry] enterprises to supply an average of only 320,000 t of this raw material per year. In short, plants are not receiving an adequate supply of it, which at times leads to production stoppages and to shortages of products which are important to the national economy.

Enterprises of the grain products administration of the USSR Ministry of Procurement are not concerned with the supply of corncobs to the microbiological industry. They even have no firm plans with regard to the supply of cobs, and do not, in fact, bear any particular responsibility for this. During the period of large-scale harvesting of corn for grain, corn-reprocessing plants stockpile vast quantities of cobs. The major part of this stockpile is used for fuel.

The technical specifications currently in force with regard to corncobs are obsolete. The USSR Ministry of Procurement is responsible for eventually developing new ones. The updated specifications should deal with problems related to quality control, storage and transportation of this raw material. The Ministry of Procurement has delegated the authority for developing these specifications to the Kuban branch of the All-Union Scientific Research Institute for Grain, which began to address itself to this task as far back as 1980. To the present time, however, no specifications have been forthcoming.

The potential for developing reserves also exists in the utilization of another important material resource--sunflower-seed hulls. In Krasnodar Kray, for instance, there are eight plants operated by the vegetable oil industry. They reprocess around 570,000 t of sunflower seeds annually, and produce as waste material about 60,000 t of hulls each year. Only two of these plants, however,--the Krasnodar vegetable oil combine and the Kropotkinskiy oil plant--utilize the hulls for microbiological synthesis. Glavmikrobioprom enterprises are furnished no more than 13,000 t of seed hulls annually. All of the remaining material is burned.

The principle explanation for this is that the transportation of seed hulls is considered unprofitable due to their low volume-to-weight load ratio. In the interests of the economy, sunflower seed could be supplied on a priority basis to the Krasnodar vegetable oil combine and to the Kropotkinskiy oil plant, taking into account the factor of year-round operation.

In this case, a supply of raw materials would be provided to the Krasnodar chemical combine and to the Kropotkinskiy chemical plant, which are involved in the production of feed yeasts and furfural.

The North Caucasus Branch of the All-Union Scientific Research Institute for Protein Synthesis, in conjunction with other Glavmikrobioprom institutes, has worked

out a process for producing feed protein and industrial-quality furfural from such plant materials as the straw from grain crops, grapevines, and stalks from sunflower and cotton plants. Unfortunately, however, USSR Ministry of Agriculture experts have still not solved problems concerning the harvesting, processing, storage and shipment to reprocessing plants of these kinds of raw materials. By involving new kinds of raw materials, with proper processing of them, it will be possible to establish reserves of large quantities of feed yeasts. This will in turn promote accelerated growth in the animal husbandry sector.

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USE OF CHEMICAL PRESERVATIVES IN RSFSR FEED PROCESSING

Moscow SEL'SKOYE KHOZYAYSTVO ROSSII in Russian No 10, Oct 84 pp 35-36

Article by Yu. Chetkov, chief zootechnician at the Administration for Use of Chemical Processes in Animal Husbandry of the Rossel'khozkhimiya Association: 'At the Service of Livestock Breeders -- Chemistry'/'

Text Republic seminar-conferences were held recently in the Altay Kray and in Tambov Oblast, during which discussions were held on the use of chemical preservatives in feed and in feed additives. The participants in the seminars displayed special interest in the speeches delivered by farm leaders, in which they shared their experience in the use of various preparations.

The director of the Sannikovskiy Sovkhoz in Pervomayskiy Rayon in the Altay Kray, V. Sokolenko, discussed the use of acetic acid for the preservation of silage and haylage. In 1981, this preparation was used for placing a portion of the farm's silage bulk in storage. Excellent results were obtained and 2 years later the entire amount of 17,000 tons of silage and haylage was placed in storage using this preservative alone. The experiment established the fact that bulk and nutrient losses in silage that has been treated with acetic acid amount to no more than 15 and in the case of haylage -- 10 percent (as a rule, 30-40 percent was lost prior to use of the preparation). At the same time, it was noted that the preserved forage raised the productivity of the cows and the fat content of the milk. In 1983, it reached 3,277 kilograms at the farm and with a fat content of 3.82 percent.

Strict control over the feed procurement technology played a considerable role with regard to raising the productivity of the cattle. A number of measures were necessarily introduced into operations at the sovkhos: certification of the silage and haylage trenches, daily observations of the temperature regime for the stored bulk, maintenance of optimum moisture conditions and measured applications of the preservatives.

The director of the Altay Sovkhoz in Tabunskiy Rayon, V. Levchenko, shared his experience in the use of sodium bisulphate for the ensiling of corn. An application of 3 kilograms of sodium bisulphate and 2 kilograms of diammonium phosphate for every ton of silage bulk made it possible to obtain 625 additional tons of feed from a 2,500 ton capacity trench. This is explained by the fact that the preservative reduces the feed bulk losses sharply. Whereas prior to its use the losses amounted to 30-35 percent, since the preparation

was placed in use these losses have been reduced to 5 percent. At the present time, the production cost for a ton of silage at the sovkhos does not exceed 15 rubles. Moreover, its nutritional value has been raised (from 0.11-0.14 feed units to 0.18-0.24). On the whole, the use of chemical preservatives on the farm made it possible to realize a savings of 100,000 rubles merely by means of a reduction in losses. And still another 100,000 -- as a result of higher quality feed.

The director of the Solonovskiy Sovkhoz in Smolenskiy Rayon in this same kray, A. Strel'nikov, discussed the use for silage preservation purposes of the liquid chemical preservatives KNMK and Vikher, which were applied to a trench by layers using a mobile unit.

All of the silage preserved in this manner met the requirements for 1st class. Its nutritional value in terms of digestible protein was higher than the control figure by 30.8 percent, carotene -- higher by 87.5 percent and sugar -- higher by a factor of 3.3. Butyric acid was not employed. The animals consumed this feed very willingly. During the period in which preserved silage was fed to the cows, the average daily milk yield per cow increased by 1.2 kilograms. A profit of 2.29 rubles was realized for each ruble expended for the preservation of silage bulk.

The director of the Tambov Oblast Planning-Research Station for the Use of Chemical Processes in Animal Husbandry, Yu. Lyubimov, shared his experience in the use of chemical preparations at animal husbandry complexes and farms throughout the oblast. At the Put' Lenina Kolkhoz in Michurinskiy Rayon, a balance in the rations for young cattle stock in terms of protein -- using carbamide, and in terms of phosphorus -- using feed phosphates, raised the average daily weight increases for the cattle by 90 grams. Moreover, the expenditure of feed units for obtaining this weight increase decreased by 18 percent. At the Pravda Kolkhoz in Tambovskiy Rayon, the balancing of the rations in terms of protein and phosphorus, using chemical additives, raised the milk yield (on the average for 2 years) by 2 kilograms daily. Feed consumption decreased by 18.6 percent.

Scientists at the Kuybyshev SKhI [Agricultural Institute], V. Gotlib and V. Iskrin, discussed the split method for treating straw with anhydrous ammonia and they shared their experience in the ammoniation of herbaceous insufficiently dried hay. In 1983, this method was used by the kolkhozes and sovkhoses for procuring more than 40,000 tons of coarse feed, which stored very well during the winter.

An application of liquid ammonia at the rate of 26-28 kilograms per ton of hay with a moisture content of 30-35 percent kills the microflora, hinders the development of rotting processes in the hay and guarantees its extended preservation.

It was by no means an accident that the Altay Kray and Tambov Oblast were chosen as the sites for seminar-conferences, since it is in these regions that the agrochemical service is carrying out purposeful work concerned with the use of chemical preparations in animal husbandry. Thus, departments for the production of complete salt-mineral briquets for cattle and mineral granules for hogs have been in operation over a period of many years in Tambov Oblast.

The participants in the seminars became acquainted with the machines employed for applying measured dosages of the liquid chemical preservatives. In particular, a unit was shown which was designed in the Altay Kray: one variant -- mobile -- based upon use of an OVT /blower-sprayer tractor/, is operated by the tractor's power take-off and the other variant -- a fixed unit -- is operated by an electric motor. Considerable interest was shown in a unit used for applying anhydrous ammonia to straw. It is operated together with a T-150K tractor and towed ammonia containers. Such a machine can treat up to 280 tons of straw per shift. The unit is serviced by one tractor-operator. The annual economic effect realized from its use is 2,108 rubles.

In many oblasts of the Russian Federation, very little use is being made of liquid preservatives owing to the absence of special containers in which to store them. However, aluminum containers are being employed successfully for this purpose in Tambov Oblast. Up to 20 such containers, providing an overall capacity of 1,500 cubic meters, have been installed at bases of the rayon associations of Sel'khozkhimiyz.

The use of chemical preservatives constitutes an important reserve for the further development of feed production. And here a great deal depends upon the organizational work associated with the creation of the logistical base and upon initiative and a creative approach being employed by the specialists in carrying out their work.

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UNSATISFACTORY ALFALFA CULTIVATION IN RSFSR DECRIED

Moscow SOVETSKAYA ROSSIYA in Russian 1 Nov 84 p 2

/Article by M. Zaripov and A. Podol'skiy: "An Alfalfa Field"/

/Text/ In a speech delivered before the October (1984) Plenum of the CPSU Central Committee, the General Secretary of the CPSU Central Committee Comrade K.U. Chernenko included the problem concerned with raising feed production among the key problems of agriculture. In outlining the path to be followed for solving this problem, the Plenum, in particular, assigned the task of achieving a maximum expansion in the sowings of alfalfa and other pulse crops, thus making it possible to obtain a better balance in the animal rations in terms of protein.

In this article the authors discuss the manner in which feed is being enriched by means of alfalfa in the southern and other regions of Russia and they also reveal the reasons why the areas used for this most important crop are not being expanded to the degree required.

The advantages of alfalfa have long been known, since it has been under cultivation for many centuries. In our nonchernozem zone, each hectare of alfalfa is capable of furnishing 50-70 quintals of feed units. In the south, the yields reach 120-150 quintals. Are even the most generous varieties of wheat or corn capable of competing against such productivity? Moreover, additional work must be carried out with grain: it must be enriched with vitamins and mineral additives, whereas an alfalfa field is itself a natural feed preparation shop. It supplies a plant with almost everything that is usually found in concentrated feed. Of equal importance is the fact that alfalfa, similar to clover, enriches the ground with nitrogen, thus adding to its fertility.

These truths require repeating in view of the fact that they are often overlooked.

The director of the All-Union Institute of Feed and Corresponding Member of VASKhNIL /All-Union Academy of Agricultural Sciences imeni V.I. Lenin/, Mitrofan Andreyevich Smurygin, shared some considerations with us.

"Feed production throughout the country has reached an unprecedented scale -- 450 million tons -- and yet the problem is not simply one of quantity. The chief concern is the ability to produce products. Unfortunately, there is a protein deficit in the feed and this results in feed overexpenditures. If all of the excess expenditures were added together, they would total 100 million tons."

At first glance, it would seem that the simple solution would be to compensate for the protein deficit through the use of concentrates. However, there is a limit with regard to increasing the concentrates, since cattle, owing to their physiological peculiarities, cannot exist in the absence of coarse and succulent feed and thus it is important for such feed to contain an adequate amount of protein. This cannot be achieved however if pulse crops are not sown -- under our conditions, this points mainly to alfalfa, clover and sainfoin.

"In the overall structure for feed consumption in our republic" we were informed by the deputy chief of the Main Administration for Feed and the Mixed Feed Industry of the RSFSR Ministry of Agriculture V.A. Yerofayev, "if we are considering livestock and poultry, concentrates constitute 36 percent at the present time and hay only 8 percent. Such a ratio cannot be considered optimum for the dairy herd. Fine hay must necessarily be added."

Practical experience has proven that successful operations ensue when a farm has a good field of perennial grasses and if it does not have such a field -- animal husbandry develops only slowly. In the Kabardino-Balkar and North Osetian ASSR's, the corn yields are the highest in the Russian Federation and still the livestock productivity is low owing to the fact that the production of leguminous grasses is low. This same regularity holds true in almost all areas. We visited two agricultural rayons considered to be typical for central Russia -- Baltasinskiy in the Tatar ASSR and Malmyzhskiy in Kirov Oblast: they are neighboring rayons and thus they operate under roughly the same conditions. The workers in Baltasinskiy Rayon, for the purpose of feeding 8,000 cows, have 6,000 hectares of perennial grass, mainly alfalfa, and each year they obtain 3,500 kilograms of milk per cow. Their neighbors proceed differently. One half of the rayon's kolkhozes and sovkhoses sow no alfalfa whatsoever, preferring instead to rely upon annual grasses. As a result, they obtain exactly 1 ton less milk per cow. During a discussion with us, the 1st secretary of the Malmyzhskiy Rayon Party Committee Viktor Leont'yevich Kolupayev complained: it is said that the opportunities for improving animal husbandry operations are limited, since the feed fields do not meet the requirements of the herd. Nor will they meet these requirements if pulse crops are not sown.

Every specialist is now aware of this fact. The fact that the demand for alfalfa seed is increasing is fully understandable. Unfortunately, from year to year this demand remains unsatisfied.

Owing to this seed deficit, the sown meadows are not being renovated. At the present time, for example, almost one half of all of the areas occupied by alfalfa need to be replowed. At the All-Union Institute of Feed, the scientists estimate that the country is annually losing 10 million tons of feed units -- the

amount which the sunny Kuban region is obtaining from its outstanding fields -- as a result of overmature fields of perennial grasses.

Why is there a shortage of seed for this traditional crop -- alfalfa? For every fortunate farm that has seed at its disposal, there are 10 which, against their will, are forced to rule out the profitable sowing of perennial leguminous grasses.

Alfalfa grows not in the form of a single stalk but rather as a branching bush which offers the possibility of repeated propagation. The biologists have estimated that if each blossom leaves just one grain behind, then an alfalfa sowing is capable of furnishing 20-30 quintals of seed per hectare. True, skilled experts are obtaining 4-5 quintals. This is also good; however, the average yields for the country over a period of many years, even during the best years, have been only slightly more than 1 quintal. In order to supply seed for a large area of 6-7 million hectares, seed plants must be grown on almost 1 million hectares, having refused in advance to obtain feed from this land. Moreover, there is a risk of not obtaining even 1 quintal per hectare. Scientists at the All-Union Scientific Research Institute of Feed believe that the odds for such a risk are 1 to 10. This means that a fine yield of seed can be expected only once every 10 years.

These are not random failures. In particular, the scientists must be held accountable. Over the past 10 years, for example, only nine varieties of alfalfa have been regionalized on fields in the Russian Federation. This is a very low figure for such a vast territory stretching from the Baltic Sea to the Pacific Ocean.

Our domestic wheats, which have marched triumphantly across the fields of many countries and continents, are the result of the talents of such gifted plant breeders as Luk'yanenko and Remeslo, a high level of organization, high class administration and another important factor -- skilled and rather numerous collectives worked with the above plant breeders in the Kuban region and the Ukraine and studied all of the special problems. The breeding of forage crops was organized differently and in the plant breeding centers the alfalfa was handled by individual enthusiasts. We visited the All-Union Institute of Feed imeni V.R. Vil'yams in a suburb of Moscow, at Lugovaya Station. The leader of the institute's plant breeding center, Doctor of Agricultural Sciences Anna Sergeyevna Novoselova, one of the oldest workers at the institute, discussed the operational results of the scientists, today's concerns and tomorrow's problems and she also spoke out on the theme: "Tempo of studies, schedules for breeding of new varieties and their dissemination are dependent not upon individual workers, but rather upon strong and all-purpose laboratories capable of studying a problem as a whole, commencing with the breeding of a new variety and ending with the means required for protecting it against diseases and pests. Such are the methods employed in the grain institutes. And we have one and a half workers concerning themselves with clover and two specializing in alfalfa."

Nor is this the entire problem. In addition to there being only a few new varieties, those which are available are not being moved out onto the fields but rather they are growing old on experimental plots. The young varieties developed by the plant breeders during the years of the 10th and 11th five-year

plans were grown on only 30,000 hectares, while the older varieties of Manychskaya, Semirechenskaya and Slavyanskaya were sown on an area of almost 1 million hectares. Meanwhile, a handful of seed for the new varieties -- by no means is this a case of a bird in the hand being worth two in the bush. If a variety is to please the peasants, there must be enough of it for 1 million hectares rather than just for a small plot. Thus the scientific subunits are obligated to multiply this handful to tons and quintals and to ensure that they are made available to the special seed production farms which have been organized in all of the oblasts, krais and republics.

In this sense, the partners or scientific subunits of VASKhNIL are still weak, unreliable and careless. The country's requirement for alfalfa seed of high reproductions -- approximately 5,000 tons -- has still only been satisfied by one fourth. Last year the farms in the Russian Federation should have been supplied with 627 tons and yet they received only one half this amount -- 382 tons. Each year there is a shortfall in this seed. The scientific subunits are not carrying through in their obligations to their partner-seed growers and the latter in turn are issuing only meagre rations to the kolkhozes and sovkhozes.

In solving this problem, a great deal will depend upon the farms and particularly upon the kolkhoz and sovkhoz seed growers. The next report will deal with the manner in which they are solving the tasks assigned to them.

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LIVESTOCK

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EFFICIENCY OF LIVESTOCK SECTOR MECHANIZATION EXAMINED

Moscow EKONOMIKA SEL'SKOGO KHOZYAYSTVA in Russian No 10, Oct 84 pp 8-12

[Article by N. Morozov, doctor of economic sciences, professor and director of VNIIMZh [All-Union Scientific Research Institute of Livestock Raising]: "Basic Problems in Increasing the Economic Effectiveness of Mechanization in Livestock Raising"]

[Text] The USSR Food Program foresees the completion of complex mechanization of farming and livestock raising by 1990.

The availability of machines and equipment facilitates a considerable curtailment in expenditure of work time. By increasing the level of mechanization in livestock raising in 1982 (while maintaining labor expenditures at 1971 levels) it is assumed that about 1.6 million persons were freed.

At the same time, an increase in supplies of technology to livestock raising still has not resulted in a noticeable increase in norms for assigning livestock to workers and for curtailing expenditures for its upkeep, with the exception of poultry raising. Moreover, despite the technical provision of the branch, the cost of production is not decreasing and the effect of technology on improving the use of feeds and on raising the productivity of animals is not sufficiently effective. Frequently in enterprises the growth of capital investments for acquiring and installing machines is not covered by a savings in expenditures once these machines are put into operation.

Among the factors hindering increased branch effectiveness are: a low degree of intensiveness in using machines and equipment with a considerable proportion of manual labor; in organizing the production of technology the characteristics of existing farms are not taken into account--their sizes, the capacity of facilities and the technology utilized to maintain animals; the quality and dependability of machines do not correspond to the norm; and the organization of labor and servicing of technology do not meet increased requirements and do not secure its use as necessary.

Until recently most attention was focused on the elaboration of machines and equipment to carry out heavy manual labor. At the present time expenditures of work time for production output and servicing animals are determined primarily by the number of manual, non-mechanized operations. Even on farms with complex mechanization of cattle, manual labor to service animals comprises

45-50 percent of operations; in hogbreeding--34-40 percent; in reproduction shops of hogbreeding farms, birthing departments and calf pens--80 percent. In poultry raising with the complex mechanization of raising broiler chickens over 80 percent of total labor-intensiveness involves unloading poultry from cages and loading chicks into heated cages. Over 40 percent of work time in commercial poultry raising is spent on the sorting and packing of eggs.

Without the production of machines and equipment for mechanizing manual operations it is not possible to cardinaly solve the problem of increasing labor productivity. The time has also come to develop robotics and a system of automatic mechanisms and microprocesses which will enable us to implement the transition to automation of labor in livestock raising. The level of non-mechanized labor is particularly high on small farms where the simplest equipment is basically utilized for distributing feed, servicing young and storing milk. A large number of manual operations do not allow enterprises to increase norms for securing animals for farm workers, for decreasing the numbers of workers and for introducing progressive forms of labor organization. At the same time, with the growth of technical reequipping of farms a significant portion of work time (10-15 percent) is spent servicing machines and equipment. Here practically all operations to service machines are manual.

With the goal of accelerating the schedule for developing and assimilating technology for the mechanization of manual labor in livestock raising it is essential to develop a special program with well-founded parameters for machines and equipment and for their required production volumes. Moreover, it is essential to develop and assimilate the production of the simplest equipment--lighter wagons, hoists, measuring equipment and comfortable manual equipment.

The possibilities of the new technology are not always fully realized, which has an effect on increasing the productivity of animals only with the development of optimal conditions, as relates for example to the microclimate in facilities and improvements in the use of feed, and so forth.

The effectiveness of using machines and equipment depends to a considerable degree on their work intensity in the course of a shift, season or year. Its growth enables us to increase the volume of completed work without additional production means and capital investments for the acquisition and installation of new technology; to decrease labor expenditures for the carrying out of preparatory and concluding operations and to decrease the expenditure of means for the amortization and servicing of machines, buildings and structures calculated on the basis of a unit of achieved production. This is why the search for ways to more fully utilize machines and equipment is of great significance for raising the effectiveness of production output not only in livestock raising but in other branches of the national economy as well.

Among the factors hindering a high degree of intensiveness in utilizing technology let us note the striving of directors of enterprises to acquire highly productive machines and systems with high initial investments, which results in an increase in specific expenses for fulfilling operations or obtaining products.

The experience of utilizing highly productive machines and equipment showed that the duration of their work does not exceed 5-6, or even 3-4 hours per day, which significantly decreases their utilization effectiveness. Consequently, in planning optimal machine units and bases for intensity of machine use it is essential to proceed from real operating conditions, methods of animal maintenance, labor organization and other peculiarities of production.

Of special urgency is increasing the intensiveness of utilizing the equipment of feed shops for preparing feeds. Capital investments into equipment and the building of feed shops for cattle farms comprise from 54,000 to 98,000 rubles (47-135 rubles per head), or 4-7 percent of the cost of the farm. Feed shops are an important link in livestock raising enterprises in that they play a role in determining the success of operations in these enterprises. The quality of feed preparation affects the nutritional value and edibility of feed, the effectiveness of operations of mechanization systems for feed distribution and in the final analysis--the productivity of animals.

The preparation of feed in feed shops is an energy and labor intensive process. From 0.7 to 1.1 man-hours of work time, 1.9-17 rubles of expenditures, 3-6 kilowatt hours of electrical energy without thermochemical processing and 4-8 kilowatt hours with thermochemical processing are expended for the preparation of 1 ton of feed. For every 1,000 kilograms of initial straw mass 33-50 kilograms of liquid fuel is required for thermal processing or steaming.

At the same time, equipment units for preparing loose feed mixtures are utilized no more than 2.5-3 hours per day in feed shops. Even with one-shift work, equipment in feed shops can prepare 2-2.5 times more feed. In this case, capital investments as well as the need for machines and equipment decrease substantially. Increasing the volume of feed prepared in feed shops from 6,000 to 18,000-24,000 tons annually (hours worked increase from 400-450 to 1,200-1,600 hours annually) would allow us to decrease expenditures from 5.7-5.9 to 2.1-2.2 rubles per ton of feed.

The generalization of the experience of utilizing feed shops in hogbreeding has shown that the duration of their work fluctuates from 1.5 to 3.2 hours per day. In this case expenditures equal 2.9-3.4 rubles per ton of feed. There is an especially sharp drop in the effectiveness of preparing feed in feed shops with high initial investments (total capital investments--154,400 rubles, including machines--75,400 rubles) for processing feed wastes and a low utilization intensity of these shops.

On farms that fatten 6,000 hogs annually equipment in a feed shop of the KPO [Cooperative producers' society] type is used no more than 2 hours daily. Increasing utilization intensity of equipment units in feed shops for the preparation of moist mixtures with the addition of food wastes in hogbreeding from 2 to 7 hours daily allows us to decrease expenditures from 10.7 to 2.7 rubles per ton of ready feed.

In dairy farming with the transition to milking in halls real prerequisites are created for increasing the utilization intensity of systems as well as equipment for the collection, storage and primary processing of milk.

Calculations show that with an increase in the number of cows from 200 to 300 serviced by one unit with Tandem UDT-8 machines on farms with tethered upkeep and automatic OSP-25-F bindings, operational expenses per cow decrease from 55.2 to 52 rubles and total expenditures decrease from 65.2 to 58.6 rubles.

One of the factors related to increasing the utilization intensity of narrowly-specialized machines is the development and production of the necessary attachments to them. Thus, as the results of studies show, equipment for producing dehydrated feeds is used no more than 500-600 hours annually. The development of standard equipment adapted for preparing dehydrated feed and granular feed mixtures from various raw materials, including straw, enables us to increase the annual total of hours of this machine's operation to 2,000.

In developing and mass producing primarily highly-productive machinery, it is essential to consider that at the present time there is a large number of dairy farms for 100-200 livestock places with capital facilities in which it is economically inexpedient to utilize highly productive feed loaders, mobile distributors or milking equipment. At the same time, for these farms there has been no assimilation of the production of standard attachments for self-propelled undercarriages, which could be used to load feed, bedding and carting of feeds to facilities, mowing of green mass, cleaning facilities of manure and other words. To mechanize operations on small farms there should be an assimilation of production of electrified wagons, light and comfortable manual carts and equipment for raising flasks and for moving calves and other loads, the use of which will enable us not only to decrease expenditures of work time for completing processes but also to sharply decrease the physical stress on service personnel.

The experience of long-term use of self-propelled RS-0.9 undercarriages with an attachment unit (product of the GDR [German Democratic Republic]) in the enterprises of the Estonian SSR showed their high level of economic effectiveness--labor expenditures for the fulfillment of all operations per cow, with milking two times, comprise no more than 140 man-hours annually; capital investments per cow--from 80 to 110 rubles. During the Ninth and 10th five-year plans the development and assimilation of production of standard technical means for self-propelled undercarriages were foreseen for loading operations on small cattle and sheep-raising farms. However, their elaboration and mass production were not organized and self-propelled undercarriages meeting farm needs were not produced. As a result, agriculture does not have simple and dependable means of mechanizing physically stressful and labor-intensive operations in livestock raising.

Small farms (up to 100 cows) should also be supplied with capacities for cooling and storing milk with a volume of 0.7-1 cubic meters and cages for the upkeep of calves. In order to increase the labor productivity of milkmaids it is essential to expand the use of Tandem and Yelochka machine units on farms (up to 200 cows). In conjunction with automatic tethering this will enable us to increase the norm for the number of cows serviced per milkmaid to 80-100 head. On such farms it is desirable to utilize Tandem units in 4-6 stalls, and Yelochka units in 8-10 stalls.

For hogbreeding farms that fatten 1,000-3,000 head annually there should be an assimilation of production of equipment units for feed shops. The significance of the development of machines and equipment for mechanizing manual operations has grown especially in connection with the development of subsidiary shops and farms in industrial enterprises.

The necessity of considering existing typical farm sizes according to their capacities and upkeep technologies when elaborating plans on technological development is confirmed by the analysis of their certification. In kolkhozes, sovkhozes and inter-farm agricultural enterprises in early 1983 there were over 104,000 farms for the tethered upkeep of 32 million cows and over 2,600 farms for untethered upkeep of 1.3 million cows. Of this quantity almost 54 percent of farms with a capacity of up to 200 head have 8.92 million slots for livestock, or 26.8 percent of the total number.

On such farms over 3.5 million livestock slots in buildings are mechanized, and it is possible to additionally mechanize over 11,000 facilities with 1.4 million slots for livestock.

Machine production plans for the coming decade must foresee a technological production volume for 25,000 farms with a capacity of 83 to 200 head having 4.93 livestock slots, or 14.8 percent of existing capacities of all cowsheds. Without considering the operations of these farms, which presently are characterized by the lowest levels of complex mechanization and high labor expenditures for achieved production it is impossible to solve the problem of decreasing labor expenditures for production output in dairy farming. On farms with up to 200 head, only 10.7 percent of the herd is maintained in facilities with complex mechanization.

As of the beginning of 1983, kolkhozes, sovkhozes and inter-farm enterprises had over 2,470 farms with up to 1,000 slots for hogs each, including 4,400 facilities for 1.83 million head and 1,400 farms for from 1,000 to 3,000 slots for hogs.

Calculations made on the basis of an elaboration of technological schedules, as well as the experience of many farms and enterprises in various zones of the country confirm the high level of effectiveness of measures to mechanize farms, which will be a necessary base for improving the working conditions of workers.

Average annual labor expenditures for servicing one cow on farms with up to 200 head decrease to 140-160 man-hours, or by 25 percent with complex mechanization as compared to partial mechanization. On farms that maintain 400-800 cows there is a decrease to 80-100 man-hours, or by 55 percent. On hog-fattening farms labor expenditures decrease by 80 percent.

Capital investments needed for implementing the mechanization of dairy farms and totalling 130-200 rubles per cow are repaid by means of the savings in operational expenses in 3-5 years; in hogbreeding--in 1-1.5 years.

Research conducted by VIESKh [All-Union Institute of Agricultural Economics] economist V. P. Sergeyev showed that there is a correlation between the level

of labor expenditures to care for animals and capital investments into means of mechanization for the purpose of achieving the planned level of labor-intensity, expressed in an equation of a hyperbola of the type:

$$y=A+\frac{B}{x},$$

where y --labor expenditures per head (1 quintal) of product;
 x --capital investments, rubles;
 A and B --accounting coefficients.

The relationship between labor expenditures and the size of investments into technology varies according to upkeep technology, farm size and method of mechanization.

The calculations that were made showed that to decrease the labor-intensive-ness of caring for cows by 30-35 percent while using technical means foreseen by a machine system it will be necessary to expend no fewer than 220 rubles on farms with 100 head and 102-106 rubles on farms of other sizes for the acquisition and installation of machines and equipment; to decrease labor intensity by 50 percent investments must be increased to 300 rubles on small farms and to 173-200 rubles on farms for 400-800 cows.

The noted indicators of effectiveness depend to a considerable degree in the dependability of the manufactured technology, labor organization, technical servicing of machines and equipment, on the special characteristics of the technology of maintaining and feeding the animals and on a more efficient selection of equipment. Already today it is essential to more extensively introduce milking units with stalls, especially on farms equipped with automatic bindings. Experience using them as well as calculations that have been made show that on farms for 300-400 head when milking in Tandem units equipped with automatic manipulators and when using automatic OSP-25F chain bindings, labor expenditures per cow comprise 23-24 man-hours per year for carrying out this most important process; operational expenses comprise 35-37 rubles and total expenditures--41-44 rubles. With milking in stalls into buckets and into a stationary milk conduit labor expenditures per cow comprise 49-50 and 43-44 man-hours annually, or 52 and 46 percent more than with milking using Tadem units; operational expenses comprise 65-66 and 64-65 rubles and total expenditures--67-68 and 69-70 rubles, which is 36-38 percent higher.

One of the factors affecting the mechanization of livestock raising is the quality of the machines and equipment that are manufactured and delivered to agriculture. Quality is reflected in indicators such as the length of service of machines and equipment, expenditures of labor and means for technically servicing them, norms for expenditure of spare parts and operating materials and deductions for amortization and ongoing repairs.

At the present time in accordance with existing norms for amortization deductions the length of service of machines and equipment has been determined to be 4-7 years, depending on operating conditions. An analysis showed that due to the unsatisfactory quality of delivered machines and equipment, to a lack of adherence to operating conditions and to inadequate training of

personnel, actual length of service of equipment is 1.5-2 times lower than the norm. One of the basic shortcomings of machines and equipment provided for the purpose of mechanizing farm is the significant fluctuation in the length of service of individual networks and units, which results in a premature junking of machines that are still suitable for operating.

Farm workers have special complaints about the low quality of milking equipment, equipment for cooling and storing milk, and lighting. The low quality of the nipple rubber, milk and air hoses, membranes, collectors and pulsators results in a deterioration in their work, in a decrease in continuous cross-sections and finally, in poor milking, trauma to the milk glands and in mastitis in cows.

The use of milk storage capacities made of food aluminum and plastic materials have a short length of service, and the appearance in them of irregularities and internal cavities decreases the quality of the product. Two to two and a half times more work time and cleaning solutions are needed to wash them than to wash capacities made from non-rusting steel. The absence of equipment for the circulating washing out of milk in storage coolers also results in an increase in expenditures of work time for washing them. The incomplete delivery of refrigerated coolers and refrigeration machines makes their efficient operation more difficult.

The use of any available refrigeration machine in the enterprise will not provide the opportunity to efficiently utilize expensive means that are in short supply if the machine does not correspond to the capacity of the storage tank as well as its technical parameters. New water-cooling machines that have been mass produced in recent years are equipped with compressors of the oil-seal type instead of with progressive hermetically-sealed compressors called for according to zootechnical requirements. As a result, due to the leakage of freon the equipment often remains idle.

Because of the low quality of machines they are taken out of operation prematurely, thus holding back the pace of increasing the level of mechanization; the expenditure of labor and means to service them increase. Even with the annual delivery to agriculture of 35,000-39,000 mobile feed distributors during the last 4 years, their fleet has grown in size at an insignificant pace. In 1979-1982 over 147,000 mobile distributors were delivered, of which only 23.8 percent went towards an increase in the size of the fleet, and 76.2 percent--towards replacing equipment that was prematurely removed from operation.

At the present time, according to data from the USSR MSKh [Ministry of Agriculture], kolkhozes and sovkhoses have a large number of machines in a state of disrepair or unsuitable for operation (in some groups reaching 9-10 percent of the total number); they are evaluated at about 240 million rubles. However, orders made by agriculture for equipment to meet its repair-operations needs exceed the need for such equipment with complex mechanization.

Existing norms for expenditures for ongoing repairs of machines and equipment in livestock raising comprise 16-18 percent of the balance evaluation, but actual expenditures in enterprises are often higher than the norm and they

are one of the significant factors in the growth of operational expenses for caring for animals.

Increasing the quality of manufactured technology will enable us to decrease expenditures for ongoing repairs to 7-8 percent of its balance cost. Even with an increase in the wholesale price of machines of 50 percent this will facilitate a decrease in operational expenses. A significant improvement in the quality of manufactured machinery will raise the normative length of service to 9-11 years and will correspondingly decrease amortization deductions from 14.2-25 to 8-10 percent.

An improvement in labor organization on farms and a strengthening of the material interest of engineering-technical workers in maintaining equipment on the necessary level of readiness with minimal expenditures of labor and means not only for the operation of the equipment but for production output as well will have a great effect on decreasing expenditures for servicing technology. The most progressive form of labor organization and production administration on farms that allows for the effective use of equipment is the development of complex brigades (links) which include engineering-technical workers, with payments according to the end product and with a consideration of their training and labor participation in production. In this case, engineering-technical workers will be materially interested not only in carrying out work to care for and service equipment but also in implementing technological processes, which will also enable all categories of workers on farms and in complexes to improve their utilization of work time.

Not only the intensity of machine utilization, but the balance cost of machines have an effect on the size of operational expenses for carrying out individual production processes as well as a complex of operations to care for animals and poultry (with established norms for expenditures for amortization, repair and servicing of equipment, wage payments and fuel and electrical energy). In most groups of technical means 75-80 percent of the balance cost consists of the wholesale price. Increasing wholesale prices for new machinery and equipment results in a growth in expenses and in the cost of production when this technology is in operation.

The implementation of the presented directions for developing and producing technology, as well as an improvement in the organization of utilizing manufactured machines and equipment to mechanize production processes will allow us to significantly raise the effectiveness of livestock raising.

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8228

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MEAT, DAIRY INDUSTRY PRODUCTION COSTS, LABOR OUTPUT FIGURES

Moscow MOLOCHNAYA PROMYSHLENNOST' in Russian No 11, Nov 84 pp 6-7

Article: "Fulfillment of Socialist Obligations"

Text: The results of the socialist competition in the meat and dairy industry for achieving an above-plan increase of 1 percent in labor productivity and an additional reduction of roughly 0.5 percent in the production costs for marketable products, during 8 and 7 months respectively in 1984, are furnished in the Table.

Labor productivity. During the January to August period of 1984, the output per work of the industrial-production personnel, compared to the same period for last year and for the meat and dairy industry as a whole, increased by 4.8 percent, against a plan for 1.5 percent and an obligation of 1 percent (in all 2.5 percent). Moreover, 86 percent (1,233,000,000 rubles) of the increase in the overall volume of output production was obtained as a result of raised labor productivity.

All of the union republic ministries of the meat and dairy industry and the VPO Military Consumers' Society, with the exception of the Kazakh SSR and Turkmen SSR ministries of the meat and dairy industry, fulfilled their tasks and socialist obligations in terms of this indicator.

The enterprises and associations of the Azerbaijan SSR Minmyasomolprom Ministry of the Meat and Dairy Industry, Soyuzkonservmoloko VPO, Soyuzkleyzhelatinprom VPO and Soyuzmyasomoltara VPO obtained all of their increases in production output volume as a result of improved labor productivity and some of them -- even with a reduction in the number of workers.

At the same time, during 6 months of this current year, 80 enterprises and organizations, or 12.6 percent of their overall number were unable to cope with the plan for raising labor productivity. The proportion of such enterprises and associations was especially high in the ministries of the meat and dairy industry for the RSFSR (14.4 percent), Uabek SSR (27.6 percent, Kazakh SSR (40.3 percent), Turkmen SSR (30.4 percent), VPO Soyuzkonservmoloko (19.2 percent), VPO Soyuzkleyzhelatinprom (15.8 percent) and VPO Soyuzmyasomoltara (23.1 percent).

During the January to July period, the average wage of the industrial-production personnel increased by 2.4 percent and the increase in it per 1 percent of the

increase in labor productivity amounted to 0.49 percent, compared to an annual norm of 0.8 percent. The union republic ministries of the meat and dairy industry and the VPO's, with the exception of the Uzbek SSR Ministry of the Meat and Dairy Industry, the VPO Soyuzkonservmoloko and VPO Soyuzmyasomoltara, ensured an economically correct ratio between the rates of growth in average wages and labor productivity.

Ministries and VPO's	Labor Productivity, in % of Corresponding Period for 1983		Above-Plan Reduction in Production costs for Marketable Products During January to July Period, %	
	Plan, Taking Into Account Obligation for 8 Months	Report for 8 Months	Obligation for January - July	Report for January - July
USSR Minmyasomolprom Including minmyaso- molprom's for the:	102.5	104.8	0.5	0.48
RSFSR	102.3	103.7	0.5	0.15
Ukrainian SSR	101.0	104.8	0.5	1.05
Belorussian SSR	102.9	106.6	0.5	0.89
Uzbek SSR	100.8	102.3	0.5	0.64
Kazakh SSR	105.9	104.9	0.5	0.37
Georgian SSR	105.4	108.6	0.5	0.60
Azerbaijan SSR	104.1	107.0	0.5	1.21
Lithuanian SSR	104.5	105.8	0.5	0.56
Moldavian SSR	98.7	106.5	0.5	0.30
Latvian SSR	104.7	108.0	0.5	0.40
Kirghiz SSR	106.4	112.9	0.5	0.71
Tajik SSR	102.9	103.7	0.5	0.86
Armenian SSR	101.2	105.1	0.5	1.31
Turkmen SSR	102.4	101.6	0.5	1.8
Estonian SSR	104.0	105.6	0.5	0.71
VPO's				
Soyuzkonservmoloko	100.6	102.4	0.5	0.31
Soyuzkleyzhelatinprom	99.8	101.4	0.5	1.56
Soyuzmyasomoltara	99.6	100.3	0.5	0.13

Production costs for marketable products. During the January to July period of 1984, the plan for lowering the production costs for marketable products was fulfilled for the meat and dairy industry as a whole. The actual expenditures per ruble of output amounted to 87.75 kopecks, against a plan calling for 88.18 kopecks. The above-plan savings realized from the reduction in production costs reached 94.9 million rubles or 0.48 percent.

The obligations undertaken in connection with an above-plan reduction of 0.5 percent for the ministry as a whole were under-fulfilled by 3.6 million rubles or by 0.02 percent.

The union republic minmyasomolprom's and the VPO's, with the exception of the minyasomolprom's for the RSFSR, Kazakh SSR, Moldavian SSR and Latvian SSR and the VPO's Soyuzkonservmoloko and Soyuzmyasomoltara, fulfilled their obligations and lowered the production costs for marketable products by 72.4 million rubles

in excess of the plan. The mentioned ministries and VPO's, despite the fact that they carried out the planned task for lowering production costs, nevertheless failed to ensure fulfillment by the collectives of the production associations and enterprises of the obligations they undertook in connection with achieving additional reductions in the output production costs.

From January to July, 114 enterprises and associations, or 17.8 percent of their overall number, failed to fulfill their plans for lowering the production costs for marketable products, with the costs rising by 26.5 million rubles. The proportion of such enterprises and associations was especially high in the Minmyasomolprom's for the RSFSR (39 percent), Kazakh SSR (25 percent), Kirghiz SSR (28.5 percent) and Turkmen SSR (21.7 percent) and for the VPO's Soyuzkonservmoloko (26.9 percent) and Soyuzmyasomoltara (38.5 percent).

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7026

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NEED TO INCREASE MEAT PRODUCTION EFFICIENCY IN UZBEK SSR

Tashkent EKONOMIKA I ZHIZN' in Russian No 8, Aug 84 pp 63-64

[Article by Z. Turakulov, N. Narzullayev and A. Abdurasudov, Samarkand Agricultural Institute: "How to Raise the Productivity of the Herd of Beef Cattle"]

[Text] During the last 15-20 years the level of management of cattle farming has noticeably improved in the republic. Thanks to this, the average delivery weight of cattle in the public sector increased from 219 to 370 kilograms. In comparison to 1965 meat production more than doubled. At the same time, the level of meat production in the republic, including that of beef production, lags significantly behind the growing needs of the population. In most kolkhozes and sovkhozes in the republic production-economic indicators in cattle farming for meat purposes remain fairly low. To illustrate this statement Table 1 is presented.

Average daily weight gain, as the most important indicator of the productivity of beef cattle, equalled an average of 262-297 grams in kolkhozes and 320-343 grams in sovkhozes in 1980-1982. The average live weight of cattle sold during these years fluctuated between 344.4 and 349.6 kilograms in sovkhozes and 405.4 and 424.0 kilograms in kolkhozes. The relatively greater live weight of cattle in kolkhozes as compared to sovkhozes was achieved by lengthening the raising and fattening time.

As previously, feed expenditures per unit of production are high. They are more than double scientifically-based norms. Moreover, beef production in kolkhozes and sovkhozes remains an extremely labor-intensive branch--sovkhozes expended an average of 66.3-72.3 man-hours per quintal of increase in meat production during these years; in kolkhozes the expenditure was even greater--73.6-76.3 man-hours.

Low average daily weight gains, low labor productivity and an enormous overconsumption of feed--all of this results in an increase in the cost of beef and consequently--in production losses.

The Ninth Plenum of the Uzbek CP Central Committee made a special point of examining questions related to the accelerated development of livestock raising in the republic and recommended that beef production be increased to

Table 1
Basic Indicators for Beef Cattle in Kolkhozes and Sovkhozes of the Uzbek SSR
for 1980-1982

Indicators	Kolkhozes			Sovkhozes		
	1980	1981	1983	1980	1981	1982
Average daily weight gain, grams	262	287	273	331	320	343
Average live weight sold, kilograms	407.5	405.4	424.0	344.4	346.7	349.6
Feed expenditures per quintal live weight gain, feed units	21.55	21.93	22.51	19.11	20.62	20.59
Labor expenditures per quintal weight gain, man-hours	74.0	73.6	76.3	66.3	68.8	72.3
Load per cattleman, head	32.0	35.1	32.0	26.4	26.2	24.9
Cost of 1 quintal weight gain, rubles	250.4	260.2	258.0	206.6	232.0	228.3
Average sales price of 1 quintal live weight, rubles	224.2	232.5	249.8	192.7	208.9	210.8
Profitability (+)	—	—	—	—	—	—
Loss (-) in percent	10.48	10.64	3.19	6.61	9.96	7.65

Table 2
Basic Indicators for Beef Cattle in Inter-Farm Enterprises and Complexes of Uzzhivprom (1980-1982)

Indicators	Inter-Farm Enterprises			Industrial Complexes		
	1980	1981	1982	1980	1981	1982
Average daily weight gain, grams	381	414	413	509	459	503
Average weight sold, kg	350	372	392.9	371	364.3	365
Feed expenditures per quintal weight gain, feed units	12.6	13.6	14.8	9.57	11.55	11.04
Labor expenditures per quintal weight gain, man-hours	—	—	—	14.5	18.7	20.4
Load per cattleman, head	66.2	67	72	62.6	81.3	62.4
Cost of 1 quintal weight gain, rubles	175.7	185.4	209.0	180.4	215.7	196.4
Average sales price of 1 quintal live weight, rubles	232.1	198.0	209.8	224.0	223.0	224.2
Profitability, percent	32.2	28.1	26.2	10.2	15.9	6.9

240,000-250,000 tons (slaughter weight) and that real reserves be utilized for raising the profitability of beef production.

Experience amassed in the republic shows that one of the decisive conditions for increasing beef production with the smallest expenditures of labor, feed and other resources per unit of production is the concentration of beef cattle in inter-farm enterprises and state livestock-raising complexes. Thanks to this the productivity of cattle and the productivity of labor increase and the expenditure of feed per unit of weight gain decreases--production becomes a profitable branch.

As we can see from the table, most indicators for inter-farm enterprises and complexes of Uzzhivprom [Uzbek Livestock Raising Association] are higher than those for kolkhozes and sovkhoses. The expenditure of labor and feed per quintal of increase in the product are less by a factor of 1.5-2 than for kolkhozes and sovkhoses. The profitability of beef production in inter-farm enterprises and complexes in 1982 was 26.2 and 6.9 respectively instead of losses of 3.19 and 7.65 percent in the kolkhozes and sovkhoses of the republic's ministry of agriculture.

Nevertheless, even in specialized enterprises possibilities and reserves are not utilized efficiently, feed is overconsumed, the pace of average daily weight gains is relatively low and the live weight of cattle sold is lower than in the republic's leading enterprises. Thus, in Industrial Complex imeni Ulugbek of Samarkandskiy Rayon in 1982 average daily weight gain equalled 525 grams, feed expenditures per quintal of product--8.4 quintals of feed units, labor expenditures--12.3 man-hours, cost--172 rubles and profitability--18.9 percent. The indicators in Kattakurganskiy Livestock-Raising Complex are even higher--per quintal of production 7.4 quintals of feed units and 6 man-hours of labor are expended, the cost of meat was 99 rubles and profitability--60 percent!

This comparative analysis once again persuades us as to the advantages of utilizing industrial technology in beef production in inter-farm enterprises and complexes. However, even here not all reserves are utilized. For example, specialized enterprises widely utilize purchased feed which usually costs 2-3 times more than if it were produced by the enterprise itself, which naturally leads to the increased cost of weight gain. One's own inexpensive feed base, balanced in accordance with biological norms for feeding animals, is one of the most important conditions for increasing the profitability of beef production.

Under the hot-climate conditions of Uzbekistan it is expedient to organize raising and fattening of cattle on open platforms, with the final stage of fattening carried out under tethered conditions.

The intensification of livestock raising is an urgent problem. The branch's productivity is still not high. At the same time, experience shows that simply by increasing productivity it is possible to rapidly improve meat production and the effectiveness of livestock raising.

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8228

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LIVESTOCK

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LOW MILK QUALITY IN ESTONIA CAUSE FOR CONCERN

Estonian AGROPROM Notes Problems

Tallinn SOVETSKAYA ESTONIYA in Russian 2 Sep 84 p 3

[Article: "In the Republic's Committee/ Special Attention to Milk Quality"]

[Text] ESSR Agroprom [Agricultural Industry Association], rayon agro-industrial associations and enterprises in the republic have done a considerable amount recently to improve the quality of milk sold to the state. At the same time, as discovered during an investigation, many kolkhozes and sovkhozes do not give the necessary attention to this important matter.

Often the quality of milk drops because farms do not have the necessary veterinary-sanitation system. As a result of the permissiveness of zoo-technologists and farm directors, in a number of enterprises sanitation rules for washing milking inventory are not adhered to. These kinds of violations have been found, for example, in every third enterprise of Paydeskiy Rayon. Gross violations of rules are tolerated in transporting milk, which also has a negative effect on its quality.

Milk quality often decreases because on many farms refrigeration equipment is in disrepair. Under such circumstances, especially in summer, it is impossible to cool milk. It is for this reason that milk quality dropped in Sovkhoz imeni V. I. Lenin of Tartuskiy Rayon, Khummuli Sovkhoz of Valgaskiy Rayon, Sovkhoz imeni Sommerling of Khar'kovskiy Rayon and in other enterprises.

Kolkhozes and sovkhozes incur great losses as a result of the sale to the state of low-quality milk. Thus, the enterprises of the Paydeskoye RAPO [Rayon Agro-Industrial Association] did not receive over 160,000 rubles, of the Khar'yuskoye RAPO—over 140,000 rubles as a result of selling second quality milk last year.

In the committee serious criticism was directed at rayon associations of Sel'khoztekhnika [Agricultural Equipment Association], which often do not provide the necessary technical servicing of technology on livestock farms, as is foreseen in contracts with enterprises.

As emphasized in the committee meeting, both ESSR Agroprom and the RAPO are still not concerned enough about milk quality. Industrial enterprises that

produce dairy products are in a difficult position because of this. After all, the quality of butter, cheese and other dairy products depends first and foremost on the quality of the raw material that is supplied by enterprises.

The committee turned the attention of the deputy chairman of ESSR Agroprom, Comrade Ye. Kul'bin, and of the director of the Main Administration of Livestock Raising, Comrade Yu. Reynol'd, to the fact that the RAPO is not involved sufficiently in questions of improving milk quality and that it does not exhibit the necessary demandingness toward directors of enterprises who allow various violations of veterinary-sanitary rules on farms, and obliged them to take corrective measures.

Scientists Seek Solution

Tallinn SOVETSKAYA ESTONIYA in Russian 15 Nov 84 p 1

[Article by Estonian News Agency, Tartu, 14 Nov: "Scientists to Agriculture"]

[Text] Problems related to curtailing losses and increasing production quality in livestock raising are being discussed by scientists and practitioners who are meeting today in the Estonian Scientific Research Institute of Livestock Raising and Veterinary Science imeni A. Mel'der. An all-union meeting of the ESSR Ministry of Agriculture and VASKhNIL [All-Union Academy of Agricultural Sciences imeni V. I. Lenin] opened here to discuss these questions that are so important for the implementation of the Food Program. The deputy chairman of ESSR Agroprom, Yu. Kul'bin, greeted conference participants in the name of our republic's agricultural workers.

At the center of attention of conference participants is the quality of dairy products. Our country is the largest producer of this valuable product in the world, yet output of food products per ton of milk is still lower than average international indicators. What must be done to make sure that everything that is produced on farms is delivered to the consumer in quality form? Scientists from the RSFSR, the Ukraine, Belorussia, the Transcaucasus, Central Asia, the Baltic states and other regions of the country shared the results of their research. E. Val'dman, director of the Estonian Scientific Research Institute of Livestock Raising and Veterinary Science and VASKhNIL academician, presented a speech about the work experience of our republic's scientists and livestock farmers. Dozens of scientific reports will be heard in different sections of the conference. Recommendations are being developed on decreasing losses of milk, beef, pork and other livestock products during their production, procurement, shipment and processing.

Conference participants will become acquainted with the work of research enterprises and laboratories in the institute.

Participating in the work of the conference is A. Ryuytel', member of the Buro of the Central Committee of the Estonian CP and Chairman of the Presidium of the ESSR Supreme Soviet.

Quality Upgrading Discussed

Tallinn SOVETSKAYA ESTONIYA in Russian 20 Nov 84 p 2

[Article by A. Olkonen and Yu. Karis, scientific workers at the Estonian Scientific Research Institute of Livestock Raising and Veterinary Science, Tartu: "What Lies Behind the Tenth of a Percent?/Food Program: Problems, Solutions/ Fat Content of Procured Milk: Components of Losses"]

[Text] Aside from specialists, few people know that increasing fat content in milk by only one tenth of a percent means increasing income for the republic's enterprises by almost 8 million rubles. This is a sum that is worthy of attention.

It is satisfying to note that purposeful breeding work resulted in an increase in fat content of milk produced in the republic's enterprises from 3.71 percent in 1971 to 3.98 percent in 1983, and in Yygevaskiy and Kokhtla-Yarveskiy rayons--to even 4.11 percent. Of course, this result is adequate.

But if we analyze data on the fat content of milk that makes it to the dairy plant, the picture is a little different. Last year fat content in procured milk equalled 3.55 percent in the country as a whole on the average. The highest indicators were in Azerbaijan--3.90, Latvia--3.79 and Estonia--3.74 percent. It would seem that we have no reason to be disappointed--we are third in the country. Nevertheless, 0.24 percent is still lost. Where?

Losses of milk fat occur during filtration. Fat also sticks to the walls of pipelines in milking machines and in equipment used for primary processing. In order to decrease losses of milk fat it is expedient to utilize tub types of equipment with periodically operating mixers when cooling milk; this will prevent milk from settling and sticking to the walls of the tub in the form of cream. Before pumping milk into an autocistern it must also be carefully mixed.

Before sending milk to processing plants it is essential to determine its fat content locally at the place of production and to record this data on the invoice. Unfortunately, this is still not done everywhere by far. There are many reasons for this--the absence of laboratories or cadres, or a great deal of other work to be done in the enterprise. The result is a loss of income because not all dairy plants are fair yet in their determination of fat content in procured milk. Experiments that have been conducted show that on the average fat content is downgraded by 0.07 percent in dairy combines.

The process of determining fat content was fairly labor-consuming until recently due to the danger of burns from sulfuric acid. Early this year changes were made in GOST standards allowing us to use the instrument method to determine fat content in milk in enterprises of the dairy industry. This method eases labor and makes it less dangerous; the results of the analysis can be seen immediately on the display panel of the equipment. However, at the present time this method is used only by the Vil'yandiskiy, Paydeskiy, Tallinskiy, Kokhtla-Yarveskiy, Kingiseppskiy and Rakverskiy dairy combines.

The problem does not only involve the equipment itself although it is true that our industry is still not manufacturing it in sufficient quantities. The main thing is that some enterprises do not want to make a transition to progressive methods of determining fat content in milk and simply fear innovations.

Over a year ago, following a proposal by the Estonian Scientific Research Institute of Livestock Raising and Veterinary Science, an experiment was begun in dairy combines of Tartu, Vil'yandi and Payde. Here representatives of enterprises are working and using instruments (turbodimetric method) to determine the fat content of milk. They do this daily and for every new batch that arrives in contrast to other combines, where representatives of enterprises are not themselves involved in determining fat content of arriving milk. The combine's laboratory workers in turn determine fat content using the instrument ultrasound or butyrometric methods. As a result of such joint mutual examination the difference in determinations of fat content decreased to 0.02 percent during the first half of 1984. In the future representatives of enterprises in all of the republic's rayons should be supplied with instruments so that fat content of milk arriving from farms can be determined on a regular basis. This will help normalize relations between enterprises and dairy plants and will enable us to more objectively evaluate the work of livestock farmers to increase the fat content of milk.

An analysis shows that unfortunately, milk is often thinned on farms with the addition of water. Today, with the help of a cryoscope, which determines the freezing point of milk, it is possible to discover the water in milk and determine its percent composition in just a matter of minutes. Evidently, enterprises must more widely utilize the achievements of science and technology, and to regularly determine the density of milk in various reservoirs and even in individual dairy groups, discovering and punishing the guilty.

As we can see, the component factors for increasing the fat content of milk are basically organizational in nature. All of these measures are fully attainable by our enterprises. A great deal has already been done in the republic. This is attested to by the results: whereas in 1975 only about 30 percent of enterprises delivered milk with a fat content of over 3.7 percent, in 1983 there were twice as many such enterprises. This means that there is a real possibility of increasing the fat content of all procured milk to 3.8 percent in the near future.

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CULLING NONPRODUCTIVE COWS FROM HERDS RECOMMENDED

Moscow SOVETSKAYA ROSSIYA in Russian 14 Nov 84 p 1

[Article by G. Bembinov, candidate of agricultural sciences: "In Reports and... on Farms"]

[Text] Now that the overwintering of livestock has begun, the following question has become urgent here. Although we have stored a sufficient amount of feed, we must use it carefully and strive for a high level of productivity in animals. Our plans are intensive. Our obligations are great. We are obliged to retain low-yielding and even totally barren cows in the herd. We are not allowed to cull them from the herd because plan figures would then be violated.

By profession I am a zootechnologist and I can say with complete assurance that the existing system of culling unproductive cows according to orders "from above" is antiquated. Right now a farm specialist cannot himself change the size of the herd. Any attempt to do this is condemned immediately, although a number of animals should have been sent to the meat combine long ago because their produce neither milk nor progeny. The labor of workers and feeds are expended in vain. However, reports on the size of the herd are completely up to date.

I would like to ask whether any changes are planned with regard to the above and whether there is any experience that can be adopted?

[Signed] A. Ivantsov, zootechnologist, Smolensk Oblast.

Commentary on Letter by Scientist

The question raised by the letter's author is of great significance--the subject being discussed is the qualitative factor of growth. The zootechnologist is correct--during the overwintering period each kilogram of feed must be taken account of. Keeping unproductive cows in the herd is not advantageous at all, and this is especially true in the winter time.

Many of our kolkhozes and sovkhoses are confidently moving along the path of intensive development of livestock raising and they decide independently

about what type of herd to have. Interesting, for example, is the experience of the Tatar ASSR, where the culling of unproductive cows is carried out by enterprises and not by the agricultural ministry of the autonomous republic.

It is true that there were concerns here that when livestock farmers and specialists received the right to cull cows the size of the herd would decrease. However, the total size of the herd did not decrease and its production effectiveness increased significantly. Judge for yourselves--89 calves were produced per 100 cows, instead of the 80 per 100 produced 2 years ago. This affected other branch indicators. Average milk yield per cow in the Tatar ASSR increased after the expansion of rights to economic independence by 343 kilograms, and weight gain per head--by 20 kilograms. As a result, the state was sold 114,000 tons more milk and 12,000 tons more meat. Also noteworthy is the fact that by decreasing the number of barren cows by half it was possible to save a large amount of feed.

It seems like such a simple organizational measure, yet the results are impressive. In reality not a great deal was done--people were freed of petty guardianship and were given the opportunity to decide for themselves how much and which types of cattle to keep on farms. And what a change this was!

It should be noted that significant work to improve the reproduction of the herd is being carried out by kolkhozes and sovkhozes in the Karelian and Chuvash ASSR's and Ulyanovsk, Sverdlovsk and Perm oblasts, where in 1983 88 calves were produced per 100 cows. In Krasnodar and Krasnoyarsk krais 86-87 calves were produced per 100 cows.

However, high indicators have not been achieved everywhere by far. In many enterprises of the RSFSR Non-Chernozem Zone average milk yield per cow comprises 2,500-2,600 kilograms annually. According to the opinion of specialists, it would be possible to increase milk yield to 3,000 kilograms even with the current breed composition of the herd by achieving a normal level of feeding and the timely culling of unproductive and barren cows. Unfortunately, recently the proportion of barren cows in the herd has increased in comparison to 1970. The reason for this is the extensive execution of dairy farming. If the herd is increased further by 200,000 head, let us say, without a radical improvement in feeding and upkeep then an additional expenditure of 400 million rubles of capital investments would be required to meet the cost of all livestock places. If capital input were directed into creating a feed base and improving the breed composition of dairy cattle, the return on expenditures and the intensification of the branch would accelerate even with the existing number of cattle.

Unfortunately, in many regions every practical step of the direct organizers of dairy production is ordered "from above." This is the situation in Tuva, Kalmyk and Checheno-Ingush autonomous republics and in Rostov and Amur oblasts. It is not surprising that in lagging enterprises where there is a large number of unproductive animals only an average of 72-74 calves are produced per 100 cows.

Statistics are inexorable--every barren cow yields 600-700 rubles of losses annually. In the RSFSR as a whole this adds up to tens of millions of rubles. But the main problem has nothing to do with rubles although they must be taken into account. The problem is that maintaining unproductive cattle means above all that there will be an underproduction of meat, milk, butter, raw materials, cheese and other products. We can in no way accept this situation.

The key to success is skilfull organization. In speaking at the April 1984 Plenum of the CPSU Central Committee, Comrade K. U. Chernenko pointed to the necessity to decisively improve the operations of agro-industrial associations, to self-critically analyze shortcomings, to determine ways to eliminate inadequacies and most importantly, to determine ways to deal with new and great tasks related to the intensification of our livestock raising.

8228

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INDUSTRIALIZED HOGBREEDING PROMOTED IN SIBERIA, FAR EAST

Omsk ZEMLYA SIBIRSKAYA, DAL'NEVOSTOCHNAYA in Russian No 9, Sep 84 pp 2-3

[Article by A. G. Kryuchovskiy, director of the hogbreeding department of SibNIPTIZh [Siberian scientific research point for technology in the livestock industry] and candidate of agricultural sciences: "Intensive Methods for Hogbreeding"]

[Excerpts] The country's Food Program, passed at the May 1982 Plenum of the CPSU Central Committee, established the goals to be attained in hogbreeding-- by 1985 pork production is to increase to 6.5 million tons annually (slaughter weight) and by 1990--to 7-7.3 million tons.

Hogbreeding is the largest source for replenishing meat reserves. Average annual pork production in all categories of enterprises comprises about one-third of the total meat balance. During recent years considerable work has been done in the branch in production specialization and concentration. By 1985 hogbreeding complexes and large farms will produce about half of all pork raised in the country using industrial technology.

The main reserve of the branch is continued intensification of production. In recent years there has been a noticeable strengthening of the material-technical base of hogbreeding, which creates the necessary prerequisites for extensive renovation of old hogbreeding farms in kolkhozes and sovkhoses and for the universal introduction in them of an industrial technology for maintaining animals. Enterprises in which hogbreeding is a subsidiary branch make a considerable contribution to pork production. In Krasnodar Kray alone over 160,000 piglets were raised on such farms in 1983 to meet public and consumer needs.

Still, the main contribution to the branch's development must be made by specialized enterprises which rely on progressive experience and scientific achievements. Thus, the scientists of SibNIPTIZh and Altay NIPTIZh [Scientific research point for technology in the livestock industry] have developed and introduced, with the active participation of specialists from hogbreeding sovkhoses, a flow system of reproducing and fattening hogs for complexes with a capacity of 12,000, 24,000 and 36,000 animals, which increases the reproductive possibilities of brood sows, allows us to utilize facilities more efficiently and enables us to organize the labor of workers in a better way. In these complexes animals are maintained in small groups and are exercised daily.

In Luzinskiy Sovkhoz, Omsk Oblast, a technology has proven itself well that is based on the cluster maintenance of piglets from birth until their delivery to the meat combine. Here there is a sharp drop in losses related to moving and regrouping animals, and average daily weight gain of weaned piglets on the hoof increases by a factor of 1.5, which intensifies all pork production. Raising and fattening hogs in clusters enables workers to achieve a weight in hogs after fattening of 113 kilograms at the age of 220 days instead of the 266 days needed using analagous feeding techniques but also periodic moving and regrouping of animals too. Correspondingly, average daily weight gain of piglets being fattened equalled 656 and 593 grams, feed expenditures per unit of weight gain equalled 2.3 and 3.8 feed units and the cost of pork was 79.56 and 96.17 rubles.

Flow technology of pork production could become more effective if a transition is made from a three-phase to a two-phase cycle and if most attention is focused on cluster maintenance of piglets up to the age of 4 months. Scientific-production tests and production examinations of 437 brood sows and 3,641 piglets revealed that the unification of piglets from various clusters is best carried out 20-25 days after birth and not 10-15 days after birth, as was the previous practice.

During scientific-production testing, 1,066 piglets aged 2-4 months were fattened using paired clusters created during the suckling period. After transfer to other pig pens such clusters yielded better results than mixed pig pens--the live weight of every test animal was higher than the control by 5.2 kilograms or 17.1 percent, and average daily weight gain--by 77-85 grams. The technology for raising two combined clusters of piglets during the suckling period enables farmers to utilize pig pens 9.3-15.8 percent more effectively, to obtain 9 piglets per sow for weaning, and to curtail the fattening time needed to gain 36-40 kilograms to 15-20 days. Here labor expenditures per quintal of weight gain decrease by 13.6 percent.

Hogbreeding concentration and specialization being carried out in the region, with the gradual transition of the branch to an industrial basis, is integrally related to a strengthening of pedigree work to improve existing and develop new breeds, lines, types and crosses. In the region, highly productive hog breeds that are capable of meeting plan goals and that are well adapted to Siberian conditions include the Large White, Siberian Northern and Kemerovo breeds, which already today, with full-value feeding, achieve an average daily weight gain of over 700 grams, and in the best lines of boars--about 800 grams with an expenditure of about 4 feed units per unit of weight gain.

In the region, the primary brood herd of these breeds is concentrated in four breeding plants, 13 breeding sovkhozes, on breeding farms of large hogbreeding complexes, NII's [Scientific Research Institutes], SKhI's [Agricultural Institutes] as well as on a number of sovkhoz and kolkhoz hogbreeding farms. The best animals of different breeds of hogs, characterized by high productive qualities and great breeding value, are found in specialized breeding enterprises. Live weight of mature boars reaches 310-354 kilograms, the length of the body--176-185 centimeters; the corresponding figures for brood sows are 237-261 kilograms and 160-170 centimeters. The fertility of brood sows

equals 10.8-12.1 piglets per farrowing; milk productivity equals 55.1-62.7 kilograms and the weight of the cluster at weaning is 172-246 kilograms. In development, boars of all breeding herds meet the requirements for elite class, and brood sows--for elite and first class; in commercial enterprises they meet the requirements for first class. In breeding plants and breeding sovkhoses boars and sows which have been checked for the quality of their progeny are utilized. Each year breeding enterprises raise over 80,000 high class young animals for sovkhoses and kolkhoses.

In breeding that is directed at creating highly productive herds, breeding enterprises widely use immunogenetic control, which helps to achieve the correctness of selecting replacement young and singling out positive lines, dependability in evaluating reproducers--sires for quality of progeny; and control of transmission of hereditary traits during hybridization of animals.

On the basis of research conducted by SibNIPTIZh and of the experience of progressive practices, two and three breed commercial crossbreeding of hogs has been recommended for Siberian kolkhoses and sovkhoses. Direct and reverse crossbreeding has been recommended for the Large White and Siberian Northern, and the Large White and Kemerovo as well as for hogs of these breeds and their two-breed hybrids for fattening. Hybrid young animals of the aforementioned crosses are characterized by high fattening and meat properties; carcasses (weight at slaughter of 100-105 kilograms) meet the requirements for meat and bacon.

The work experience of Luzinskiy, Kudryashovskiy, Chistogorskiy, Malinovskiy, Pervomanskiy, Tomskiy, Nekrasovskiy, Dzemginskiy and Pribaykal'skiy hogbreeding complexes as well as of the large Belovskiy and Imbezhskiy hogbreeding sovkhoses shows that by using commercial crossbreeding and hybridization of these breeds it is possible to produce an additional 8-10 percent production.

Hogs being raised in the region are being improved in the direction of developing new groups and lines of the meat type by means of intra-breed selection and the addition of bloodlines of specialized meat breeds. Animals of the new meat type (KM-1) reach a live weight of 100 kilograms at the age of 180 days, the output of meat in carcasses equals 60 percent, an average daily increase of 732-770 grams, with a feed outlay of 3.85 feed units per 1 kilogram of increase. Hogs of this type, together with landrasa [a Danish breed], are used as the concluding breed.

SibNIPTIZh has determined that the use of mixed feed developed by it for Siberia, the recipe of which includes grain forage enriched with BVMD [Protein-vitamin-mineral supplements] (20 percent nutritive value), increase the effectiveness of rations by 15-32 percent and decrease the cost of weight gain by 33 percent. Inclusion in the ration of special combined silage (20-30 percent nutritive value) promotes reproductive qualities in boars and brood sows on the level of requirements for elite and first class, daily weight gain during fattening of 600-650 grams with an expenditure of 4-4.9 feed units, including 3.1 feed units of concentrates. In the summer it is recommended that the ration be enriched with leguminous grasses (up to 20 percent nutritive value), which achieves a daily weight gain of 500-600 grams during

fattening with an expenditure of 3-4 kilograms of concentrated feeds per kilogram of weight gain.

At the present time many enterprises of our region have amassed rich experience in summer camp-pasture upkeep of hogs. Scientific institutions have elaborated green conveyor schemes. The selection of crops for every enterprise is determined with a consideration of specific local conditions and provides for their use from May to October. Most greatly disseminated were camps for suckling sows with piglets consisting of 30 combined mobile buildings. The advantage of such a camp is that it is easy to move to any part of the pasture. The length of a building is 4.35 meters, width--2.0 meters, and height--1.8 meters. The buildings are set up in a square or in two rows. From the third-fourth day of life piglets are taught to become accustomed to walking. Five to six sows and their piglets leave their buildings simultaneously. Piglets become accustomed to walking by the end of the first week. To teach them to eat, during the first few days troughs with feeds are placed near the buildings; from the age of 5-7 days piglets are fed in special "cafeterias."

Camp upkeep of hogs is skilfully utilized in Zarya Sovkhoz of Kemerovo Oblast. Using this method the enterprise raises over 15,000 piglets with an average weaning weight of about 19 kilograms. Over 50 percent of the piglets from sows being checked (first farrowing) are produced in summer camps, which exist on all farms, including fattening farms. The camps are stationary. Planted around them are perennial leguminous grasses as well as annual grasses for supplementary feeding in stalls and pastures.

The recent orientation of hogbreeding farmers toward the full-value concentrated type of feeding has greatly simplified, but not improved, fattening technology. A similar situation has developed in raising young. All primary work has narrowed down to a simple scheme--to raise grain forage crops, exchange them for mixed feed, to bring feed to farms and distribute it to animals, assuming that a weight gain of 500-600 grams per head has been achieved. Things turned out to be much more difficult, and not only because the mixed fodder industry is incapable of supplying such feeds. They require additional processing and particular methods of preparation for feeding.

The absence of succulent feeds in rations, especially in commercial production, results in agalactia in sows, in vitamin deficiency and in a disturbance in mineral exchange in young and others. The introduction into the ration of succulent feeds requires their preparation prior to feeding. However, in hogbreeding complexes there are still extremely few model feed kitchens. SibNIPTIZh has studied the effect of moist and dry feed mixtures on the productivity and on the condition of the stomach and muscle tissue of young feeder animals. The herds of two model pigpens-feeder pens having 156 stalls each were under observation. In one hogs were fed moist grain, and in the other (control)--dry loose grain, but equal in nutritive value. The average daily weight gain of young receiving moist feed was 46.9 percent greater, the weight of one head at the end of fattening--16.5 percent greater and feed expenditures per kilogram weight grain--17 percent less. This example once again shows that prior to feeding, feeds require preparation according to their type and quality and in order to do this each hogbreeding farm must have a feed kitchen or feed shop.

The transition of hogbreeding to an industrial base has required the elaboration of a new technology that will enable workers to produce a large quantity of high-quality production with minimal expenditures of labor, feed and other material resources.

During transition to an industrial base in commercial hogbreeding the priority problems to be dealt with include increasing the full-value of feeding, organizing the upkeep and effective use of hogs on commercial farms with maximal mechanization and automation of production processes. The transition of pedigree hogbreeding to an industrial base presupposes the use in breeding work of the newest selection methods and the specialization of breeding enterprises with the goal of creating a system of commercial and pedigree hogbreeding, in which the latter satisfies branch needs for a pedigree herd capable of withstanding a high degree of intensification during reproduction in commercial complexes.

This type of comprehensive approach to the branch during its transition to an industrial base with the creation in each oblast, kray and autonomous republic of a well thought-out system for managing commercial and pedigree hogbreeding that is integrated with local feed, climatic, economic and other conditions will more fully meet the goals established by party and state resolutions on sharply increasing pork production.

Thus, the comprehensive introduction of industrial technology in hogbreeding will allow us to increase productivity in the region by a factor of 2.7-3.0 and to decrease operating costs by 28-30 percent, in addition to increasing the productivity of animals of selected breeds, improving production quality and economizing on feeds.

• COPYRIGHT: Zhurnal "Zemlya sibirskaya, dal'nevostochnaya", 1984.

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BELORUSSIAN LIVESTOCK SECTOR PROBLEMS CONSIDERED

Moscow SEL'SKOYE KHOZYAYSTVO BELORUSSII in Russian No 10, Oct 84 pp 4-5

[Article: "Utilizing Reserves of Livestock Raising More Fully"]

[Text] Workers of livestock raising farms in Belorussia are working in good spirits nowadays. Each worker is gladdened by the fact that our republic has been awarded the Honorary Certificate of the CPSU Central Committee, the USSR Council of Ministers, VTsSPS [All-Union Central Trade Union Council] and the Komsomol Central Committee. This honor marked the results achieved by workers during all-union socialist competition for the successful execution of overwintering of livestock and for increasing the production and procurement of livestock products during the past stall-upkeep period.

Also recognized as victors in all-union socialist competition were Brest Oblast, Zhabinkovskiy, Brestskiy, Vitebskiy, Gomel'skiy, Grodnendskiy, Korelichskiy, Minskiy, Slutskiy, Stolbtsovskiy and Goretskii rayons as well as 56 kolkhozes, sovkhozes and enterprises within the republic's agro-industrial complex.

It is noteworthy that growth in production output within livestock raising has become stable in nature in most of the republic's enterprises and that this branch is becoming more and more profitable. The effectiveness of dairy and meat farms is growing from year to year.

But, as noted at the republic meeting of the party, soviet, trade union and komsomol aktiv, the recognition of the republic as victor in all-union socialist competition is not only an evaluation of what has been done, but an advance for the future as well. In order to move farther, to achieve even weightier results, we must persistently struggle with existing shortcomings in the development of the livestock-raising branch. One of them is the great variety in the level of development of commercial farms. In every oblast there are enterprises which not only did not move forward but actually retreated from achieved boundaries. This year meat sales decreased in the sovkhozes and kolkhozes of Rossonskiy, Ushachskiy, Chashnikskiy, Braginskii, Dobrushskiy, Petrikovskiy, Rogachevskiy and Slavgorodskiy rayons. The enterprises of Uzdenskiy Rayon decreased the sale of milk to the state.

An analysis of the results of the last overwintering period show that many enterprises bore losses because of their lack of skill in utilizing existing

feeds well. Many farms have still not been provided with feed shops. In some enterprises feed is still utilized without preliminary preparation. Mismanagement in the preparation of facilities for the overwintering of cattle results in great losses. And after all we all know that in damp and cold facilities the effectiveness of the feeds eaten by animals decreases significantly. In some enterprises the return on farms decreases as a result of the low quality of products sold to the state.

Councils of oblast and rayon agro-industrial associations, and directors and specialists of kolkhozes and sovkhozes are called upon to strengthen organizational and educational work in the labor collectives of livestock farmers. It is essential to persistently strive for improvements in the situation on every farm so that in the final year of the five-year plan everyone reaches levels set by the Food Program with regard to the sale to the state of meat, milk and other livestock products and eliminates lags tolerated in past years.

In order to successfully solve this task we must increase average milk yield per cow to 2,500 kilograms and to achieve an average daily weight gain of 650 grams in feeder cattle and 400 grams in hogs. At the same time it is essential to improve production quality. Cattle sold to the state should not weigh less than 400 kilograms. No less than 90 percent of the milk delivered to the state by every enterprise must be first quality and in refrigerated form.

What must be done to achieve this? Existing conditions and increased demandingness toward the branch of livestock raising give rise to the persistent necessity to radically change the style and method of work of specialists in the zootechnical and veterinary services. Above all, it is necessary to raise the level of discipline and professional culture in work in all production sections. It is the zootechnologist and the veterinary worker who bears all of the responsibility for the creative use and strict adherence to modern and progressive production technology. In the enterprise he is the lawgiver, the executor and the first in the line of responsibility for effectiveness of results.

Dairy farming requires special concern. Today the main goal is to secure a growth in productivity of cows and maximal preservation of new calves.

It is important to utilize every kilogram of feed to encourage maximal returns in every kolkhoz and sovkhoz, and to make the transition to differential feeding of cows. Everywhere it is necessary to achieve precise adherence to the established routine of the day and to the technology for milking cows (especially as concerns obtaining the last drops of milk during milking), to strengthen controls over the use of milk for intra-enterprise needs and to close all potential channels of losses of dairy products.

The zootechnical and veterinary services are called upon to observe the readiness of cows for calving on a daily basis; it is important to eliminate sour feeds from rations. Each dairy farm must organize 24-hour duty. The necessary conditions have been created for maintaining newborn young that will guarantee is protection from disease and death. Special attention is required by calves that have reached the breeding age. They must be put into separate groups, transferred to untethered upkeep and exercised regularly.

An analysis shows that in a number of enterprises growth in the output of livestock products is being hindered to a considerable degree by the great degree of barrenness in the brood herd. The reason for such a situation is concealed not only in a deterioration in the level of feeding and in the quality of feed but also in the slack attitude of some specialists with regard to carrying out their work duties. Because of them shortcomings are tolerated in raising replacement young and the technology for the artificial insemination of cows is violated. This type of situation cannot be tolerated.

Progressive experience shows that only the intensive renewal of the herd and the annual introduction of no fewer than 25 primipara heifers per 100 cows create possibilities for the accelerated growth of the herd and for its qualitative improvement. The zootechnical service is obliged to observe the strictest technological discipline in complexes and farms involved in directional raising of heifers. It is important to fulfill the most important requirement everywhere--by the age of 16-18 months to have heifers weighing 360-400 kilograms.

In order to improve the effectiveness of operations of dairy as well as heifer complexes, three important tasks must be carried out: first--to supply them with locally-produced feed in the quantity needed; second--to supply a high-quality herd on schedule and third--to achieve precise adherence to technological requirements by service personnel.

Specialists in livestock raising must focus attention daily on improving milk quality. Twenty to forty percent of the milk sold by kolkhozes and sovkhoses of Iv'yevskiy, Rossonskiy, Kalinkovichskiy and Kopyl'skiy rayons is of second class quality, which brings losses to themselves and to the state. Zoo-veterinary specialists are obliged to increase controls over adherence to sanitation standards on farms, to the technology for milking cows and to the correct use of units, thereby improving the qualitative indicators for milk.

The second problem is permanently decreasing the fat content in milk. This situation can be corrected. Here zootechnologists must take measures. First, they must introduce more coarse and succulent feeds containing a sufficient quantity of sugar, protein and mineral substances into cow rations. Secondly, they must monitor adherence to the technology of milking as well as the careful regulation of all working parameters of milking equipment. Thirdly, they must improve breeding work, utilizing the sperm only of bulls qualified to upgrade the line.

The main reserve for increasing beef production is the purposeful raising of young with the goal of achieving a weight of 400-450 kilograms by the age of 16-18 months. More attention must be given to creating suitable conditions for feeding and maintaining young to the age of 180 days. As of yet, weight gain does not exceed 350-400 grams. This is why feed groups are supplied with young not when it is 9-10 months of age, but 15-20 months. Calves whose development was thwarted during the first period of their life due to poor feeding and upkeep cannot subsequently provide the necessary return on a higher level of feeding. Similar situations must not be repeated in the future.

Hogbreeding is a great source with which to increase meat production within a short time. Progressive experience attests to the fact that on the basis of the intensification of this branch alone it is possible to increase pork production and to bring it up to a minimum of 30 percent of total meat sales. Priority attention should be given to questions of organizing the feeding of animals. Because of the shortage of full-ration mixed feed the use not only of concentrates but also of grass meal made of leguminous grasses, carrots, skimmed milk and paste should be foreseen. Deserving of extensive dissemination is the experience of feeding hogs mixed silage, food wastes and other feeds which maximally raise the coefficient of useful action of grain. This is how hogbreeding is organized in Leninskiy Put' Kolkhoz of Nesvizhskiy Rayon, where each year 500-600 tons of pork are produced using rations in which concentrated feeds contribute 50 percent of the total nutritive value. Good results with similar small expenditures are achieved by workers of hogbreeding farms in Kolkhoz imeni Lenin of Kopyl'skiy Rayon and Kolkhoz 1 Maya of Slutskiy Rayon.

While striving for a tangible growth in meat production, more effective use should be made of the possibilities in poultry raising, sheep farming and rabbit farming for meat purposes.

One of the most important reserves in livestock raising is the persistent struggle to decrease losses resulting from the sickness and death of animals, especially young. Each year as a result of death and necessary slaughter, in many enterprises up to 25 percent of total calves and piglets born are removed from meat resources. The reasons for this lie above all in decreased discipline and responsibility and in an unconscientious attitude of individual specialists. Zootechnical specialists and the zootechnical service of rayons, kolkhozes and sovkhoses are called upon to strengthen work to decrease the incidence of disease in animals. Concern about preserving the quality of feed and supporting high sanitation standards on farms must become priorities.

The organization of breeding work requires radical improvements. Scientific cadres in the republic and specialists must accelerate the development and introduction into production of new specialized lines of hogs reaching a weight of 100 kilograms in 170-180 days, highly productive herds and lines of dairy cattle producing 7,000 kilograms of milk, new plant types of sheep of the Prekos breed with a wool shearing yield of 6.3 kilograms and highly productive crosses of poultry.

Everywhere it is essential to improve work to increase the effectiveness of utilizing the feed available in each kolkhoz and sovkhos. As shown by experience, just by means of preparing feed properly and enriching it with various supplements it is possible to raise nutritive value by 15-20 percent. This is why on every farm all feeds must be fed in the form of prepared feed mixtures with the introduction of balancing supplements--macro- and micro-elements. The struggle for a large return on feed is today's priority goal. It is the patriotic duty of every labor collective and livestock farmers to produce no fewer than 9 quintals of milk, 1.2 quintals of weight gain in cattle and 1.4 quintals of weight gain in hogs today.

The role and responsibility of specialists within the RAPO [Rayon Agro-Industrial Association] administrative apparatus must be increased persistently. It is important that each specialist be able to understand the local situation, provide the necessary advice and make independent decisions on organizational-technological questions having to do with the development of the livestock-raising branch.

Special attention should be given to farm workers. Concern about improving labor and living conditions, about increasing professional skill and about creating maximal possibilities for achieving the highest production indicators must be a priority for every director and specialist in an enterprise.

It must always be remembered that the great and complex tasks presented by the party at the 26th CPSU Congress related to improving the economy of agriculture will be achieved more successfully the higher the conscientiousness of every village worker and the better the worker conceptualizes about the common goal and his place in the national struggle. All political-educational work in every kolkhoz, sovkhos and labor collective must be subordinate to this goal.

It is the duty of party organizations, RAPO councils and directors and specialists of kolkhozes and sovkhoses to actively develop socialist competition among farm workers for the maximal utilization of all reserves within the livestock raising branch. Only under such conditions will every enterprise be able to successfully fulfill five-year plans on the sale of milk, meat and other products to the state. Achieving this goal is a matter of honor for every labor collective and livestock farmer.

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LIVESTOCK

LAGGING PRODUCTIVITY OF UZBEK DAIRY COMPLEXES EXAMINED

Tashkent EKONOMIKA I ZHIZN' in Russian No 9, Sep 84 pp 61-64

[Article by V. Shalimov, candidate of agricultural sciences, and O. Morozova:
"Unjustified Expenditures"]

[Text] The industrial technology for milk production was first introduced into operations on farms throughout the republic in 1974. At the present time, there are 170 dairy complexes and mechanized farms, with more than 20 percent of the cows in the public sector being concentrated at these facilities. A number of farms, in converting their animals over to this progressive technology, achieved production successes in raising the productivity of the dairy herd, in labor productivity and in lowering the production costs for the products being produced and hence they achieved a high economic efficiency for the branch.

Fine examples of this are the dairy complexes at the kolkhozes Leninskiy Put' and imeni Kalinin in Kalininskiy Rayon, imeni Lenin in Bekabadskiy Rayon, Lenin Yuly in Bukinskiy Rayon, the sovkhoses Chinaz and imeni XXIV Parts'yezda in Tashkent Oblast and the kolkhozes Kommunizm in Gizhduvanskiy Rayon in Bukhara Oblast and imeni Engel's in Samarkandskiy Rayon in Samarkand Oblast. An average of 3,700-5,000 liters of milk is being obtained from each cow here during lactation, with 1.5-1.87 feed units being expended for the production of 1 kilogram of product; the production cost per quintal of milk here is 25 rubles and 39 kopecks to 28 rubles and 95 kopecks.

However, for the republic as a whole the dairy complexes are developing only slowly. And there are many reasons for this. We will cite only a few of them.

The dairy complexes that have been erected have been supplied with animals only to 79.7 percent of their capability and the increase in the herd has amounted to slightly more than 800 cows -- 1.2 percent of the overall number. Moreover, during the past year a reduction even took place in the number of animals at 18 complexes -- a decrease of 707 cows.

The specialized farms are tasked with raising replacement heifers having a guaranteed milk productivity for the dairy complexes. However, for all practical purposes they are not coping with this task and particularly owing to the absence of their own feed base. The number of non-calving young cows being sold to dairy complexes by specialized sovkhoses is satisfying the farm

requirements by less than 50 percent and in terms of productivity these animals, following calvings, are lower than the standard requirements. Moreover, the number of replacement young stock at the end of 1983 had decreased by 1,900 compared to 1982.

This is why the kolkhozes and sovkhozes, in the interest of filling up their production areas, are forced to purchase heifers in other regions of the country, spending millions of rubles in the process. Moreover, the animals purchased are not pedigree animals.

The low quality replacement of the herd is restraining growth in milk productivity. Compared to 1982 when the average milk yield per forage cow was roughly 180 kilograms more than the figure for 1981, in 1983 this figure was only 35 kilograms more than the figure for the previous year. In particular, a large reduction in the milk yields took place at the dairy complexes of the kolkhozes imeni Dimitrov in Andizhan Oblast -- 245 kilograms, imeni K. Marks in Syr-Darya Oblast -- 238 kilograms, imeni Akhunbabayev in Kashka-Darya Oblast -- 170 kilograms and so forth.

It is known that the higher the productivity of a cow, the fewer the feed expenditures needed for obtaining a unit of product. Thus, for a milk yield of 1,500 kilograms, an expenditure of 1.63 quintals of feed units is required for obtaining a quintal of product. And for a milk yield of 3,500 kilograms, the expenditure of feed decreases to 1.48 quintals of feed units.

In 1983, only 10.5 percent of the republic's dairy complexes conformed to the established norms for feed expenditures. The principal bulk of the complexes exceeded them and some farms -- by a factor of 2 or 2.5. Thus feed expenditures at the Kommunizm Kolkhoz in Kuvinskiy Rayon in Fergana Oblast reached 5.3 quintals of feed units, an increase of 3.3 compared to 1982; at the Akkurgan Sovkhoz in Akkurganskiy Rayon -- 5.15 quintals of feed units. Such high expenditures cannot be justified.

In accepting the modern mechanized dairy complexes into operations, the specialist livestock breeders proceeded to employ an old technology. Naturally, no increase was noted in the norm for the servicing of the animals nor in labor productivity. It was by no means an accident that the labor expenditures for producing a quintal of milk at the 50 Let SSSR Sovkhoz in Nishanskiy Rayon, Kashka-Darya Oblast in 1983 amounted to 18.97 man-hours, thus reflecting an increase of 10.47 compared to the previous year. The production cost for the milk increased and reached 55 rubles per quintal.

What was the result? The dairy complex of the sovkhov, which was placed in operation in 1978 and which was built to accommodate 400 cows, should have produced a minimum of 1,200 tons of milk annually. The actual amount produced in 1982 was 457 tons and in 1983 -- 480 tons.

Computations reveal that in 1982 the farm fell short in its deliveries of milk by 37,100 rubles worth and in 1983 -- by 36,000 rubles worth. Owing to growth in the production costs for the milk, losses are increasing: in 1982 they exceeded 49,000 rubles and in 1983 -- 108,000 rubles. During the period in which

the dairy complex has been in operation, since 1978, owing to insufficient use of its production capabilities, the amortization deductions for capital investments for milk increased by a factor of 2.5-3 compared to those planned and in 1983 they reached 40 percent in the production cost structure for the milk.

Such dairy complexes as those at the sovkhoses Chinaz in Chinazskiy Rayon, 50 Let Oktyabrya in Akhangaranskiy Rayon in Tashkent Oblast, Moskva in Andizhan and Samarkand oblasts and others are the republic's leading facilities in terms of labor productivity. Roughly 4.4-6.3 man-hours are being expended here per quintal of output. However, even these complexes still cannot serve as a standard for industrial dairy complexes.

The flow line-departmental technology for livestock maintenance must become the principal direction to be followed in the operation of dairy complexes.

The introduction of the flow line-departmental technology, using specialized feeding and livestock maintenance in specialized departments based upon a consideration of their physiological peculiarities, is making it possible to utilize feed and facilities more efficiently, to reveal more fully the potential milk productivity and to produce high quality products with low production costs; to carry out selection-breeding work in a purposeful and thorough manner; to eliminate barrenness and to obtain annually 95-98 calves from every 100 cows; to introduce double shift operations based upon a division of labor for the livestock breeders.

When introducing the flow line-departmental technology into operations at dairy complexes, a considerable increase will take place in the role played by zooveterinary specialists.

Special importance is attached to the artificial insemination of livestock. If the work is organized properly, it will be possible to carry out the expanded reproduction of productive animals throughout the republic and thus eliminate or reduce to a minimum the importing of heifers from other regions of the country. However the artificial insemination of cows is being carried out on a formal basis, despite the existence of a republic breeding association and oblast breeding enterprises in the various areas with large staffs. All concern with regard to this very important service still centers around the sale of sperm, with no control being exercised over its use. More often than not, the farms obtain low quality offspring. The work being performed by artificial insemination stations in the various areas is unsatisfactory.

The conversion of the milking herd over to an industrial technology is impossible in the absence of high quality replacements for the herd. And in the republic there is an annual requirement for raising a minimum of 180,000-200,000 1st class first heifers. (At the end of 1983, there were only 7,700 heifers available at specialized farms for use as herd replacements).

Owing to poor feeding, the available "replacement" heifers which are 2 years of age or older are underdeveloped and naturally cannot be used as replacements for the milking herd. Thus, at the Pravda Vostoka Kolkhoz in Leninskiy Rayon

(where a large complex for 600 head has been built), there are 579 2 year old heifers the average live weight of which is 249 kilograms. Of this number, the plans call for only 40 to become cows, with 517 to be treated as carry-overs for 1985. Feed and also service personnel wages will be expended for their maintenance and there will also be amortization and other expenses -- with no marketable products being obtained.

Roughly the same situation prevails at all of the republic's dairy complexes.

Nevertheless, experience deserving of attention has accumulated on some farms in Uzbekistan. The artificial insemination of cows using deep-frozen sperm of Holland bulls has been in use since 1979 at the Besharyk Sovkhoz in Kirovskiy Rayon in Fergana Oblast, on a mechanized farm of the 40 Let Oktyabrya Department. Here 98-100 calves are being obtained annually from every 100 cows. The calves so obtained are being raised on a specialized basis. The flow line-departmental technology for cow maintenance has been introduced into operations on the farm, with the cows providing milk for 90-100 days following calvings. All of this made it possible to raise the milk productivity of the animals from 2,404 kilograms to 3,550, with the production cost of the milk dropping from 27 rubles and 70 kopecks per quintal to 24 rubles and 38 kopecks. Compared to 1979, the economic effectiveness last year amounted to 90,670 rubles.

At the Kolkhoz imeni Sverdlov in Pskentskiy Rayon in Tashkent Oblast, 100 percent of the cows are being inseminated artificially, the milk yield of the cows during lactation exceeded 4,000 kilograms and labor expenditures for the production of a quintal of output amounted to 2.8 man-hours. This is the highest indicator for labor productivity for dairy complexes throughout the republic.

In the absence of a general introduction of artificial insemination for cows and heifers on the farms and with no specialized raising of replacement young stock in the required numbers and with a guaranteed milk productivity, we will be unable to achieve an improvement in the productivity of the animals.

The conversion of dairy cattle husbandry over to the industrial technology also requires substantial improvements in production administration and in the staff structures.

Naturally, the successful operation of dairy complexes is dependent upon the strength of the feed base. However the status of this base for dairy cattle husbandry remains unsatisfactory on a majority of the farms. In 1982, in Khorezm Oblast, forage crops occupied only 17.8 percent of the sowing area structure and on some farms even less -- 13.4 and 13.2 percent.

For unexplained reasons, insufficient use is being made of intermediate crops throughout the republic: rape, rye and other crops, all of which can serve as valuable feed sources. At the Sovkhoz 60 Let Komsomola in Markhamatskiy Rayon in Andizhan Oblast, for example, intermediate crops are used for ensuring that the livestock are supplied with green feed during the early spring months and in addition 1,100-1,200 tons of silage are being procured. The experience of this sovkhaz is well known to the oblast's leaders and yet it is still not being made available to other farms.

The sowings of forage crops are still not sufficient despite an overall feed shortage throughout the republic. Last year, such undersowings amounted to 135,000 hectares.

In the development of animal husbandry operations, many farms are orienting themselves towards the use of state-mixed feed. The proportion of such feed being obtained, compared to the overall consumption, is 60 percent.

"Special attention must be given to the development of public animal husbandry operations" emphasis was placed upon this point in the materials of the 16th Plenum of the Central Committee of the Communist Party of Uzbekistan, "to achieving a sharp increase in the number of livestock and to expanding the feed base."

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KAZAKH OFFICIAL REVIEWS FOOD PROGRAM, INDICATES PROBLEMS

Alma-Ata NARODNOYE KHOZYAYSTVO KAZAKHSTANA in Russian No 10, Oct 84 pp 3-11

/Article by T. Kuppayev, deputy chairman of the Kazakh SSR Council of Ministers and chairman of the Committee for Problems of the Agroindustrial Complex of the Presidium of the Kazakh SSR Council of Ministers: "Food Complex of Kazakhstan"/

/Excerpt/ The agroindustrial complex of Kazakhstan is taking shape along the lines of accelerated development of those branches of industry which are engaged in producing the means of production, with its chief element being agriculture, and also those branches engaged in the procurement, storage and processing of agricultural products and raw materials.

Over the past three five-year plans, 34.2 billion rubles worth of capital investments have been made available for the expansion and renovation of the logistical base for the principal branches of the APK /agroindustrial complex/ and this amount was greater by a factor of four than the figure for the same period prior to the March (1965) Plenum of the CPSU Central Committee. Prior to the beginning of the 11th Five-Year Plan, the fixed capital in the agrarian sector of the republic exceeded 25 billion rubles.

The major portion of the investments is being used for raising the productive forces of agriculture proper. During the 7th Five-Year Plan, these investments amounted to 5.9 billion rubles, or 33 percent of the overall volume of investments in the national economy, during the 8th Five-Year Plan -- 7.3 billion or 31 percent, the 9th Five-Year Plan -- 11.1 billion rubles or 36 percent, the 10th Five-Year Plan -- 13.7 billion rubles or 36 percent and during the current five-year plan -- 15.5 billion rubles.

In essence, the capabilities of rural construction organizations -- a most important element of the agroindustrial complex -- were created anew. In 1983 the volume of construction-installation work for the Kazakh SSR Ministry of Rural Construction and inter-kolkhoz construction organizations alone was estimated at 700 million rubles.

Aquicultural construction developed at an accelerated rate and this made it possible to increase the area of irrigated land to 2,149,000 hectares. The logistical base for Goskomsel'khoztekhnika for the Kazakh SSR was strengthened substantially.

Tremendous resources were also invested in that sphere of the agroindustrial complex which is concerned with the procurement, storage and processing of agricultural products. This made it possible to place in operation elevators for the one-time storage of grain with an overall capacity of 6.1 million tons, granaries for 4.1 million tons, storehouses for vegetables, fruit and potatoes and refrigerators and to increase the capabilities of the sugar, oil and fat, milling-groats, confectionery, meat, dairy and other sub-branches of the food industry.

Consistent improvements were carried out in the relationships of agriculture with elements of the APK /agroindustrial complex/ and other branches of the national economy. The earnings realized by kolkhozes and sovkhoses from the sale of agricultural products to the state increased from 3.6 billion rubles in 1975 to 7.2 billion rubles in 1983. The potential of the farms increased considerably and they began purchasing more raw materials, equipment, machines and so forth. The strengthening of the economic potential had an effect on the production of goods: the average annual production of goods increased from 5,018,200,000 rubles worth during the 7th Five-Year Plan to 8,460,000,000 rubles worth during the 10th Five-Year Plan.

Constant improvements are being realized in the social-domestic working and living conditions of rural inhabitants. Compared to 1965, the average monthly wage for sovkhos manual and office workers increased by a factor of 1.9 and the wages for kolkhoz members -- by a factor of 2.3. At the same time, improvements were realized in pension payments. During this period, more than 40 million square meters of housing space, hundreds of schools, children's pre-school institutes, clubs and palaces of culture were placed in operation.

The appearance of our villages changed beyond recognition. Figuratively speaking, they were converted into large modern factories for the production of grain and meat. An extensive network of procurement and processing enterprises has been developed throughout the republic. Agricultural machine building, the chemical industry and other branches associated with the agrarian economy and which operate on the basis of realizing a large return from the fields and farms underwent further development.

The measures undertaken, the resources invested and the selfless work by the farmers made it possible to raise the average annual gross yield of grain during the 10th Five-Year Plan to 27.5 million tons. Compared to the five-year plan which preceded the March (1965) Plenum, the production of meat (in dressed weight) and milk increased by a factor of 1.5 and eggs -- by a factor of 3.3. More generous yields of potatoes, vegetables, fruit and grapes were obtained.

As a result (and despite a considerable increase in the republic's population), over the past 15 years the per capita consumption of meat and meat products was raised by 24 percent, milk -- by 5 percent, eggs -- by a factor of 2.3 and vegetables and melon crops -- by 40 percent. The population was assured an uninterrupted supply of bread, starch and macaroni products and sugar.

Nevertheless, the food problem is still far from solved. Although the food ration for a Soviet citizen conforms to the physiological norms, its structure

nevertheless is in need of improvement. And the chief goal of the country's Food Program is that of ensuring, as rapidly as possible, a stable supply of all types of food products for the population and for the industrial enterprises -- agricultural raw materials.

Special attention is being given to increasing the production of meat, milk, vegetable oil, margarine and fruit and vegetable products. By 1990 the per capita consumption of meat and meat products (taking into account imports and exports) will be 67 kilograms, milk and dairy products -- 351 kilograms, eggs -- 225, vegetables and melon crops -- 130 kilograms and potatoes -- 87 kilograms.

But the Food Program is not directed solely towards improving agriculture and its associated branches. By its very nature and scale, it is also called upon to achieve progress for the entire national economy. This is being promoted by the basic directions for implementing it, as developed during the May (1982) Plenum of the CPSU Central Committee. These basic directions are:

...proportional and balanced development of the agroindustrial complex, improvements in administration, planning and economic stimulation in all of its branches, with maximum orientation of production towards achieving high final results;

...achieving high rates for agricultural production based upon its consistent intensification and highly efficient utilization of land: a maximum strengthening of the logistical base and the accelerated introduction of scientific achievements and leading experience;

...a maximum improvement in utilization of the production-technical potential possessed by the agroindustrial complex, a considerable increase in the return from capital investments and material resources and the development of production specialization and concentration based upon an expansion of inter-farm and inter-branch relationships;

...a campaign to achieve economies and thrift, a reduction in losses, an improvement in the quality of the agricultural products through the extensive introduction of progressive technologies for the production, processing and storage of these products and the organization of transport operations using specialized transport vehicles;

...further improvements in the social-domestic living conditions in the rural areas.

First of all, an administrative reorganization should be carried out. The fact of the matter is that inter-branch relationships have become very complicated owing to growth in the scales of production and an intensification in the division of labor processes.

New branches and organizations for providing services for the kolkhozes and sovkhozes have sprung up in the republic and in the oblasts and rayons. A network of departmental enterprises and organizations for supplying the rural areas with material-technical resources, for the repair and servicing of

equipment, for applying fertilizers and for carrying out land reclamation work, construction, transport operations and the procurement, storage and processing of products. This complicated the work of the kolkhozes, sovkhoses and other agricultural enterprises. Many of them were forced to have dealings with 2-3 dozen different organizations.

Yes and various types of highly specialized enterprises and branch associations of inter-rayon, oblast, republic and even union subordination appeared in agriculture. It developed that, in addition to the existing territorial administrative organs, numerous branch "staffs" were formed to which a considerable number of farms were assigned. An increase took place in the number of individual departmental organs of administration for those enterprises and organizations providing services for the kolkhozes and sovkhoses.

In the process, the new intra-branch specialized and departmental administrative structures were somehow structured upon the agricultural administrative system which had existed up until the 1970's and this tended to complicate the production relationships. The creation of numerous organs for the administration of agriculture and its associated branches encouraged duplication in their operations, it intensified the "volitional" methods of management and it increased the size of the administrative apparatus by attracting a considerable number of skilled specialists directly from the kolkhozes and sovkhoses. In the final analysis, all of this served to lower the effectiveness of administration of the agrarian economy.

The solution for this problem was prompted by life itself. The agrarian sector was transformed into the agroindustrial complex.

In early 1983, 217 rayon agroindustrial associations were created in the republic. Their structure included 2,507 sovkhoses, kolkhozes and goskhoses /state farms/, 195 industrial enterprises, 1,293 enterprises and organizations that provide services for agriculture and 1,069 other enterprises and organizations -- for an overall work force in excess of 1,838,000 persons. There are 19 oblast agroindustrial associations in operation in the republic and their structure includes appropriate organizations of the agroindustrial complex and subordinate enterprises and rayon associations.

Various trusts, industries and other parallel and duplicating elements, all of which were no longer needed in the APK system, were abolished simultaneously with the formation of the new organs of administration.

All work during the new stage in the development of the republic's national economy will be directed by the Committee on Problems of the Agroindustrial Complex of the Presidium of the Kazakh SSR Council of Ministers, the structure of which includes 14 ministries and departments.

The new organs of administration are still acquiring experience. But even now it can be said that the majority of them are concentrating their activities on solving the urgent problems. Here we have in mind the need for achieving more efficient use of the productive capital and financial, material and labor resources available in the associations. The coordination of planning has

improved noticeably and inter-branch problems are being resolved in a more efficient manner.

Greater coordination is being achieved between the sovkhoses and kolkhoses on the one hand with the organizations of Goskomsel'khoztekhnika, Minyodkhoz /Ministry of Land Reclamation and Water Resources/, Minsel'stroy /Ministry of Rural Construction/, Mezhholkhozstroy /Interkolkhoz Construction Organization/, procurement specialists and the processors of agricultural products and raw materials on the other.

Definite and positive advances have been realized in the work of Minpishcheprom /Ministry of the Food Industry/ and Minplodoovoshchkhov /Ministry of the Fruit and Vegetable Industry/. But on the whole the work being performed by the enterprises of these ministries is still not in keeping with the requirements of the times. This was mentioned quite fairly during the 14th Plenum of the Central Committee of the Communist Party of Kazakhstan. It was noted that even with considerable growth in production investments, a number of enterprises of the food, meat and dairy industry and also the fruit and vegetable and fishing industries are not fulfilling their tasks for the production of goods and they are displaying very little initiative in the important work of storing, processing and delivering the food products to the consumers. For example, the republic's Minplodoovoshchkhov is devoting more attention to the production of canned goods and compotes than it is to the creation of an efficient "field-to-store" production line, which could promote the rapid and high quality satisfaction of the population's requirements for potatoes, vegetables and fruit.

The Minplodoovoshchkhov system created 3 years ago is still considered to be a young development and yet it is operating on the basis of old methods and difficulty is being experienced in attempting to overcome the inertia of previous managerial methods. It is high time for the leaders of this branch and also of other branches included in the APK to reorganize this type of economic thought. The tasks confronting our agricultural industry today require the use of new approaches, decisive improvements in the work being performed by all elements of the APK, an increase in the level of all economic work and the introduction of cost accounting procedures, the collective contract and the use of other economic levers into operations on an extensive scale.

And this applies not only to the processing or service branches. Many reserves are to be found in the chief element -- agriculture -- and particularly with regard to increasing the production of grain.

Our chief and most urgent task is that of producing more Kazakhstan grain. Indeed the grain economy is a factor which stabilizes all agricultural production, it defines to a decisive degree the possibility of satisfying the increasing requirements of the population for food products and it serves as a most important prerequisite for achieving steady growth in animal husbandry operations. Thus, based upon improved farming efficiency and raised yields, the average annual gross yield of grain must be raised in volume to not less than 28-29 million tons during the current five-year plan and to 30.5-31.5 million tons during the 12th Five-Year Plan.

This is a difficult but fully realistic task. In order to carry it out successfully, it will be necessary to make more complete use of the potential available in each oblast, each rayon and at each sovkhos and kolkhos. Despite the successes achieved in grain production, there are still many farms throughout the republic which are obtaining yields that are lower than those planned and which are not fulfilling their tasks for selling grain to the state. And the reason for this -- the measures required for truly improving the culture of farming have not been undertaken in a number of areas.

There have been instances of the sovkhos and kolkhos leaders and specialists tolerating violations of the agricultural practices employed in the cultivation of agricultural crops, failing to undertake the measures required for mastering crop rotation plans, carrying out seed production work at a level lower than that required and using fertilizer in an inefficient manner.

Thus, at sovkhoses and kolkhoses in Alma-Ata and Dzhambul oblasts, the crop rotation plans were mastered only on 30 percent of the arable land area made available, in Taldy-Kurgan Oblast -- on 47, Semipalatinsk Oblast -- on 58 and in Dzhezkazgan and Karaganda oblasts -- on 63 percent of the arable land area.

The extensive use of a progressive soil-protective technology for the cultivation of grain crops over vast areas has made it possible to eliminate the wind erosion of soils and it has promoted improvements in their fertility. As a result, a harvest of 23.2 million tons of grain with a yield of 9.2 quintals per hectare was obtained in 1983 despite the drought conditions which prevailed during that year; 908 million poods of grain were turned over to the state. In all, during 3 years of the five-year plan and despite extremely unfavorable weather conditions, the sovkhoses and kolkhoses of Kazakhstan produced 66.5 million tons of grain, with 2.5 billion poods of this amount being delivered to the granaries of the homeland. This represented an annual average of 853 million poods. The grain growers of Aktyubinsk Oblast, dozens of rayons and more than 200 sovkhoses and kolkhoses are working in behalf of 1986.

The Chirchik farmers have fulfilled their four year task for the procurement of grain. The grain procurement plans for three years have been fulfilled in Kustanay, Ural, Kzyl-Orda and Dzhezkazgan oblasts. Growth has been ensured in the production and procurements of rice, corn, millet, grapes, melon crops, fruit and berries. Compared to the 10th Five-Year Plan, the average annual purchases of meat, milk, eggs and wool have increased.

In animal husbandry, the semi-annual tasks of this current year for deliveries of milk, eggs, karakul pelts and other types of products have been fulfilled. Increases have taken place in the milk yields and in the delivery weights for hogs. More calves, young pigs and colts were obtained than was the case last year. Increases have taken place in the number of cattle, hogs, horses and poultry. Beyond any doubt, positive improvements have been realized in many oblasts, rayons, sovkhoses and kolkhoses.

But today, with only a short amount of time remaining before the end of the five-year plan, all available experience must be taken into account and all

potential mobilized in the interest of supplying the homeland with as much bread grain as possible, especially strong and durum varieties of wheat and also buckwheat and millet. We have many reserves in beet production and rice growing, for raising the return from the farms and for increasing the yields of potatoes, vegetables, fruit and other agricultural products.

Experience indicates that the operational results of the sovkhozes and kolkhozes are dependent upon the level of the culture of farming and upon observance of the progressive technologies recommended by science for the cultivation and harvesting of crops.

This is borne out by the following examples: last year the Sovkhoz imeni XXIII Parts'yazda in Presnovskiy Rayon in North Kazakhstan Oblast obtained 9.7 quintals of wheat grain per hectare from an area of 5,700 hectares, while the Ostrovskiy Sovkhoz, which was located nearby in the same rayon and which operates under the same soil-climatic conditions, albeit with a higher culture of farming, obtained a yield of 11.7 quintals per hectare from 8,600 hectares.

At the Yermентаuskiy Sovkhoz in Yermентаuskiy Rayon in Tselinograd Oblast, the wheat yield during the last harvest was 6.6 quintals per hectare and at the Yerkenshilikskiy Sovkhoz in this same rayon -- 11.9 quintals. This is clear proof of the existence of unused reserves in farming.

A solution for the grain problem is greatly dependent upon the rice growers and corn growers in the republic. This year the workers in Kzyl-Orda, Alma-Ata, Chimkent and Taldy-Kurgan oblasts must supply the state's granaries with not less than 32 million poods of rice. The corn plantations are promising a fine harvest and this is also creating the prerequisites for over-fulfillment of the procurement plans for corn grain by farms in Taldy-Kurgan, Chimkent, Alma-Ata and other oblasts.

In all, the farms in the southern region of the republic must increase their production of corn grain by a factor of 1.8 prior to the end of the 12th Five-Year Plan.

We must also devote more attention to another important crop -- sugar beets. This crop promises a fine harvest this year in Dzhambul, Taldy-Kurgan and Alma-Ata oblasts. It will make it possible not only to fulfill the beet procurement plans for this year, but also to eliminate the obligation or debt that developed during previous years. Nevertheless, there are many shortcomings in the beet growing operations. Here efforts must be concentrated on mastering the crop rotation plans, improving the organization of seed production operations and observing the technologies for cultivating the crops and making efficient use of all fertilizers.

Each year the republic falls short in its plan for the production and procurements of oil-bearing crops. At the same time, the cultivation of sunflowers is proceeding very poorly in Semipalatinsk and Pavlodar oblasts and on a number of farms in East Kazakhstan Oblast. In order to increase the vegetable oil resources, the soybean sowing areas on irrigated lands must be expanded and rape cultivation must be developed in Kokchetav, Kustanay,

Tselinograd, North Kazakhstan, Turgay, Karaganda, Semipalatinsk, Aktyubinsk and other oblasts. Industrial technologies for the cultivation of oil-bearing crops must be introduced into operations on an extensive scale.

We have many problem areas in the fishing industry. Although the Ministry of the Fish Industry for the Kazakh SSR produced 65.5 million rubles worth of output last year, against a plan calling for 59.8 million rubles worth, the requirements of the consumers for fresh fish and fish products are still not being adequately satisfied. For the decade, the republic's Food Program called for an increase by a factor of 1.3 in the fish catch and on fish culture farms -- an increase by a factor of 3.3. Everything must be done to ensure that the delicatessen products of seas, rivers, lakes and ponds serve as an important aid in increasing the food resources.

This year the field and farm workers have been assigned the task of producing 9,505,000 rubles worth of products -- an increase of 7 percent. Labor productivity in the public sector of production must be increased by 12.3 percent.

The capital investments for agricultural development, in terms of an entire complex of operations, will amount to more than 3 billion rubles.

But it would be wrong to rely only upon state generosity. The resources made available must be utilized in an intelligent manner. And this means: making efficient use of fixed productive capital, accelerating scientific-technical progress in the rural economy and consistently implementing a program for production intensification through the further development of all-round mechanization, the use of chemical processes and extensive land reclamation operations.

At the present time, the power-worker ratio in agriculture throughout the republic has reached 44 horsepower per worker. This is higher than the average for the country.

The complete mechanization of operations concerned with the cultivation, harvesting and post-harvest processing of grain crops, the application of fertilizer and feed procurements has been achieved mainly on the basis of technical equipping. The complete mechanization of cotton and sugar beet cultivation and harvesting operations is nearing completion.

In animal husbandry, the level of all-round mechanization on cattle farms is 66 percent, hog farms -- 68 percent and on poultry farms -- 91 percent.

The electrification of agricultural production is developing at high rates. All of the sovkhoses and kolkhozes have been connected up to state power systems. They are presently consuming more than 7.5 billion kilowatt-hours annually.

One urgent problem concerned with the development of agriculture and the entire agroindustrial complex -- accelerated improvements in animal husbandry and an increase in its efficiency. This is conditioned by a number of circumstances.

First of all, by considerable growth in monetary income for the population and by improvements in the level of well-being of the workers, as a result of which

there will be an increase in the demand for high quality food products and particularly for meat, milk and butter.

Secondly, the municipal population has increased substantially. Thus, from year to year we are experiencing increases in the purchases of food products in the state trade network and a considerable expansion in the public catering system. But the existing rates of growth for animal husbandry are not fully in keeping with the population's ability to pay for the products of this branch.

All of this has raised the need for converting animal husbandry into a strong and intensive element of the agroindustrial complex.

The workers on farms throughout the republic are confronted by difficult and important tasks. During the current five-year plan, the average annual production of meat (in dressed weight) must amount to 1.2-1.3 million tons and during the 12th Five-Year Plan -- to not less than 1.4 million tons, milk -- 4.9-5 million tons and 5.3-5.4 million tons respectively and eggs -- 3.6-4 billion.

A most important condition for increasing the production and procurements of animal husbandry products is that of increasing the numbers of cattle and poultry and raising their productivity. The basis for growth in the number of animals -- improvements in the work concerned with reproduction of the herd and safeguarding the livestock.

Meanwhile, we are still experiencing serious shortcomings and derelictions in this area. The proportion of females for all types of agricultural animals is still considerably lower than the figure required. In accordance with the accepted zootechnical norms, the proportion of cows in a herd must be no lower than 40 percent in dairy cattle husbandry and 35 percent in beef cattle husbandry. Today the number of cows at sovkhoses and kolkhoses amounts to only 29 percent of the overall number of cattle available. And this indicator is even lower in Kzyl-Orda, Chimkent, Dzhambul, Taldy-Kurgan, Aktyubinsk, Kokchetav, Pavlodar, Turgay, Tselinograd, Gur'yev and Ural oblasts.

Nor is the situation any better in sheep raising. The proportion of brood stock is especially low in the sheep and goat flocks on farms in North Kazakhstan, Kokchetav, Justanay, Tselinograd, Pavlodar, East Kazakhstan, Alma-Ata, Turgay and a number of other oblasts.

In the Food Program, special emphasis is placed upon the fact that the principal direction to be followed for increasing the meat resources is that of accelerated growth in the production of beef. As is well known, our republic is a leading base for beef cattle husbandry in the republic. Almost one half of all animals to be used for meat purposes are presently concentrated in Kazakhstan.

The breeding of cattle in our republic is being carried out by 2,384 sovkhoses and kolkhoses. An average of 2,600 head of cattle is being maintained per farm. In order to achieve the planned goals, the average delivery weight for the cattle must be raised to 450-500 kilograms. The experience of leading sovkhoses and kolkhoses reveals that by combining the grazing of cattle on pastures with

the fattening of young stock it is possible to produce heavy-weight and quality-standardized animals. The livestock breeders in Kustanay Oblast are selling cattle to the state at a weight of 422 kilograms, 86 percent of which are in a high state of nourishment.

At the same time, large numbers of cattle from many oblasts are being delivered to the meat combines at low weights and in a low state of nutrition.

The established tasks cannot be carried out successfully if the breeding work is not properly organized. For example, a highly productive herd of beef cattle of the Kazakh white-head strain, created at the Chapayevskiy State Breeding Plant in Ural Oblast, produces a considerable amount of income for the farm. Fine experience has been accumulated in the northern oblasts in crossing these animals with the Charolais, Hereford and other "early maturing" strains. Although it does not produce an immediate return, breeding operations nevertheless produce a worthy return.

One of the chief aims of the Food Program is that of increasing the production of milk and dairy products. By the end of the five-year plan, the volume of milk procurements in the republic must be raised to 2,750,000 tons. This will require first of all an increase in the productivity of the dairy herd. On the whole -- by 250-300 kilograms, and in the zone of dairy cattle husbandry and around industrial centers, the annual yield per cow must be not less than 4,000 kilograms of milk.

The experience of leading workers has shown that a solution for the "milk problem" is greatly dependent upon the expertise of the livestock breeders and their attitude towards their work. For example, the milkmaids Hero of Socialist Labor A.S. Plakhina and laureate of the State Prize of the Kazakh SSR G.I. Furd' are obtaining stable yields from their cows of 5,000-7,000 kilograms of milk. Last year, 248 masters of machine milking obtained more than 4,000 kilograms each and 1,708 of them -- more than 3,000 kilograms of valuable product.

Obviously, the individual expertise of milkmaids and operators is closely associated with overall improvements in the culture of branch management. For example, at the Kolkhoz imeni XXII Parts'yezda in Dzhambul Oblast selection-breeding work is well organized, the flow-line-departmental system for milk production and reproduction of the herd has been introduced into operations and progressive technologies for the processing of feed have been mastered. Here there are rich traditions, a system of tutorship and also an efficient school for leading experience directed by the distinguished milkmaid and Hero of Socialist Labor Ye.I. Svinkovska. Such well thought out and purposeful work is certainly producing the desired results: a 4,000 kilogram milk yield per forage cow has become the norm.

A considerable amount of experience has been accumulated by the livestock breeders at the Kamenskiy Breeding Plant in Alma-Ata Oblast, the Chimkent Agricultural Experimental Station, the Krasnopartizanskiy Sovkhoz in Kustanay Oblast and at a large number of other farms. Highly productive dairy herds have been created in Talgarskiy and Kaskelenskiy rayons in Alma-Ata Oblast, Dzhambeytinskiy Rayon in Ural Oblast and in Panfilovskiy and Kirovskiy rayons in Taldy-Kurgan oblast.

However, by no means is full use being made of the available reserves. In 1983, the milk yield per cow on the farms of 956 establishments amounted to less than 2,000 kilograms. The quality of the milk continues to remain low, with one third being sub-grade in quality.

The milk yields on some farms in Aktyubinsk, Alma-Ata, Dzhambul, Dzhezkazgan, Karaganda, Kokchetav, Kustanay, Pavlodar, North Kazakhstan, Semipalatinsk, Turgay, Tselinograd and Chimgent oblasts are decreasing with each passing year. As a rule, the low quality products are being received from farms which operate under unsanitary conditions. The veterinary service has still not achieved a high degree of effectiveness in the carrying out of sanitary measures. The price for such mismanagement is exceptionally high: last year alone, more than 273,000 cows were culled out of the herd. These animals had served only 2-3 years instead of 8-10 years.

Sheep raising is an object of special concern for the Kazakhstan workers -- one of the largest branches of the republic's agroindustrial complex. Its products -- mutton, wool, karakul fur and sheepskins -- serve as an important source for augmenting the country's food and raw material resources. As is known, the plans call for the number of sheep to be increased to 50 million head by 1990. This will represent a large contribution towards carrying out the tasks called for in the USSR Food Program.

One out of every two of our farms engages in sheep raising operations. There are 696 specialized sheep raising sovkhozes and they are producing more than 80 percent of the output by this branch. Many farms are achieving high indicators from year to year. For example, in 1983 the Sulukol'skiy Breeding Plant in Kustanay Oblast obtained 115 lambs from 100 fine-fleece ewes and a wool yield of more than 5 kilograms of wool from each of 41,000 sheep.

It would seem to be a natural task -- that of obtaining a lamb from each ewe and raising it. However, we cannot achieve this goal! Even last year less than 90 lambs and kids were obtained from every 100 females in 10 oblasts. And some oblasts did not achieve the growth called for in the numbers of sheep and goats.

And it should be stated directly that the status of sheep raising in the republic continues to remain extremely unsatisfactory; we are carrying out in a very poor manner the decree of the CPSU Central Committee and the USSR Council of Ministers entitled "Measures for Developing Sheep Raising in the Kazakh SSR." At the beginning of this year, there were only 32.3 million sheep and goats at kolkhozes, sovkhozes and other goskhozes throughout the republic. And in order to fulfill the task assigned to Kazakhstan with regard to the development of sheep raising, it will be necessary, prior to the end of the 12th Five-Year Plan and at all categories of farms, to achieve an increase in the number of sheep and goats of almost 2 million head annually.

As yet, only a limited amount of attention is being given to such intensive branches of animal husbandry as hog raising, horse breeding, camel rearing and rabbit husbandry.

The means and methods for further increasing the output of animal husbandry are well known. But radical changes can be realized only if a strong feed base is

available. However, feed production at the present time continues to remain a serious bottleneck.

The task has been assigned of increasing the gross yield of all types of feed in the republic by a factor of 1.5-1.6 during the decade. For 1985 the plans call for the sovkhozes and kolkhozes to procure coarse and succulent feed in a volume of not less than 15 million tons of feed units.

This requires the implementation in all areas of practical measures aimed at further intensifying field feed production, raising the productivity of natural feed lands, improving the quality of the feed and reducing feed losses and introducing into operations on an extensive scale progressive technologies for the procurement and storage of feed and also for ensuring its efficient utilization.

Unfortunately, the production and use of feed in a number of oblasts are still not in keeping with the established requirements. At some sovkhozes and kolkhozes in Guryev, Dzhambul, Alma-Ata, Taldy-Kurgan and Ural oblasts, the consumption of feed in feed units per standard head of cattle even decreased during the 10th Five-Year Plan compared to the 9th Five-Year Plan. Some leaders, instead of displaying concern for strengthening the feed base, rely upon feed allocations from the state resources. The time has come to do away with such parasitical tendencies.

Considerable importance is attached to the problem of eliminating the shortage in feed protein. This is necessary if a substantial increase is to be achieved in the productivity of the animals or a reduction realized in feed consumption per unit of product obtained. This problem can be solved by expanding considerably the sowings of alfalfa, soybeans, rape and other high protein crops.

In addition, as proven by practical experience, the greatest success is being achieved on those farms where the livestock rations contain an optimum ratio of concentrated, coarse and succulent feed.

Under the conditions found in Kazakhstan, generous yields are not easily obtained from the natural feed lands. Many pastures are not watered and they are not used adequately or tended properly. Thus persistent work must be carried out aimed at raising the fertility of these lands. Every attempt must be made to satisfy fully the requirements for diverse types of high quality feed of both public animal husbandry and those for livestock being maintained on private plots by citizens.

The subsidiary farms of enterprises, organizations and institutes and also the private plots of rural and municipal workers must make their own contribution towards increasing the production of agricultural products. If the work is organized correctly, the population should be able to purchase considerably quantities of meat and milk. However, this work is still not being carried out to the extent required.

Further improvements in the agrarian economy are impossible in the absence of scientific achievements and leading experience being introduced into operational practice on an accelerated basis.

The agricultural scientists are accomplishing a great deal. But they are clearly lagging behind present and future tasks concerned with the breeding of highly productive varieties and hybrids of agricultural crops, especially spring wheats that are resistant to unfavorable environmental factors, have high quality grain and are immune to pests and diseases. As yet, science has made only a scanty contribution towards improving the pedigree and productive qualities of livestock and poultry or improving existing and creating new and highly productive strains, pedigree groups, lines, hybrids and crosses deemed suitable for industrial technologies.

The soil-protective system of farming proved its worth long ago and still this does not mean that field crop husbandry does not require the development and introduction of progressive technologies. The same holds true for animal husbandry. Kazakhstan science must also expand its studies concerned with the efficient use of water resources and protecting them against contamination.

The program for bringing about fundamental improvements in the food resources was developed for two five-year plans. Although much has already been accomplished, a great amount of work still remains to be carried out. We have entered the final stage of the 11th Five-Year Plan. And our most immediate task -- to ensure the fulfillment and over-fulfillment of the tasks for the current year and for the five-year plan as a whole by all branches of the agroindustrial complex.

At the present time, preparations for the 27th CPSU Congress are underway within the party and throughout the country. A plan for the Basic Directions for the Economic and Social Development for the New Five-Year Plan and for the Foreseeable Future is in preparation. A most important socio-political task has been and continues to be concern for human labor and for satisfying the increasing requirements of man. The contribution by Kazakhstan and its agroindustrial complex towards carrying out this task -- further improvements in the productivity of farming and animal husbandry, the fulfillment and over-fulfillment of the state procurement plans for grain, meat, milk and other products and the creation of a reliable foundation for achieving prosperity in the republic and for strengthening the might and wealth of our country.

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ESTONIAN RURAL SOCIAL DEVELOPMENT, FOOD PROGRAM DISCUSSED

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[Article by Ye. Madis, candidate of historical sciences, docent of TPI [Tallinn Polytechnic Institute]: "The Food Program and the Social Transformation of the Village" under the rubric "Political Discussions"/

[Text] How are we to understand the concept of "the social transformation of the village"? What changes have occurred in our village during the last three five-year plans? What new aspects does the Food Program bring to the problem of the social transformation of the village? What directions are being followed in the continued transformation of the social image of the village during the current decade? Today's discussion answers these questions.

Everyone is familiar with the folk saying that states that the dearest thing in the world is sleep, the fastest--a thought, and the richest--land. How simple this is, and how true! From the very first, the Soviet power has struggled for peace on earth, for peaceful conditions under which its people could work and rest. All of the party's and people's intentions are directed at the bright future, a future that is being created already today. All of the activities of the Soviet people based on scientifically-grounded party policies are directed at enriching our country in terms of food, economics and culture and of talented and industrious people. But neither peace, nor the overall development of man, nor the multiplication of the country's riches occur on their own.

The USSR Food Program to 1990 is the most important integral factor of the party's economic strategy for the current decade. It was worked out in accordance with the decisions of the 26th CPSU Congress and embodied in the resolutions of the May 1982 Plenum of the CPSU Central Committee on "The USSR Food Program to 1990," and measures to realize it. The goal of the indicated measures is to dependably supply the country's population with food products in the shortest time possible. As noted at the plenum, this is not only a priority economic but also an urgent socio-political task. To deal with it successfully it is essential to significantly increase agricultural production output, to bring agriculture closer together with branches involved in the procurement, storage and processing of its products and with trade.

The Food Program has a system and a complex nature, which are manifest in the close ties and balanced goals which have a material-technical, economic and scientific foundation as well as in the unity of production and social goals. This unity permeates the development of all branches of the agro-industrial complex, but is of especially great significance in agriculture, the main source of food resources.

The Food Program is implemented by people and for people. In the country and in the republic there has been a growth in the city population and a decrease in the number of village residents. In the Estonian SSR according to the 1959 census, the village population comprised 43.3 percent of the total, in 1979--30.3 percent, in early 1982--29.2 percent and in 1983--28.9 percent. In order to improve the demographic situation in the village it is essential to strengthen processes involving the social transformation of the village. At the May plenum of the CPSU Central Committee it was noted that measures on the social transformation of the village are an integral part of the Food Program.

In the concept of "social transformation of the village," the Plenum of the CPSU Central Committee established the sense and meaning of the basic, thorough transformation of the entire village structure of life during the current decade that will lead to a substantial drawing nearer of the village to the urban structure of life. We are speaking about the continued increase in the level of well-being, culture, medicine and everyday services to village residents; about an overall increase in the prestige of agricultural work, about the active introduction of a scientific organization of labor and relaxation regimens for kolkhoz farmers and sovkhoz employees; and about increasing the level of wages on the basis of a growth in labor productivity.

The satisfaction of the vital needs of the Soviet people was and remains the most important program requirement of our party. This is clearly attested to by those positive changes which have occurred in the village during the last three five-year plans (1961-1980). The reference point is justifiably the March 1965 Plenum of the CPSU Central Committee, when the party took the direction of increasing capital investments into agriculture, of strengthening the material-technical base and improving planning and economic stimulation of agricultural production, of strengthening kolkhozes and sovkhozes and increasing their independence, and of improving the lives of the village population. The aims of the March Plenum of the CPSU Central Committee, developed by a number of subsequent plenums and by the 24th-26th CPSU congresses, comprised the basis for the modern scientifically-based agrarian party policies.

What are the results of this policy? They are well-known, so only the most important will be discussed here. After the March Plenum of the CPSU Central Committee about 400 billion rubles were directed into agriculture--several times more than during all preceding years (in the Estonian SSR--almost four times more). This enabled us to qualitatively renew the material-technical base of agriculture. Power available per productive worker has more than tripled (in the republic it has increased by a factor of 4.5). The fund of irrigated and drained lands increased by a factor of 1.7. Deliveries of mineral fertilizer tripled. Labor productivity in the country's kolkhozes and

sovkhozes almost doubled. In the republic, agricultural production output increased although workers in agriculture decreased by one-fourth. This enabled us to increase per capita consumption of products.

The intensification of agriculture is the basis for a transformation of work, everyday life and culture of the people. The well-being of the worker and his high level of skill facilitate his active and creative participation in production. This relationship between the economic and social spheres has been strengthened under conditions of developed socialism. In the village there is an active transformation of the nature of agricultural labor in that there is more variety in the same way that there is variety in industrial labor. New professions have appeared. There has been a significant decrease in unskilled heavy physical labor and the level of general and technical education of workers has increased. The material well-being of kolkhoz and sovkhoz workers has increased. As compared to 1965, average monthly wages of sovkhoz workers and employees doubled in 1980; wages for kolkhoz farmers increased by a factor of 2.3. The building of housing and cultural-social facilities has been implemented on a large scale in the village, and the service sphere is being strengthened.

In the last 15 years agricultural production has surpassed population growth--the average annual volume of gross per capita agricultural production increased by 28 percent, whereas the population grew by 14.8 percent. During this time, per capita consumption of the following increased in the country: meat and meat products--by 41 percent; milk and milk products--by 25 percent; eggs--by almost double; vegetables--by 35 percent; vegetable oil--by 24 percent; and sugar--by 30 percent.

Nevertheless, the feed problem is still on the agenda. Whereas in total caloric intake the food rations of the Soviet person correspond to physiological norms, the structure of the rations does need improvement. The demand for meat and dairy products is still not sufficiently satisfied; there is a shortage of vegetables and fruits. The Food Program is called upon to deal with these problems.

What innovations does the Food Program contribute to the problem of the social transformation of the village? A comparison of documents from the March 1965 and May 1982 plenums of the CPSU Central Committee will enable us to determine this. Continuity and an innovative approach are characteristic of the activities of our party with regard to implementing agrarian policy. The novelty of the party's approach to solving the problems of village development lies first and foremost in its scale, its complexity and its depth in encompassing vital phenomena. Today there is a bolder consideration of the social aspects of industrialization of agriculture thanks to a purposeful, programmed approach to the food problem. The party's great attention to the social needs of the village was dictated by concern for the well-being of village workers and by a desire to create the conditions that will facilitate a rapid equalization of possibilities for city and village residents with regard to the use of material and cultural goods.

The 10 year program (1981-1990) for transforming the social aspect of the village includes specific goals for many directions, namely: raising the level

of wages and improving the organization of labor; a forestalling pace for building comfortable housing with home-management facilities, children's pre-school facilities and cultural facilities; improving medical services, sanatorium-spa rest and treatment; strengthening the educational base of village schools, expanding the network of village vocational schools and preparing teacher cadres for the village; developing a dependable transport network and building roads; adhering to an efficient regimen of work and rest for kolkhoz farmers and sovkhoz workers; strengthening the base of agricultural building and expanding the participation of building organizations, cities and industrial centers in building objects for the village non-production infrastructure; and creating the conditions for achieving year-round work for village workers. All of this will help to solve the strategic problem of ironing out the considerable differences between the city and the village.

In order to achieve its goals, the Food Program calls for directing 160 billion rubles for the social needs of the village, or almost double the amount spent during the 1970's.

Two years have passed since the May Plenum of the CPSU Central Committee. The documents of the December 1983, the extraordinary February and the April 1984 plenums of the CPSU Central Committee provide a thorough analysis of the course of implementation of the Food Program. Unsolved problems are brought up and ways are indicated to further increase the efforts of workers of the agro-industrial complex to fulfill the program, to increase the productivity of fields and animals and to more effectively utilize means that are directed at the development of agriculture. The program for the social reconstruction of the village is being consistently implemented on the basis of the continued development of the economy and of the achievement of high technical-economic indicators.

The resolution of the February 1984 Plenum of the CPSU Central Committee applies fully to the problem examined in this article: "It is no less important now to achieve closer and closer ties in economic, social and spiritual progress within Soviet society. It is impossible to raise the economy to a qualitatively new level without creating the social and economic prerequisites necessary for this. In the same way, it is impossible to solve urgent problems related to the development of socialist consciousness without support from a firm foundation of economic and social policies."

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PRICE FORMING, PROFIT SYSTEM IN GRAIN ENTERPRISES ANALYZED

Moscow ZAKUPKI SEL'SKOKHOZYAYSTVENNYKH PRODUKTOV in Russian No 10, Oct 84
pp 36-38

[Article by V. Narkhov, candidate of economic sciences: "The Economic Mechanism of Price Formation and Profits"]

[Text] The existing system of procurement, uniform accounting, wholesale, accounting-wholesale factory and retail prices for grain, flour, groats, mixed feed and comprehensive load turnover as well as the system for planning and using profits in grain-reception and grain-processing enterprises play an important role in implementing the communist party's agrarian policies, which are directed at the overall increase in production and state procurement of agricultural products and at the successful implementation of the Food Program..

The basis for the entire system of state retail prices for food products, as well as consumer goods made from agricultural raw materials, are procurement prices. They are established with a consideration of the average level of zonal production expenses and provide kolkhozes and sovkhoses with reimbursements for expenditures to produce grain and other products as well as with a part of clear income (profits) created by the labor of agricultural workers. Profits from the sale of products according to procurement price secure the development of all branches of agricultural production in kolkhozes and sovkhoses.

In connection with the fact that soil-climatic conditions are different in different zones of the country, procurement prices for grain and other agricultural products are differentiated with a consideration of the special natural-economic characteristics of every zone. Thus, for example, for 1 ton of soft wheat in base condition the procurement price for enterprises located in the first zone of Krasnodar Kray has been set at 84 rubles, whereas in the first zone of Omsk Oblast, where a lower yield than in Krasnoyarsk Kray is achieved for the same expenditures, the procurement price is 189 rubles.

With the goal of raising the level of profitability and of further strengthening the economies of kolkhozes and sovkhoses, procurement prices for sugar beets, potatoes, meat, milk and other agricultural products were increased in 1983.

With the help of differentiated procurement prices, enterprises located in different natural-climatic zones are placed in approximately equal conditions. This is achieved by the fact that in those zones where kolkhozes and sovkhoses have more fertile soil and better climatic conditions, larger yields as well as clear income in the form of profits are achieved when expenditures are equal. The second half of clear income, created by workers of these enterprises, becomes part of state income in the form of differential rents and is used for the development of the national economy. Since 1983 low-profit and unprofitable enterprises have received supplements to procurement prices for agricultural products sold to the state.

Uniform accounting prices throughout the USSR are established on the basis of average procurement prices with the addition to them of expenses incurred by the state in delivering grain and oil-bearing seed from kolkhozes and sovkhoses to procurement enterprises.

For the sake of clearness, the structure of existing uniform accounting prices (in rubles) per ton of grain (soft wheat) is presented in the following form:

Uniform accounting price--111		
Average procurement price--105		
		+
		Expenditures for delivery of 1 ton of grain from kolkhozes and sovkhoses--6
Production cost of 1 ton of grain in kolkhozes and sovkhoses--48	Kolkhoz and sovkhos profits per tons of grain--57	

Grain, groats, legumes and oil-bearing crops (with the exception of peanuts, safflower and others), regardless of quality, are accounted for in balances of grain-reception enterprises as well as credited to USSR Gosbank institutions according to uniform accounting prices.

In unloading grain directly to milling, groats and mixed feed plants for processing and to grain-reception enterprises as intra-system shipments, as well as to purchasers located in other cities using transport, grain-reception enterprises-suppliers settle accounts with purchasers from the system of the USSR Procurement Ministry according to a single system of uniform accounting prices.

The special feature of these intra-system uniform accounting prices consists of the fact that they do not contain, as we can see from their structure as presented above, a source for resources to reimburse turnover expenses related to the reception, storage and unloading of grain received from kolkhozes and sovkhoses, for paying for expenditures related to shipments via railroads and waterways, as well as for profits created through the labor of workers of grain-reception enterprises in the process of executing aforementioned production operations. For all grain-reception enterprises the source by means of which to cover their expenditures and to form profits is the sales difference added to the uniform accounting price per ton of grain (soft wheat).

As a result, a uniform wholesale price is created without taxes from turnover, the structure of which is presented below:

Uniform wholesale price without taxes from turnover--130 rubles

Uniform accounting prices--111 rubles + Sales difference--19 rubles

The zone wholesale price with turnover taxes--151.2 rubles (130 + 21.2) is formed by adding the tax rate from turnover for the first zone--21.2 rubles--to the uniform wholesale price without turnover taxes. With the addition to it of a trade price increase totalling 48.8 rubles the retail trade price per ton of grain (soft wheat) is created--200 rubles (151.2 + 48.8).

Calculations for grain unloaded by means of transit carried out by grain-reception enterprises and sales bases located in the regions where purchasers operate. Payments to enterprises and sales bases are made by purchasers according to zone wholesale prices established for them with turnover taxes for 1 ton of grain in base condition or by individual recipients--according to the uniform wholesale price without turnover taxes. A certain part of the profits obtained for the grain sold in the quantity of a uniform accounting price (in our example--111 rubles per ton) is used to cancel Gosbank debts for loans obtained according to available grain; another part--taxes from turnover calculated at the rate of 21.2 rubles per ton--becomes part of the state budget. A third portion of profits (representing the total sales difference, determined to be 19 rubles per ton of grain sold) is the gross income of the branch, obtained as a result of grain sales.

In addition to uniform wholesale prices without turnover taxes and zone wholesale prices with turnover taxes for grain, wholesale prices of an enterprise for flour, groats and mixed feeds exist within the system of the USSR Ministry of Procurement, with the following structure:

Wholesale prices of an enterprise for first-class wheat flour--184 rubles per ton

Cost of grain according to uniform wholesale price without turnover taxes, necessary for the output of 1 ton of first-class flour--169 rubles	+	Production expenses and profits of flour plant per ton of flour--15 rubles
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The enterprise's wholesale prices for products are used to credit Gosbank and to carry out accounts with purchasers for flour, groats and mixed feed unloaded in terms of intra-system redistribution. Using profits from unloaded products, enterprises of the flour-milling and groats industry-suppliers reimburse the cost of the grain processed by them according to a uniform wholesale price without turnover taxes and production expenses and obtain a profit.

As we can see from the structure of an enterprise's wholesale price for flour as well as for groats and mixed feed, it does not have, similarly to the uniform accounting price for grain, a source for resources that are essential for reimbursing turnover expenses in grain-reception enterprises and sales bases for the reception, storage and unloading of products, expenses according to railroad and water freight rates for transport and planned profits. Such a source is once again the sales difference, which is established at 10 rubles per ton of flour. By adding the sales difference to the wholesale price of the enterprise the latter is transformed into a wholesale price without turnover taxes for flour.

The structure of this price for flour is represented in the following form:

The wholesale price without turnover taxes for first-quality wheat flour--194 rubles

Wholesale prices of enterprises for 1 ton of first-class wheat flour-- 184 rubles	+	Sales difference--10 rubles
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Grain-reception enterprises and sales bases for grain products sell products. They reimburse the cost of production according to the wholesale prices of the enterprise by means of total resources obtained by them in accounts with purchasers for ready products according to wholesale prices without turnover taxes. Expenses discussed above are reimbursed by means of total sales differences of grain-reception enterprises and sales bases; profits are formed in the same way.

In connection with the transition of mixed-feed plants to producing mixed feed according to recipes calculated with the aid of electronic computers, the economic mechanism of price formation for mixed feed has some specific characteristics. In contrast to uniform wholesale prices in enterprises throughout the country for flour and groats, wholesale prices of enterprises for mixed feed fluctuate according to the cost and assortment of feed used to make the mix. They are established separately for each recipe based on the cost of the grain and other ingredients included in the recipe according to wholesale prices with the addition of production expenses and profits according to established norms. Below we have the structure of wholesale prices of the enterprise for mixed feed for poultry:

Wholesale price of enterprise per ton of mixed feed prepared according to a recipe calculated with the help of an electronic computer--153 rubles

Cost of raw materials actually used in the recipe to produce 1 ton of mixed feed according to existing wholesale prices-- 135 rubles	+	Production expenses to process raw materials within the limits of established norms-- 10 rubles	+	Profits of mixed-feed plant within norm limits--8 rubles
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By adding to the enterprise's wholesale price the sales difference, which since 1 January 1983 has been set at 2 rubles per ton of mixed feed, wholesale prices without turnover taxes are determined and used for selling mixed feed to kolkhozes, sovkhoses and other enterprises. Profits from the sale of mixed feed according to these prices provide mixed-feed enterprises to reimburse the cost of raw materials used to make the feed, as well as production expenses and the achievement of profits within normal limits. The structure of the wholesale price without turnover tax per ton of mixed feed is presented below:

Wholesale price without turnover tax per ton of mixed feed--155 rubles	
Wholesale price of enterprise per ton of mixed feed produced from recipes calculated using the electronic computer--153 rubles	+ Sales difference--2 rubles

In addition to procurement, uniform accounting and wholesale prices for grain, flour, groats and mixed feed, accounting-wholesale factory prices per ton of complex load turnover are in effect within the system of the procurement ministry.

In the process of labor performed in grain-reception enterprises for the reception, post-harvest processing, storage and unloading of grain to flour-milling and mixed-feed enterprises for processing, the cost of grain produced by means of the labor of kolkhoz farmers and sovkhos workers is preserved. At the same time a new cost is created and added to it. A portion of it, created by the labor of workers from grain-reception enterprises steps in in the form of a supplementary product, and during the sale of flour, groats and mixed feed to purchasers according to existing wholesale prices takes the form of profits from procurement operations. From this it follows that in the sale of grain products, which sales bases are involved in, implementing primarily only accounts on transit unloading, there is no development of profit, as some economists try to prove, but rather, the profit that was created previously by workers of grain-reception enterprises is only realized.

Taking into account this special feature of economic activities, the profits from a completed volume of complex freight turnover according to a stable accounting-wholesale factory price have become the source for forming income according to the existing order for planning and keeping accounts.

Complex freight turnover is the standard-natural indicator which summarizes the basic production operations carried out by grain-reception enterprises with the help of the following coefficients: reception of grain and ready products, including forage volume (in tons)--0.5; storage (in ton-months)--0.2; unloading (in tons)--0.5; and transit-accounting operations (in tons)--0.05. Considering that the reception and distribution of ears of corn, rice, castor beans and grass seed gives rise to greater material, labor and financial expenditures than in the case of reception and unloading, an increased coefficient--0.75--has been established for the transition of the reception

and distribution of these crops in complex freight turnover, and for the transition of the operation of "storage of quality seed of grain and oil-bearing crops"--to 0.5 instead of 0.2.

The multiplication in the volume of aforementioned operations by the corresponding coefficients results in a single indicator--complex freight turnover, which expresses total volume of work carried out with grain and grain products.

In order to clearly understand the role played by this indicator in planning profits of grain-reception enterprises, let us examine the existing order of accounts between suppliers and purchasers of grain and ready products. According to this order, payments for grain unloaded in terms of intra-system transfer are made, as noted above, according to uniform accounting prices, and for flour, groats and mixed feeds--according to the wholesale prices of the enterprise.

The bookkeeping balances of sales bases, which carry out accounts with purchasers of grain products, are the repository for large sums of sales differences, which are the gross income not only of these bases but also of other enterprises which are subordinate to the ministry of procurement of the corresponding union republic. This is based on the fact that, as mentioned above, by implementing the reception, storage and unloading to purchasers of grain, flour, groats and mixed feed, workers can, in the process of fulfilling operations, preserve the previously-created cost and simultaneously create and add new costs, which takes on the form of profits in the course of the sale of grain and grain products. These totals of sales differences are the source for forming gross income for the procurement ministry of the union republic as a whole. These sums are used to reimburse turnover expenses, railroad and water freight rates, as well as profits from grain-reception enterprises, sales and grain bases subordinate to them. In this case, the size of their gross income forms in direct relationship to the size of complex freight turnover carried out and to the level of the stable accounting-wholesale factory prices.

Intra-system accounting-wholesale factory prices per ton of complex freight turnover are determined by means of dividing turnover-expense totals according to the base year (without expenses for maintaining oblast, kray and republic (ASSR) production administrations of grain products) and 70-95 percent of profits from the sale of grain products, established according to the annual plan of the corresponding union republic's procurement ministry, by the volume of complex freight turnover foreseen in the plan.

Example

According to the annual plan of the union republic's procurement ministry, turnover expenses (without expenditures for the maintenance of oblast, kray and republic (ASSR) production administrations of grain products) are foreseen (standard figures) to be valued at 76.5 million rubles: profits from the sale of grain products (80 percent of plan)--81.0 million rubles; and complex freight turnover in bulk--35.0 million tons. Based on this data, the accounting-wholesale factory prices per ton of complex freight turnover comprises 4 rubles

50 kopecks (76.5 million rubles + 81.0 million rubles): 35.0 million tons, including the average norm for turnover expenses per ton of complex freight turnover--2 rubles 18 kopecks (76.5 million rubles: 35.0 million tons) and the norm for planned profits--2 rubles 32 kopecks (81.0 million rubles: 35.0 million tons).

On the basis of the volume of complex freight turnover established for the planned year and of the accounting-wholesale price, a determination is made of the profit of the grain-reception enterprise for the fulfillment of this indicator.

Example (Standard figures).

The plan for complex freight turnover has been confirmed for the grain-reception enterprise in a volume of 150,000 tons, including for the first quarter--30,000 tons, second quarter--25,000 tons, third quarter--60,000 tons and fourth quarter--35,000 tons. The uniform accounting-wholesale factory price was established at 4 rubles 50 kopecks, including a general individual norm for turnover expenses of 2 rubles, a norm for direct expenditures--50 kopecks; of these the percent norm for bank credit--15 kopecks and individual plan profit norm--2 rubles 50 kopecks. The norms for turnover expenses for this enterprise were confirmed as follows: for the first quarter--2 rubles, for the second--2 rubles 20 kopecks, for the third--1 ruble 80 kopecks and for the fourth quarter--2 rubles 20 kopecks.

Profits from the fulfillment of the annual plan for complex freight turnover will equal 675,000 rubles (150,000 tons x 4.5 rubles), including in the first quarter--135,000 rubles (30,000 tons x 4.5 rubles), in the second quarter--112,500 rubles (25,000 tons x 4.5 rubles), in the third quarter--270,000 rubles (60,000 tons x 4.5 rubles) and in the fourth quarter--157,000 rubles (35,000 tons x 4.5 rubles).

Based on the above data, the annual plan for turnover expenses will comprise 300,000 rubles (150,000 tons x 2 rubles), including for the first quarter--60,000 rubles (30,000 tons x 2 rubles), second quarter--55,000 rubles (25,000 x 2.2 rubles), third quarter--108,000 rubles (60,000 tons x 1.8 rubles), and fourth quarter--77,000 rubles (35,000 tons x 2.2 rubles).

The difference between the sum of profits for fulfilling the plan of complex freight turnover and related turnover expenditures is represented by profit which in our example according to annual plan equals 375,000 rubles (675,000 rubles - 300,000 rubles), including for the first quarter--75,000 rubles (135,000 rubles - 60,000 rubles), second quarter--57,500 rubles (112,500 rubles - 55,000 rubles), third quarter--162,000 rubles (270,000 rubles - 108,000 rubles) and fourth quarter--80,500 rubles (157,500 rubles - 77,000 rubles).

The size of gross profits from achieving the planned volume of complex freight turnover are affected to a certain degree by receiving income from carrying out operations involving commercial tare, calibration of corn seed, pressing hay, and implementing measures to introduce new technology and to mechanize labor-intensive grain operations.

The source of profits obtained from the sale of grain products, which reflects the productive labor of workers in grain-reception enterprises expended during the carrying-out of production operations related to the reception, post-harvest processing, storage and unloading of grain and ready products, as well as the aforementioned mechanism for distributing this profit with the help of an intra-system accounting-wholesale factory price in proportion to the volume of complex freight turnover refute the opinion held by some economists that grain-reception enterprises plan a standard and not a true profit which they then consider profit from the sale of grain products. In actuality the real profit is the one that is created in grain-reception enterprises and that in accounts with purchasers of grain products takes on the form of sales profits. Taking this into account, bookkeeping balances of oblast, kray and republic (ASSR) production administrations of grain products, grain enterprises, sales and grain bases reflect the profit obtained from the fulfillment of a plan of complex freight turnover.

The size of profits in grain-reception enterprises depends fully on work quality, on the status of plan and financial discipline, on the fulfillment of basic cost accounting principles and on the implementation of a regimen of economy in material, financial and labor resources. In connection with this, in essence they represent cost-accounting profits.

Under normal work conditions of grain-reception enterprises the profits obtained achieve the fulfillment of a plan to make budget payments for production funds and interest payments to Gosbank for credit, the formation of funds of economic stimulation as well as the financing of expenditures involving other articles of the financial plan that are producible as a result of profits. At the same time, the lower the level of turnover expenses in a given grain-reception enterprise as compared to the plan and to last year, the higher profits and consequently the profitability of production-financial activity with the same volume of complex freight turnover will be. And vice versa, the higher the turnover expenses with the same volume of complex freight turnover, which may be the result of non-fulfillment of basic cost-accounting principles, the lower profits will be, with all negative consequences arising from this. In this case economy in or overconsumption of turnover expenses are reflected in the sum of actual profits from the sale of grain products as a whole in the union republic's procurement ministry.

The most important goals of collectives of grain-reception enterprises include an overall increase in effectiveness of production activities, a decrease in the level of turnover expenses and losses, mechanization and automation of loading-unloading and other labor-intensive operations, an increase in labor productivity on this basis, an increase in profits, profitability of economic-financial activity, and an achievement of complete preservation of state grain.

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ESCHEW UNPRODUCTIVE USE OF CAPITAL IN AGRICULTURE

Moscow FINANSY SSSR in Russian No 10, Oct 84 pp 37-39

/Article by G.A. Palaguta, chief controller-auditor for the Control and Inspection Administration of the USSR Ministry of Finances: "More Efficient Use of Agricultural Capital"/

/Text/ During the course of audits and inspections conducted by the KRU /Control and Inspection Administration/ of the USSR Ministry of Finances in the agricultural ministries and departments of individual union republics, numerous facts were uncovered concerning the inefficient use by sovkhozes of productive capital and capabilities, especially agricultural equipment, productive animals of the principal herd, animal husbandry complexes and land reclamation capital. As a result, a sharp increase took place in non-productive expenditures and shortfalls were experienced in the production of many agricultural products. For example, during 1982 the sovkhozes of the UzSSR suffered a shortfall of 42 million rubles worth of agricultural products on the whole compared to the plan for gross output. The ministry's specialists claimed that this was caused by complicated weather conditions experienced during 1982. However, a thorough analysis of the utilization of planned capabilities at poultry raising complexes revealed that when these facilities were fully supplied with feed from the state supplies and when other material, labor and financial resources were available in the required amounts, the sovkhozes fell short in their deliveries of products by more than 46 million rubles worth. In the process, partial or complete use was not made of fixed capital (planned capabilities), the base value of which was in excess of 121 million rubles. On farms of the above-mentioned ministry, in three oblasts alone, 890 different types of agricultural machines had ceased operating owing to the fact that they had been dismantled. On the whole, the sovkhozes of this ministry were not utilizing in an efficient manner approximately 45,000 cows of the principal herd -- they had not produced offspring, they were barren -- the balance value was more than 30 million rubles. Similar shortcomings were noted in other union republics.

The 26 July 1982 decree of the USSR Council of Ministers entitled "Improvements in Accounting and Reporting of Expenditures and Savings in Material Resources" called for the development and introduction in 1983 of a system of indicators for describing losses in material resources and providing the information required on the extent of these losses in the national economy. However, summary indicators which describe the inefficient use of all types of

agricultural capital have still not been introduced into accounting and reporting procedures, nor are they being employed in control-economic work. Methodological instructions have been developed for just one of these indicators -- cattle brood stock -- by the Administration for the Financing of Agriculture of the USSR Minfin /Ministry of Finances/: how to determine a shortfall in agricultural products and compute the unproductive expenditures for the maintenance of barren cows of the principal herd.

The agricultural organs of some union republics, in desiring to conceal the incomplete use of agricultural capital, oppose the creation of such methods. There was good reason for the financial organs developing the method under discussion. It is our opinion that a sharp need exists for such methods at the present time for all types of agricultural capital. In other words, the physical and monetary indicators must systematically take into account the volume of undelivered products (work, services), the result of inefficient use of each type of fixed capital of an agricultural nature and also the unproductive expenditures for the maintenance, either partially or fully, of unused capital.

However, this requires the development first of all of:

- a) a system of economic indicators for the inefficient use of agricultural capital (by types);
- b) a method for computing them and for gathering and accumulating information (by types of capital);
- c) the principles for interrelationships between the economic indicators for inefficient use of fixed capital and the level of material stimulation for workers at agricultural enterprises.

It is our opinion that the system should contain only four indicators: the balance value of unused capital, the value of the gross agricultural output not received for this reason or the volume of work and services underfulfilled, the amount of unproductive expenditures for the maintenance of unused capital and the total amount of damage and loss sustained as a result of their premature writing off.

The collection and accumulation of information on the use of fixed capital and capabilities can be carried out suitably in our opinion with the aid of the economic passport of a sovkhoz. This document testifies to the productive potential of an enterprise as the totality of means of production and the labor and material resources required for producing goods or performing work. The statute dealing with the passport of a production association (enterprise) calls for one to be prepared by each enterprise, commencing in 1982, based upon the accounting data for 1981. The passport is part of a standardized system for planning documentation and consists of standard forms (tables) which describe the degree of use of all types of resources. The use of capital and capabilities is discussed in Section 2 "Production Capability" and in Section 4 "Fixed Capital." However, it is our opinion that the standard forms for these sections do not express fully the specific nature of the use of capital and capabilities at agricultural enterprises. Moreover, the situation can be

corrected, since the statute on the passport of a production association (enterprise) authorizes the ministries "to include in the passport additional forms and indicators which express the specific nature of the particular branch and to approve them in coordination with USSR Gosplan and the USSR TsSU /Central Statistical Administration/.

The economic indicators proposed by us could supplement the standard forms for a passport, thus making it possible to reflect more accurately the level and specific nature of the use of agricultural capital. In conformity with the mentioned statute, a higher branch organ and also the territorial planning and statistical organs, when the need so arises, can require an enterprise to provide a duplicate of its passport or individual sections (forms) of it.

Thus, having included in the passport the indicators required for the use of agricultural capital and having required the presentation of some of them in the prescribed manner, any higher organ of economic administration, including the Minsel'khoz /Ministry of Agriculture/ for a union republic can obtain the information required on the level of utilization of capital and thereafter undertake timely measures aimed at ensuring more efficient use of them. Such information will be of use to the territorial planning organs when distributing logistical resources and to the financial organs -- when planning the financial resources.

The data obtained from operational and primary accounting of a sovkhoz is sufficient for computing all of the proposed economic indicators for the inefficient use of agricultural capital. The method for computing them can be as follows. For example, the balance value of unused livestock facilities is computed proportional to the unused space of the complexes, farms and so forth, or according to the average number of livestock spaces not used during a year's time. The shortfall in products -- according to the actual productivity of the animals and the number of animals which were not maintained in the empty and usable areas of farms and complexes. Any of the following could be a source for obtaining data for determining the balance value for inefficiently used machines, equipment and transport equipment at agricultural enterprises: cards or an accounting record for fixed capital, an accounting logbook on the carrying out of the principal field operations (agricultural logbook, Form No. 245), an accounting logbook for operation of a machine-tractor pool (agricultural logbook, Form No. 250), accounting report on idle time of machine-tractor pool (agricultural logbook, Form No. 251), accumulation accounting reports on use of the machine-tractor pool (agricultural logbook, Form No. 37a), accumulation accounting reports on the work of freight motor transport (agricultural logbook, Form No. 38) and other primary and bookkeeping documents.

Unproductive expenditures for the maintenance of unused capital can be computed based upon all expenditures and the unused portion of the capital (proportional to the usable area, the livestock billets and so forth). The expenditures for the maintenance of fixed capital include expenses for current repairs, the overhauling of equipment and technical maintenance, insurance payments and so forth. It is our opinion that these expenditures should also include the amortization deductions for unused capital; indeed, they increase the production expenses at a time when the capital is not participating in the production process.

The losses caused by not completely amortized fixed capital are determined in the established manner. It is also considered advisable to include in the structure of losses caused by the inefficient use of fixed capital the residual value of such capital, applied in accordance with the accepted statute for reducing standard capital (for housing and for capital sold as surplus). At the present time, the residual value of prematurely discarded animals of the principal herd is also not being determined. It must obviously be viewed as the difference between the balance value of the discarded animals of the principal herd (with the addition of a discount, applied when the animals are transferred over to the principal herd) and the earnings realized from their sale after having been discarded. Special importance is attached to information on pedigree animals, the earnings from the sale of which for meat purposes are considerably lower than expenses for reproduction of the herd.

The fact that the indicator for output-capital ratio is not being planned today at the sovkhoses is considered by us to be a substantial shortcoming. As a result, many farms and agricultural organs are not analyzing the reasons for this reduction and traditionally they justify such a reduction mainly on the basis of unfavorable weather and climatic conditions, thus concealing mismanagement. But indeed it is well known that an increase of just 1 percent in the output-capital ratio for the country as a whole will furnish the national economy with tremendous gain -- approximately 5 billion additional rubles of national income.

A planned indicator for output-capital ratio must be prepared not only for each enterprise but also for each brigade, farm and livestock complex. An analysis of the actual data will be of assistance in uncovering the reasons for deviations and also in undertaking measures aimed at raising the output-capital ratio. The four economic indicators proposed, as set forth in the passport of an enterprise, will point out the true path to be followed for raising the ratio.

At the present time, the territorial planning, financial and statistical organs do not have summary information at their disposal on the level of use of all types of agricultural capital and the agricultural organs are not interested in collecting such information. Instead, the latter strive not to reveal the true level of their use of capital. For example, the Sovkhoz imeni Il'ich Dairy Complex in Lenkoranskiy Rayon of Minplodoovoshchkhov /Ministry of the Fruit and Vegetable Industry/ for the Azerbaijan SSR, at a cost of 1.6 million rubles was occupied on the average by only 50 percent during 1981, despite the fact that the period for mastering its capabilities had already expired. A complex for the raising and fattening of young cattle stock at the Varly Khayat Sovkhoz in Masallinskiy Rayon, of this same ministry, was occupied by 16.8 percent in 1981 and the Narimabadskiy Interfarm Fattening Complex -- by 33 percent. A value of 1.7 million rubles was placed upon the productive capabilities which were not used at these complexes. This came about owing mainly to a lack of feed for the animals and this in turn resulted from the failure to carry out land reclamation work aimed at creating a feed base. In addition, the dairy complex was not supplied adequately with pedigree heifers. In order to learn the true causes of these problems, the financial organs were required to carry out actual inspections of the complexes in the various areas.

And there is one final point. We are of the opinion that a need exists for establishing an interrelationship between the level of use of capital and all types of material stimulation. Since the output-capital ratio is not being planned for enterprises, many of them are fulfilling their indicators for growth in profits and for the sale of agricultural products compared to the preceding five-year period and they are receiving bonuses, while at the same time their productive capital and capabilities are by no means being used fully. In such instances, the amounts of the bonuses and awards could be reduced, with the funds made available in this manner being used to compensate for damages, losses and expenditures for the maintenance of inefficiently used agricultural capital.

Some specialists believe that such funds will not be adequate. But then a question arises: is it right for bonuses to be paid out for the inefficient use of agricultural capital?

The specific amounts and principles for reducing bonuses and the economic incentive funds can be determined after computing and obtaining the summary data on the inefficient use of fixed capital in accordance with the four indicators proposed. The data over a number of years for such economic indicators as the value of unused productive capital and capabilities, a shortfall for this reason in gross output or non-fulfillment of the planned volumes for work and services, unproductive expenditures and damages and losses caused by the inefficient use of fixed capital in agriculture, is making it possible to develop and verify, at various levels of economic management, a more accurate method for computing them, to establish the degree of their influence upon the level for the output-capital ratio and to determine the true indicators for the effectiveness of use of all types of agricultural capital.

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EFFECTIVENESS OF KAZAKH INTER-FARM SPECIALIZED ENTERPRISES

Alma-Ata SEL'SKOYE KHOZYAYSTVO KAZAKHSTANA in Russian No 10, Oct 84 p 20

[Article by S. Baymukhanova, worker of the AINKh [Asian institute of national economy]: "The Effectiveness of Specialized Agricultural Associations"]

[Text] Over 9,000 inter-farm specialized associations, enterprises and organizations are now operating in our country; participating in them are about 150,000 partners--kolkhozes, sovkhozes, and so forth. An analysis shows that in these enterprises labor expenditures for the production of a unit of production are 1.5-1.8 times, and cost--1.3-1.6 times lower than in non-specialized enterprises.

The high level of economic effectiveness of inter-enterprise cooperation is also manifested in the possibility of increasing the return on capital investments as well as on other materials and financial resources and in the more thorough utilization of scientific and technical achievements.

A great advantage of inter-enterprise and agro-industrial associations is the fact that labor resources are used efficiently in them. This is of important social significance for the continued development of agriculture--first of all, year-round work is provided for the population and the growth in its material well-being is accelerating; secondly, prerequisites arise for familiarizing agricultural workers with the industrial organization of labor and high level of production discipline; thirdly, the opportunity is created for improving cultural-everyday conditions for people and for the gradual elimination of differences in the level of general education and training of agricultural workers.

In Kazakhstan, as in the country as a whole, work to develop inter-enterprise cooperation is strengthened with each passing year.

In the republic, the foundation for the transition of livestock raising to an industrial base was laid during the 10th Five-Year Plan. During its years 840 various complexes and feeding platforms were built and put into operation.

The strengthening of intra-branch specialization in livestock raising is related to the organization of inter-enterprise associations for beef production and for raising pedigree calves, as well as to the building of large dairy complexes. At the present time, 164 inter-enterprise rayon and inter-

rayon specialized associations for raising and fattening cattle, about 100 complexes for milk production and over 350 intra-enterprise platforms and complexes for fattening sheep, etc. are operating in the republic. Also in operation are four complexes for the intensive raising and fattening of cattle with a total capacity of 23,000 head in a one-time arrangement, including the Dzhetygenskiy of Alma-Ata Oblast for 10,000 head, Zhdanovskiy in Eastern Kazakhstan Oblast, Shelkarskiy in Tselinograd Oblast and imeni Gazeta Pravda in Uralsk Oblast. In the future the capacity of the complex in Tselinograd Oblast will be increased to 10,000 head, and beef production will increase to 57,000-62,000 tons.

In the northern oblasts more extensive development has been achieved by specialized production associations for the raising and fattening of livestock. In Tselinograd Oblast there are 14 of these, and in Kokchetav Oblast--19. In 1982 associations of specialized enterprises in Tselinograd Oblast had economic ties involving inter-enterprise cooperation with 102 enterprises, and the associations of specialized enterprises of Kokchetav Oblast--with 130. An analysis shows that they operate more effectively than non-specialized enterprises. Occupying 7.3 percent of agricultural lands and having about 9 percent of the arable land, the association of specialized enterprises in Tselinograd Oblast produced an average of 8 percent of gross grain yield, 26.5 percent of beef and 9.5 percent of the pork during the years of the 10th Five-Year Plan. The proportion of associations of specialized enterprises in total meat deliveries to the state exceeded 30 percent in 1982, and the Kurgal'dzhinskoye Association of Specialized Enterprises supplied 65 percent of the rayon's meat, Yermентаuskoye--46 percent and Seletinskoye--55 percent.

Inter-farm enterprises, having achieved an increased pace of production growth, have improved the use of labor and material expenditures. Thus, in inter-farm enterprises almost half the feed was expended per quintal of weight gain, and its cost was 40-45 percent lower than in multi-branch sovkhozes and kolkhozes in the oblast.

Moreover, the livestock sold by inter-farm enterprises specializing in fattening was in better condition and had a higher live weight. In 1982 the associations of specialized enterprises of Tselinograd Oblast supplied the state with several tens of thousands of head of cattle with an average live weight of 478 kilograms, and 93 percent of these animals were placed in the highest category for nutritional state, whereas during this time the oblast's multi-branch enterprises were supplying livestock with an average live weight of no more than 350 kilograms and with only 50-55 percent of the animals qualifying for the highest category for nutritional state.

Inter-farm cooperation not only increases production effectiveness, but also provides real economic advantages to cooperative members. For example, in Tselinograd Oblast, of the attained profits 35 percent are distributed among members. Incidentally, kolkhozes and sovkhozes which supply young animals have the opportunity to focus attention and resources on other branches, thanks to which conditions are being developed in member enterprises to facilitate the rapid growth of the brood herd, a decrease in labor expenditures and resources for the upkeep of animals, and so forth.

As practice shows, one of the basic principles for building proper relations between participants in cooperation is that each one receives an equal income and that there is an increase in the total mass of products produced on the basis of increasing the productivity of fields and farms. This must be facilitated by a unity of interests of all partners and by the achievement of complete agreement on questions of cooperation. Here there will be an increase in the role of improved planning as the central factor in managing all production processes.

In connection with this the necessity is strengthened to consider the appropriateness of the association's feed base to the possibilities available in cooperating enterprises. Unfortunately, contractual obligations between them are not always carried out, and this results in decreased effectiveness in joint production as well. In order to fully solve the feed problem of inter-enterprise structures it is expedient to preserve a system in which participating enterprises are given a procurement plan and inter-farm enterprises--a plan for production output.

Recruitment into inter-enterprise cooperation is carried out in the republic by means of creating independent production in each area as well as by expanding the sphere of activities of existing production. In the first case, completely new production is developed in a new place as a result of cooperation. This type of practice in building inter-farm enterprises has, in addition to its positive qualities, many negative aspects--in particular, this requires the diversion of large sums of capital investments for the building of livestock-raising facilities and structures, which limits possibilities for expanding production to a certain degree. This is why the building of new structures must be strictly coordinated with the efficient utilization of existing facilities by means of renovation and expansion of capacities, and so forth.

One of the advantages of inter-enterprise cooperation is that all sovkhoses and kolkhoses, regardless of their economic condition, are included in the cooperative process. In this case the proportion of participation in cooperation differs according to the size of the contribution, but return on investments and production effectiveness are the same for all cooperative members. Thus, here we have a successful solution to one of the biggest problems--that of gradually equalizing economic and social conditions in agricultural enterprises.

It is essential to note that the form of inter-enterprise cooperation is advantageous not only for small and economically weak, but for large enterprises as well. The installation and effective operation of modern specialized enterprises of the industrial type within a single multi-branch enterprise is often made difficult by their size as well as by limited material, labor and financial resources. With cooperation all of these problems are dealt with much more easily.

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8228

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READER COMMENTARY ON ASPECTS OF 'UNEARNED RUBLE' DISCUSSED

Moscow SOVETSKAYA ROSSIYA in Russian 3 Oct 84 pp 3

[Article by V. Trushkov: "For One's Self and the Market"; For earlier SOVETSKAYA ROSSIYA articles, see USSR REPORT: CONSUMER GOODS AND DOMESTIC TRADE, JPRS UCG-84-015, 19 Jul 84 p 43, and FBIS Soviet Union DAILY REPORT Vol III No 094, 14 May 84 p R7]

[Text] The discussion about the unearned ruble begun by the newspaper ("The Angles of the Unearned Ruble" on 6 May 1984, "The Evil of the Unearned Ruble" on 31 May 1984 and others) aroused a great reader response. Readers are concerned about cases of speculation, bribery, theft, the use of the work situation and other violations of the norms of a socialist society.

Letters to the editor focus attention on many "angles" of the unearned ruble. There was an especially great response to the problem of socially-justified use of private plots. There are problems here, as well as things to think about.

According to the calculations of specialists, private plots have a considerable effect on the level of per capita consumption of primary feed products. In order to maintain the consumption of food products on a contemporary level without the help of these plots, kolkhozes and sovkhoses would have to increase the sowing area in labor-intensive crops by a factor of almost 2, the herd of productive livestock--by 20 percent and of cows--by almost one-third. We are pleased that today, as Kaluga reader M. Reznikov notes, "there developed is a clear trend toward strengthening the private plot, toward using 'useless' suburban land and village land."

In addition to economic functions, the private plot fulfills important social functions as well. We would like to especially emphasize that this is one of the unique forms of using leisure time and an important means of work education and professional orientation of village youth.

K. Voronova of Tomsk wrote to the editors: "I have four children. From their early childhood I have been teaching them to work. First the older ones took the younger to play in the yard. Then they helped me and my husband feed the cow, hogs and rabbits, gather grass and water flowers. In this way I taught the children to value work, kindness and beauty. Now the neighbors are envious

of what good children my husband and I have. They all have their own families now. They all have completed their educations and are now all working conscientiously."

Here is a letter from a Cherkassy retiree, Yegorov. It also speaks about rewards--spiritual ones. "A person who works on his own plot, in a country house, satisfies his spiritual needs. He does not wait for someone else to raise and bring him vegetables and fruits. He does all this himself in his spare time on his days off. Our thanks to these people." Well, we must also join in the kind words of the reader concerning the working man.

Private plots rely first and foremost on those labor resources which are inaccessible to public production--the labor of retirees, housewives, invalids and students.

Research shows that the production possibilities of private plots have by no means been exhausted. Their development is hindered by a high degree of labor-intensiveness, by a lack of balance between the herd and the feed reserve, by the poor correlation between the needs of public and private enterprises. Letters from readers confirm the justification of the scientists' conclusions. M. Leont'yev (Vladimir), V. Petrova (Komsomol'sk-na-Amure) and others write about how difficult it is to acquire organic fertilizers, instruments and so forth.

Thus, under contemporary conditions private plots are undoubtedly a good thing. They deserve support, attention and help from local organs and city and village enterprises.

But there is another side to the problem which also must be discussed. I will present excerpts from a Moscow resident, M. Korchagin. First of all, he emphasizes that the private plot is an objective part of our life and of socialist reality and therefore must be evaluated from the position of the interests of socialism. "The state meets workers halfway in considering that the private garden-orchard also makes a contribution to the Food Program. In other words, it is one of the forms of socialist production of products for the people. This is why it is provided with comprehensive aid. The sale of building materials, seed, inventory and non-organic fertilizers according to state prices is a regular matter. The vegetable farmer uses state lands, water and electrical energy. Millions of lovers of orchards and vegetable gardens supply themselves and their own families with fruits and vegetables. Surplus products go to markets and improve personal well-being. And this involves the same labor ruble. Unfortunately, there are still many people who distort the essence of the subsidiary garden or orchard. I will note honestly that they are involved in contributions, but not to the Food Program but rather into their own pockets."

This thought is expressed in the letters of V. Domnin (Moscow Oblast), M. Giruskova (Kislovodsk), V. Sonimenko (Vologda), V. Ponimasha (Gorkiy), R. Filippova (Suzdal') and others. Perhaps they are going to extremes in making assurances that there are still people who live only by means of the market? But here is a letter from Kashira. Its authors write frankly, "We live only

by means of the market and we fear its disappearance." They are furious at readers who propose a stricter approach to market trade and evaluation according to the measure of a socialist society.

I will allow myself one digression. In late August the traditional expositions of flowers and fruit took place in cities. These are bright, festive shows. City residents went to admire the power of man, his mind and his imagination. For example, at an exhibition of this type I saw amazingly beautiful and delicate blue carnations for the first time. Nearby lay traditional southern fruits raised on the 57th parallel. A fairly large tomato attracted my attention, not only because of its size but because of its name on a sign--"Market Miracle." Here not only conscientiousness and skill (I will not negate these), but a certain value system--market, petty and relating to small property holders--are revealed.

Incidentally, I could assume that I wrongly question whether a mature, ruby-colored tomato is red, that I, as well as many other readers, am looking at the problem in a one-sided manner. But here again we have data from scientific research.

The Institute of Economics and Organization of Industrial Production of the Siberian Division of the USSR Academy of Sciences conducted research on private plots in the Siberian village. Scientists feel that with the absence of necessary controls sometimes there is an appearance of plots which grow beyond the norms permitted by the state. The owners of such plots not only receive a large monetary income but also have the privileged opportunity of transforming this income into items reflecting conspicuous consumption--cars, expensive furniture, furs and carpets, and so forth. It is curious that most village residents feel that similar large private plots belong primarily to those who participate little in public production. But this is not all. The striving toward profit one may sometimes come across in the owners of private enterprises often results in a violation of socialist laws--in many enterprises of investigated regions cases of misappropriation of public feed were noted.

K. Voronova of Tomsk deserves sincere respect (an excerpt from her letter has already been printed above) for raising good, conscientious children through participation in household work. But there is a serious basis for the opinion that in some families private plots become the means of educating children in mercenary goals and in striving for gains. The concern of R. Filippova from Suzdal' is justified when she sees that "there are people who go to work only to be counted, but who live, in both the direct and figurative senses, in their gardens, which bring in a large income."

Once again let us turn to Novosibirsk sociologists. They feel that production leaders, who give a large part of their time to the national economy often find themselves in a less advantageous position than enterprising owners of large private plots, the maintenance of which often is at the expense of public production.

Writers from Kashira frighten us: "As soon as stricter controls are introduced (with regard to trade in markets), no one will plant or sow anything and we

will be looking at bare land overgrown with weeds." This is a needless and groundless fear. As V. I. Lenin noted more than once, socialism means accounting for things and controlling them. The private plot is no exception--it is also a part of socialist reality. There should be a thorough study of its size and serious thought given to the mechanism of market prices. A closer look should also be taken at habits of the market.

Of course, the activities of procurement organizations must be strictly controlled. Their work is still insufficiently effective. Consumers' cooperation is still a weak competitor for the market. Control of the market itself is also useful. There should be controls over how the market's directors concern themselves with buyers as well as sellers. Also, this market must be moved closer to the purchaser. State trade with agricultural products also requires attentive controls--why is the quality of these products often inferior to that of vegetables and fruit found on the kolkhoz market?

Unfortunately, there is no insurmountable wall between the earned and the unearned ruble. It happens that the former sometimes becomes the latter--by means of an income that cannot but cause concern in society by its unjust and unfair nature. This is why our society must cover those channels through which this type of outflow occurs. This also is an essential aspect of the movement toward social justice.

8228

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TIMBER RESOURCES LOST IN KRASNOYARSK GES FLOOD ZONE

Moscow EKONOMICHESKAYA GAZETA in Russian No 38, Sep 84 p 14

[Article by A. Isayev, corresponding member of the USSR Academy of Sciences, chairman of the Krasnoyarsk affiliate of the Siberian Department of the USSR Academy of Sciences, secretary of the Committee on Natural Conservation and the Efficient Utilization of Natural Resources of the USSR Supreme Soviet and deputy: "The Taiga and the Man-Made Sea"]

[Text] In the planning and building of very new hydroelectric station, especially in regions rich in timber, such as Krasnoyarsk Kray, an extremely difficult question unavoidably arises--how to most effectively utilize the timber that falls in the flood zone! The author of this article discusses the subject.

Krasnoyarsk Kray has at its disposal unique hydroelectric resources that have been assimilated more and more intensively in recent years. Everyone knows about the Krasnoyarsk GES [Hydroelectric Power Station]; during this five-year plan the building of the Sayano-Shushenskaya GES will practically be complete. Within the system of the Noril'sk Combine the Ust'-Khintayskaya Station is working dependably; the Kureyskaya Station is being built. The building of the Bogushanskaya GES in Angara is in the conclusive stage; the technical and economic bases for building the Central Yenisey station have been developed and confirmed.

But, while acquiring more and more kilowatts of electrical energy, the national economy is losing many cubic meters of valuable wood because a significant quantity of timber unfortunately remains at the bottom of man-made seas, which results in subsequent negative phenomena.

Let us look at the more than 10 years of experience in operating the reservoir of the Krasnoyarsk GES. At the time, the flood zone encompassed tens of thousands of hectares of area covered with timber, whereas the felling area comprised a few thousand hectares.

During the first years of the station's operation, a small amount of timber accumulated at the dam. Even today wood litters the Krasnoyarsk Sea, polluting it and making the movement of ships more difficult. It becomes necessary to tow the timber into bays, where it can be burned or used for sedimentation. (Incidentally, such timber is hardly suitable even as kindling).

The level of reservoirs fluctuates annually within the limits of 16-18 meters, which unavoidably results in a destruction of the banks, which are covered with timber that was not felled at the appropriate time and that even now pollutes the reservoir together with dead standing wood and sunken logs. In this way, considerable expenditures related to the upkeep of reservoirs in a dependable condition are added to great direct losses.

A lesson should be learned from this sorry experience. Incidentally, planners now have a point of reference for planning a felling area--in 1976 the "Resolution on the Order of Implementing Measures to Prepare Reservoir Flood Zones in Connection with the Building of Hydroelectric Power Stations" was put into effect. In particular, the resolution states that of the total quantity of timber subject to flooding, commercial timber with a diameter over 12 centimeters and with reserves of over 60 cubic meters per hectare is subject to mandatory felling.

As I have said, the building of the Bogushanskaya GES has reached the conclusive stage. Specialists have calculated that within the limits of Krasnoyarsk Kray alone 64,000 hectares with a timber reserve of 9.3 million cubic meters are subject to tree felling; this is many times more than the area planned for the Krasnoyarsk GES.

Work to fell trees in the reservoir zone for this station began 6 years ago. The completion date has been set at 1988. However, felling is proceeding at such a slow pace today that it is simply difficult to talk about a timely end to operations. As confirmation of this it suffices to present only one figure--in 6 years about 2 million cubic meters of timber have been procured in the flood zone, or only 22 percent of the planned amount. Thus, in a little over 3 years it is necessary to fell another 7 million cubic meters of timber.

This problem has been examined more than once by the kray committee of the CPSU and by the executive committee of the kray soviet of people's deputies. Nevertheless, timber-felling work continues extremely slowly as before.

The quality of timber felling itself is cause for alarm. Despite the fact that USSR Gosstroy approved a proposal by the kray executive committee about the necessity to additionally clear the coastal zone of the reservoir between the 190 to 208 meter levels by felling all timber having a diameter of 8 centimeters (because this is where the process of destruction of the shoreline will be most intensive), according to data from the forestry administration only high-quality softwood is still being procured from the flood zone. This means that a significant quantity of uncut timber will remain at the bottom of the future sea. As of early this year, 80,000 cubic meters of timber were already abandoned, another 15,000 were not moved from timber-felling areas, and 2,200 hectares of land were not cleared of timber-felling remains. As for hardwood, which comprises 20 percent of liquid reserves, it is not procured at all because timber-procurement organizations still cannot solve the problem of shipping and processing it.

Builders of the Boguchanskaya GES are doing everything possible to cover Angara by next year. If urgent measures are not taken, this will unavoidably

result in the flooding of large areas of timber. It should be kept in mind that there are about 400 million cubic meters of commercial timber in the raw timber base adjoining the reservoir. The assimilation of this region, which is promising for the timber industry, is being hindered primarily because of the absence of a railroad.

But this railroad is located very close by. Only 42 kilometers from Boguchan (where, incidentally, a hydroelectric power station is being built) the builders of Mintransstroy [Ministry of Transport Construction] were forced to stop--USSR Minlesbumprom [Ministry of Timber, Pulp and Paper and the Wood Processing Industry] had curtailed financing.

Thus, lags in the building of this small section of railroad had a negative effect not only on the development of the forestry branch but also on the pace of carrying out timber felling in the region of the Boguchanskiy GES reservoir.

Whereas the aforementioned station is now in the construction stage, the technical-economic foundation has just been confirmed for the Central Yenisey GES.

Naturally, there are large reserve of quality Siberian timber in this station's flood zone. The volume here is significantly greater than in the Boguchansk region. Prior to flooding, over 25 million cubic meters of timber must be felled and removed. As we can see, this is not a simple task. This is why, considering the experience of GES's currently operating or being built, it is necessary to carry out timber felling in these areas at a most rapid pace. Timber industry enterprises having raw materials bases in the flooding zone or adjacent to it should be recruited for this work.

The problem of timber felling is complicated by the fact that several departments at once are responsible for it--the USSR Ministry of Energy, the USSR Ministry of River Transport, the USSR Ministry of Timber, Pulp and Paper and Wood Processing Industry and several others. Perhaps USSR Gosplan can eliminate departmentalization?

Timber felling and clearing of felling areas do not simply mean the procurement of commercial timber in its traditional form. In this case the timber that is procured is not of the quality to which timber-processing enterprises are accustomed. This is why the economies of such timber industry enterprises specializing in timber felling (and it is their development that must be discussed) that may turn out to be unprofitable by today's standards.

Such specialized, mobile timber industry enterprises with their special equipment and techniques can operate very effectively and profitably only if they and their products are enclosed within a system of enterprises that thoroughly process wood. Incidentally, for the Central Yenisey GES this problem may come to a positive solution if the long-planned TsBK [Pulp and paper combine] is built near the city of Lesosibirsk, thereby completing the development here of a large complex for the thorough processing of timber.

In our opinion the questions that have been raised also acquire special significance in view of the fact that today, while the program for the 12th

Five-Year Plan is being worked out, the problems related to the economic use of timber resources in the GES flood zone, to timely timber felling and to a more complete cleaning of future seas can find their place in the national economic plan. This is all the more true since all these problems must be dealt with within a complex with the main problem--that of the effective use of timber resources in Krasnoyarsk Kray with a consideration of possible ecological consequences and without contradictions as concerns the problem of building new Siberian GES's.

8228

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TIMBER PROCUREMENT CONTRACT VIOLATIONS DEPLORED

Moscow LESNAYA PROMYSHLENNOST' in Russian 13 Dec 84 p 2

/Article by A. Chursin: "Delivery Discipline"/

/Text/ In the decree of the CPSU Central Committee and the USSR Council of Ministers entitled "Improving the Utilization of Forestry Raw Material Resources," mention is made of the fact that non-fulfillment by our ministry of the delivery plans for wood has become a serious hindrance in the development of a number of national economic branches. True, somewhat greater interest has recently been displayed in our branches with regard to the carrying out of contractual obligations. And compared to last year, a decrease has even taken place, from a monetary standpoint, in the non-deliveries. However, such comparisons provide no basis for complacency: during 11 months of this year, the enterprises of USSR Minlesbumprom /Ministry of the Timber, Pulp and Paper and Wood Processing Industry/ fell behind in their obligations to the consumers by more than 900 million rubles worth of products.

It can be stated directly that this situation is an alarming one. What is the root of the problem and how can we extricate ourselves from this predicament?

Formula for Progress

The decree by the party and government concerning the observation of contractual obligations, adopted in April of last year, has served as a powerful impetus for restoring order in the system of deliveries.

USSR Minlesbumprom responded immediately to this document by issuing several orders aimed at strengthening delivery discipline. Moreover, a branch conference was recently held for the purpose of discussing this problem. Nevertheless the plan for carrying out contractual deliveries is being fulfilled at the level of 95-96 percent.

How can progress be achieved in the matter of deliveries and how can the enviable figure of 100 percent be reached? The branch's staff has a simple answer for this question: 100 percent cross-cutting must be added to 100

percent shipments. This is a very accurate formula! However, there is one unfortunate circumstance: although the plans for shipments are on the whole being fulfilled, the same cannot be said concerning the wood dressing operations. Over a period of 10 months, the production plan was underfulfilled by approximately 12 million cubic meters of lumber.

It comes as no surprise to learn that such problems are arousing a storm of complaints concerning the unsatisfactory organization of deliveries. Recently, for example, the Editorial Board received a letter from workers at the Lvov Plywood Combine. They expressed complete bewilderment: they wished to know how it was possible for the Tyumen'lesprom Association, considered to be the initiator of the competition, to be able to exceed its task for shipments and then carry out deliveries to the combine at a level of only 30 percent of the plan. And the Lvov consumers are not the only ones served by this association.

Generally speaking, such arbitrariness is by no means a rare phenomenon. For example, the Amur LDK /sawmilling and woodworking plant/ is constantly being undersupplied with wood from Dal'lesprom. Why? It turns out that this grade is being produced here at the level of 40 percent and, in order to make up for it, the production of 4th grade pulp wood is being exceeded by 12 percent.

The impression has developed that some areas at times are unaware of the importance attached to the observance of contractual obligations and that there cannot and must not be so-called poor grade assortments. Yet this same attitude has developed among certain procurement specialists. What is it based upon? Actually, these grades constitute only 2.6 percent of the overall volume of round timber for the ministry as a whole. And the figure is even less for some associations. But is this sufficient reason for ignoring deliveries? There is a reduced delivery of poles -- and somewhere a needed line of communication is not placed in operation within the time allotted.

On the other hand, many serious claims are being made against the consumers of the timber products. Generally, they can be formulated as follows: the consumer must not be a consumer. Recently the CPSU Central Committee examined the question of "Serious Shortcomings in the Use of Secondary Material Resources in the National Economy." Our ministry turned out to be one of those which is tolerating especially serious shortcomings in the collection and processing of so-called waste products.

For example, let us take the Soyuzplitprom Association. This year it must place in operation 928,000 cubic meters of waste products, including 125,000 cubic meters obtained from enterprises of other departments. In the case of the other departments, use was made of only 13,000 cubic meters.

It is in this sense that the workers at the Yugmebel' Association are deserving of praise. Together with the enterprises of 23 ministries and departments in Krasnodar and Stavropol krais and also in Rostov Oblast, they organized the collection and delivery to their own plants of DSP /wood laminate/ obtained from all types of wood waste. The result was indeed an enviable one: since the beginning of the five-year plan alone, more than 700,000 cubic meters of various types of panel board have been produced. In short, the waste products turned out

to be only half as expensive as the raw materials obtained from timber establishments in the Urals and Siberia. In all, 40,000 freight cars were made available for transport operations and 8,000 hectares of forest did not have to be cut down. This then is an example of efficient management of the economy!

Experience has shown that shortcomings in the organization of the work are by no means the only reason for a disruption in deliveries. Here are some rather significant figures. During the 10 month period, the ministry fell behind by roughly 12 million cubic meters in the production of lumber and in its lumber deliveries -- by almost 15 million cubic meters.

Where Did They Lose Three Million?

We are now drawing very close to discussing delivery discipline. In S. Ozhegov's defining dictionary, the term "discipline" is defined as "mandatory subordination to established order." Mandatory! So as not to intrigue the reader for too long a period with the question raised in the subtitle, we will proceed to answer it forthwith: the reason for this loss must be found in the absence of obligations on the part of the parties involved.

On more than one occasion, I have become convinced that the role played by contractual obligations has declined in many areas. "Let us have shipments and let us have cross-cutting!" -- this then is the campaign war cry at timber establishments. And just as soon as the discussion concerns deliveries -- considerable misunderstandings and arguments. The suppliers constantly err by taking certain liberties with regard to production grades for the products, while the recipients in many instances confuse their rights and obligations. Deputy Minister D.V. Didkovskiy made a curious comment -- merely through the elimination of elementary untidiness and carelessness in the practice of concluding agreements, the level of their implementation can be raised by one percent.

And here is proof of that. An argument flared up between the Okulovka TsBK /pulp and paper combine/ and the Novgorodles Association: the timber procurement specialists demanded that a fine in the amount of 168,000 rubles be levied against the paper-makers for the poor selection of wood. The latter are remaining steadfast. And indeed, in accordance with the contract the combine is obligated to ship the raw materials using its own motor transport equipment.

Here is still another example. The Karellesoeksporta Timber Plant at Lyaskelya imposed a penalty of 19,200 rubles upon the Ledmozero timber establishment for having disrupted the deliveries of saw timber. The timber procurement specialists referred to a shortage of freight cars. But the inspectors studied the transport records and were convinced: the availability of the freight cars was at the level of 95 percent of the plan and the deliveries carried out were at only 32 percent.

The roots for such mismanagement are to be found in the low level of executive discipline. In October the ministry inspected the Tomlesprom Association. It revealed that not one of the recent orders issued by USSR Minlesbumprom concerning deliveries had been carried out.

And how is the accounting for deliveries being carried out in the various areas? To say the least, in a less than serious manner. Let us examine a 20-day summary of the carrying out of contractual obligations by Krasnoyarsklesprom during November. The figure is 91 percent. This was not too bad: there is always the hope that the remaining 9 percent will be achieved by the end of the month. As they say in such instances, one can hardly believe his own eyes. Having glanced at another document -- data on cross-cutting -- wonder is expressed in the ministry. The production of the principal grades during this period was at the level of 60-70 percent. What was this: the usual disorder or a completely recognizable fraud?

One is just about able to comprehend the paradoxes in the reports, although this certainly consumes a considerable amount of valuable time. And what is to be done with those careless economists who wilfully use the forest for their own (and at times criminal) purposes? It is known that an unscheduled release of wood is forbidden. Nevertheless, use is made of this illegal loophole, notwithstanding the fines and reprimands that can be imposed. Especially poor work has been performed by such associations as Dal'lesprom, Soyuzlesdrevprom, Tomlesprom.

Commencing with the new year, more stern sanctions will be imposed against all such transgressors. An over-expenditure of lumber, over and above the funds, will be punished by the assignment into the state budget of an amount equal to twice the value of the lumber. And for the use of wood for a purpose other than the original one intended, including for the construction of unplanned installations, a fine amounting to three times the value of the wood will be imposed upon the guilty party.

Supplier, Improve Your Status!

Decisive measures must be undertaken aimed at restoring order in the transport economy. This sector of work is very important. But quite often the reasons for losses here are not declared to be serious. The shipping of timber and its preparation will be well organized, the deviations from the assortment program have been reduced to zero and such vexing problems as insufficient requests for freight cars and rejections of freight cars have decreased in intensity. And a steady strengthening of business contacts with the railroad workers and an intensification in the technical-equipping for loading operations are making it possible to reduce the idle time of the rolling stock.

Many controversial problems are arising between the timber procurement specialists and workers attached to local subunits of Soyuzglavles. In order to eliminate them, USSR Minlesbumprom and USSR Gosnab have developed a model (standard) contract concerning interrelationships between all-union associations and the organs of Lessnabsbyt.

In accordance with this document, an all-union association presents Lessnabsbyt with a list of the production associations which will conclude delivery contracts. But the all-union association can itself draw up contracts with consumers. We have already accumulated such experience: this form took root very well at Arkhangel'sklesprom. What advantage does it offer? Whereas a production

association cannot count the resupply of a particular assortment towards the fulfillment of its contractual obligations, an all-union association can include it among its assets.

There is still one other advantage of the new system of relationships with Lessnabsbyt. Point five of the model agreement makes it possible, by agreement with the marketing personnel, to substitute one supplier for another depending upon the production situation. This system is acquiring greater flexibility.

But, in presenting the timber procurement specialists with such a possibility, the Lessnabsbyt workers quite properly require them to be more punctual in presenting the resources planned. In terms of both volumes and delivery schedules. Improvements must be achieved here first of all by Vologdalesprom, Komilesprom, Krasnoyarsklesprom, Irkutsklesprom and Dal'lesprom.

Delivery discipline will undoubtedly become stronger, provided the delivery plans are made available to the local subunits in a timely manner. They must be released not by quarters, as is being done at the present time, but rather for a year as a whole, with a breakdown by quarters. It would seem that this is a basic truth. But here is what a check carried out at Permlesprom revealed: here the plan for deliveries was in general not made available to the subordinate enterprises.

Finally, direct and extended economic relationships must be developed to the maximum possible degree. The practice of such relationships convincingly proves their advantages and namely a high level of contractual discipline. And for our branch they are advantageous owing to the fact that they make it possible to attract interested consumers for the carrying out of cross-cutting work.

As you can see, delivery discipline is by no means an abstract concept. Yes, "mandatory subordination to an established system" is a very real and perceptible reserve. There remains only the need for achieving this "sense of obligation" in all sectors of the forestry complex.

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CSO: 1824/135

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