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ABSTRACTS FROM REFERATIVNYY ZHURNAL - BIOLOGIYA, No. 1, 1959

This report consists of complete translations of those entries in the Soviet Biology Abstracts Journal No. 1, 1959, which were originally published in the Sino-Soviet bloc and in Yugoslavia.

The Soviet subject classification system used in the original Russian language abstracts has been followed in this publication.

USSR/Soil Science - Soil Genesis and Geography.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1312

Author : Gerasimov, I.P.

Inst : Academy of Sciences USSR

Title : Geographical Observations in Japan

Orig Pub : Izv. AN SSSR, Ser, geogr., 1958, No 2, 54-63

Abstract : Results are rendered on field observations conducted by the author during an expedition organized for participants of the Regional Geographical Conference in southwestern districts of Japan (1957). Red and yellow podzolic soils occur here, developing under evergreen forest vegetation. The morphology of these soils was identical with the red and yellow podzolic soils of the Trans-Caucasus. Eroded kinds of soil predominated here, where signs of podzolization were weakly manifested. Paddy

Card 1/2

USSR/Soil Science - Soil Genesis and Geography.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1312

soils, which occurred on the lowlands, were systematically fertilized and were subjected to various ameliorations along with irrigation. These soils are distinguished by a great variety of kinds. Paddy soils could refer to a special class of "cultured" soils, i.e., experimentally created soils. A review is also given of characteristics of the soil of artificially drained sections of the sea coast (low fertile land), typical mountain-forest soils under mixed forests of deciduous and coniferous species with evergreen underbrush, and dark-colored soils under meadow vegetation on volcanic deposits. Volcanic ash-soil developed under normal moisture conditions under grassy vegetation. These belong to the black subtropical soil type. A more precise scheme is suggested for the soil-geographical districting of the Japanese territory.
-- P.V. Shramko

Card 2/2

USSR/Soil Science - Soil Genesis and Geography.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1313

Author : Wen Chen-Wang; Wang Ang-Ch'iu

Inst : Institute of Lithography, USSR

Title : Plan of District division of Soils of China

Orig Pub : V sb.: Fiz. geogr. rayonirovaniye Kitaya, M., Izd-vo in. lit., 1957, 104-130

Abstract : A plan, worked out by the Institute of Soil Districting of the Chinese Academy of Sciences, is presented for the soil district division of the Chinese territory. The following soil zones were set apart. An area of podzolic soil was designated on two districts because of the predominance in the deposit of turf-podzolic and swamp soils of northeastern China and mountain wood-podzolic and mountain-meadow soils of northeastern China, The

Card 1/2

USSR/Soil Science - Soil Genesis and Geography.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1313

chernozem soil zone was divided on an area of meadow, leached, carbonated black earth, and gray forest soils. The zone of chestnut soils included areas with a predominance of natural chestnut soils. In this zone there were also encountered brown, gray-brown, yellow-brown, and brown soils. In the zone of grown forest soils there prevailed mountain-forest brown, mountain turf-podzolic, mountain-meadow, and mountain-steppe soils. Alluvial soils were found here as well on lowlands of the Yantze and Yellow rivers. The zone of red and yellow soils united the area of yellow, red, laterite soils with the area of violet, Shauhsiang/? and paddy soils. In the zone of sierozem and desert-steppe soils there exist the desert-steppe and saline soils of Inner Mongolia, the saline soils and sands of the Tarim and Ala Shan desert, the sierozem of southern Dzungaria. -- S.A. Nikitin

Card 2/2

USSR/Soil Science - Soil Genesis and Geography.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1314

Author : Sokolov, N.N.

Inst : Central Museum of Soil Science, AS USSR

Title : Soil-Geomorphological Districting of Leningradskaya Oblast'

Orig Pub : Sb. rabot Tsentr. muzeya pochvovod. AN SSSR, 1957, vyp. 2, 102-112

Abstract : Within the boundaries of Leningradskaya Oblast' the following soil-geomorphological areas were distinguished: the Karelian Isthmus, the shore of Lake Ladoga, area of the Gulf of Finland and the Chucksce Sea, the Silurian plateau, western Leningrad Plain, the Volkhov (near Lake Ilmen) Lowland, Valdai Hills, area of Lake Onega. Agricultural areas generally coincided with the soil-geo-

Card 1/2

USSR/Soil Science - Soil Genesis and Geography.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1314

morphological regions and districts. Brief characteristics of each region are given, and some types of landscape adaptable to them are designated. -- F.N. Sofiyeva

Card 2/2

USSR/Soil Science - Soil Genesis and Geography.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1315

Author : Zamoriy, P.K.

Inst : Kiev University

Title : Buried Soils in Loess Stratum of the Ukrainian SSR

Orig Pub : Nauk. zap. Kiivs'k. unet, 1957, 15, No 10, 17-21

Abstract : In loess deposits of the Ukraine there were encountered buried chestnut soil, chernozem (south, middle, thick, and extra thick), gray forest soils, podzolic and meadow-bog soils. These types of soils had a regional as well as a latitudinal and vertical distribution and could serve as an excellent criterion for stratigraphic differentiation of loess strata and the study of the genesis of loess deposits.

Card 1/1

USSR/Soil Science - Soil Genesis and Geography.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1319

Author : Balyabo, N.

Inst : -

Title : Large-Scale Agricultural Soil Maps in Cotton Sowing Districts.

Orig Pub : Klopkovodstvo, 1958, No 3, 53-56

Abstract : A description is given of the principles of constructing large-scale maps and cartograms applicable to them for areas of cultivation of irrigated cotton plants.

Card 1/1

USSR/Soil Science - Soil Genesis and Geography.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1320
Author : Gavriilyuk, F.Ya.
Inst : -
Title : Soil Classification of Rostovskaya Oblast
Orig Pub : Pochvovedeniye, 1958, No 5, 71-77
Abstract : No abstract.

Card 1/1

POLAND/Soil Science - Soil Genesis and Geography.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1321
Author : Kawalkowski, A., Kowalinski, S., Krolikowski, L.,
Kuznicki, F., Kwinichidze, M., Musierowicz, A.,
Prusinkiewicz, Z.
Inst : -
Title : Natural Genetic Classification of Polish Soils
Orig Pub : Roczn. nauk rolniczych, 1956, D74, 96 s., I-XXIV mapy
Abstract : No abstract.

Card 1/1

USSR/Soil Science - Soil Genesis and Geography

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1322

Author : Popazov, D.I.

Inst : Moscow Agricultural Academy im. K.A. Timiryazev

Title : Some Mechanisms in the Development of Solonetz,
Solonchak, and Soloth Soils.

Orig Pub : Dokl. Mosk. s.-kh. akad. im. K.A. Timiryazeva, 1956,
vyp. 25, 230-236

Abstract : Consideration is given to the physical and chemical
(K.K. Gedroits) and biological (V.R. Williams) theories
of solonetz, solonchak processes of soil formation and
solodization of the soil. Soils of the droughty regions
are characterized to different degrees by the manifested
solonetz, solonchak, and solodized conditions of the soil.
Prevalence of one of these processes indicated only that

Card 1/2

USSR/Soil Science - Soil Genesis and Geography.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1322

the condition of soil formation is more pronounced in
this one direction than the other. In soil classifica-
tion it is necessary to take into account not only the
basic process (solonetz, solonchak formation, or solodi-
zation) but also the accompanying processes. -- S.A.
Nikitin

Card 2/2

USSR/Soil Science - Soil Genesis and Geography

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1323

Author : Martynov, V.P.

Inst : Siberian Division of the AS USSR

Title : Solonetz and Solodized Character of Some Soils in Irkutskaya Oblast'

Orig Pub : Izv. Sibirsk. otd. AN SSSR, 1958, No 2, 129-133

Abstract : It is assumed that some soils of Irkutskaya Oblast' which belong to the turf-podzolic soils are solodized; in connection with this a doubt is expressed as to the expediency of liming them. Results are presented on analyses of water extracts, alkaline (5% KOH) extracts, determination of humus, pH, absorbed cations, and CO₂ of the carbonates. -- V.S. Muratova

Card 1/1

USSR/Soil Science - Soil Genesis and Geography.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1324

Author : Bazhenov, N.K.

Inst : Academy of Sciences, Kirghiz SSR

Title : Gray-Brown Desert Soils Surrounding Western Issyk-Kul'

Orig Pub : Tr. Otd. pochvoved. AN KirgSSR, 1958, vyp. 7, 21-57

Abstract : A description is given of the conditions of soil formation and soil deposits around western Issyk-Kul'. The gray-brown soils predominating in this district are classified approximately according to species, subspecies, and varieties [this corresponds only roughly with series, types and places]; in addition there is taken into account the steppe and type of alkalinity of the soil, the depth of stratification of the salt horizon, the extent of the structural, and the mechanical composition. The

Card 1/2

Abs Jour : Ref Zhur Biol., No 1, 1959, 1324

morphology of the soil is described, and data is given on the determination of the mechanical composition, pH, humus content of the water-soluble salt, gypsum, CO₂ of carbonates, active forms of N, P, and K, and the state of the absorbed bases. Features of the described soils, which are similar to the gray-brown soil of Ust'-Urt Plateau and Mongolia, are noted. It is shown that cultivation of agricultural plants and woody plants is possible on the gray-brown soils surrounding Issyk-Kul'. --
V.S. Muratova

Card 2/2

Abs Jour : Ref Zhur Biol., No 1, 1959, 1325

Author : Gasanov, Sh.G.

Inst : AS Azerbaydzhan SSR

Title : Soils of Kazakhskiy Rayon and Their Agricultural Utilization

Orig Pub : Nauchn. konferentsii aspirantov AN AzerbSSR. Baku, AN AzerbSSR, 1957, 224-235

Abstract : In Kazakhskiy Rayon of Azerbaydzhan in the middle course of the Kura River there are brown forest and steppe gray-brown soils, carbonated chernozems, dark chestnut, chestnut solonetz, irrigated, meadow, incompletely developed), and meadow-bog soils. The brown forest, heavy clay soils are distinguished by a high carbonate content in the lower horizons (CO₂ -- 8 - 11.5%) and by a humus content

Card 1/2

Abs Jour : Ref Zhur Biol., No 1, 1959, 1325

of 7.9% in the upper horizons and 0.40% nitrogen. The brown steppe soils contain ~ 5% humus, 9.7 - 12.3% CO₂, 0.29% N. The latter are also highly fertile soils. The gray-brown soils contain 5 - 6% humus. The soils are suitable for vineyards. -- S.A. Nikitin

Card 2/2

Abs Jour : Ref Zhur Biol., No 1, 1959, 1326

Author : Obrejanu, Gr., Iancovici, Br., Maianu, Al., Stinga, N., Vintila, I.

Inst : Research Institute of Agriculture

Title : Agricultural-Soil Investigations in the Upper Basins of the Olt River

Orig Pub : An. Inst. cercetari agron., 1957, 24, No 5, 9-29

Abstract : The upper basin of the Olt River includes tributaries the Birsei, Gheorghe and Tirgu Secuiesc rivers. The conditions of soil formation are described. There are distributed here podzolic, brown forest, pseudo-rendzina chernozem, chernozem-like carbonated, and sandy weakly developed soils. The peculiarities of the distribution of these soils are discussed. A schematic map of the

Card 1/2

RUMANIA/Soil Science - Soil Genesis and Geography.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1326

soil area on a scale of 1:500,000 is given. -- P.V.
Shramko

Card 2/2

RUMANIA/Soil Science - Soil Genesis and Geography.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1327

Author : Florea, N.

Inst : -

Title : Soil Deposits in the Southern Pitesti Region (Rumania)

Orig Pub : Probl. agric., 1956, 8, No 11, 27-35

Abstract : The conditions of soil formation in the Pitesti region are discussed. Here there are distributed brown-red forest, podzolic soils, degraded chernozems and dark brown pseudo-gley forest soils, Consideration is given to the characteristics of distribution of these soils and possible ways of formation of the latter group of soils.

Card 1/1

USSR/Soil Science - Soil Genesis and Geography.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1328

Author : Gasanov, Sh.K.

Inst : AS Azerbaydzhan SSR

Title : Steppe-formation on the Mountain Forest Soils in the Basin of the Akstafa River.

Orig Pub : Izv. AN AzerbSSR, 1957, No 3, 99-109

Abstract : The described mountain forest soils are located on the foot hill stretch and on the lower slopes of the little Caucasus mountains and are covered by underbrush mixed with Christthorn Paliurus (Paliurus Spina-christi). The soils are marked by a high clay content, absence of clay in the middle part of the profile, extension of the humus horizon, carbonate content, and comparatively small proportions of $SiO_2:R_2O_3$; $SiO_2:Al_2O_3$; $SiO_2:Fe_2O_3$ in

Card 1/2

USSR/Soil Science - Soil Genesis and Geography.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1328

comparison with brown forest soils, which also confirms the absence of steppe soils in the described area. --
P.V. Shramko

Card 2/2

USSR/Soil Science - Soil Genesis and Geography.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1329

Author : Aliyev; Faradzheva

Inst : AS Azerbaydzhan SSR

Title : Distribution of Brown Forest Soils in Azerbaydzhan

Orig Pub : Dokl. AN AzerbSSR, 1957, 13, No 2, 183-186

Abstract : Brown forest soils are distributed in the arid part of the forest zone occupying Azerbaydzhan and the south-eastern part of the slopes of the Greater Caucasus Range. In the Talysh system these soils are encountered in the eastern stretch of the forest zone and in the arid part of the upper forest zone. Brown forest soils are marked by a high humus state, vigorous profile of neutral or alkaline reaction of the upper horizons and strong carbonate condition of the lower horizons, high saturation of

Card 1/2

USSR/Soil Science - Soil Genesis and Geography.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1329

absorbed bases, and clay content of the profile. --
P.V. Shramko

Card 2/2

USSR/Soil Science - Soil Genesis and Geography

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1330

Author : Afanas'yev, G.V., Lyakhov, A.I.

Inst : Moscow Agricultural Academy in. K.A. Timiryazev

Title : Characteristics of Bottom Land Soils of the Northern Dvina River

Orig Pub : Dokl. Mosk. s.-kh. akad. in. K.A. Timiryazeva, 1957, vyp. 31, 259-264

Abstract : In bottom lands of the northern Dvina River and its tributaries within Kholmogorskiy and Eletskiy Rayons of Arkhangel'skaya Oblast' there are located stratified alluvial sands (weakly touched by processes of soil formation), turf of diverse textures, and turf-meadow and muck-bog soils. Turf-meadow loam and clay soils predominate. The pH of the soil solution was 5.8 - 6.5;

Card 1/2

USSR/Soil Science - Soil Genesis and Geography.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1330

hydrolytic acidity was 0.65 - 1.07 mEq, milliequivalents, saturation of absorbed bases 98 - 98%, humus content 4.1 - 5.7%, P_2O_5 12, K_2O 10.5 - 5.5, N 8.4 mg on 100 g of soil. Characteristic morphology of the soils is also noted. -- L.R. Asmayev

Card 2/2

USSR/Soil Science - Soil Genesis and Geography.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1332

Author : Nadezhdin, B.V.

Inst : Eastern Siberian Affiliate AS USSR

Title : Pine Forest Soils of Southern Part of Irkuskaya Oblast'

Orig Pub : Tr. Vost.-Sib. fil. AN SSSR, 1957, vyp. 5, 61-115

Abstract : In Ziminskiy and Tulunskiy Rayons of Irkuskaya Oblast' a study was made of soils formed under the influence of low relief, brisk continental climate, grassy or mossy pine forests with admixture of larches, birches, and aspens. The soil-forming rocks are composed of alluvial and diluvial sands, sandy loams, average and heavy loam, and later Cambrian sandstone. All layers are poor in silicon and rich in primary minerals. The richness of the layers in bases, the small amounts of precipitation

Card 1/2

USSR/Soil Science - Soil Genesis and Geography.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1332

(~400 mm annually), and the grassy vegetative cover prevent development of the podzolic-forming process. The author isolated 3 groups of soil: 1. Dark gray and gray forest soils of varying degrees of podzolic content. In comparison with European soils they were characterized by a higher humus content, less width of the humus horizon, and less podzol content. 2. Weakly podzolic soils of light mechanical consistency. They were marked by a deficiency of Al and an accumulation of Fe in the upper horizons. The latter feature connects them with brown forest soils. 3. Turf-podzolic soils. They were distinguished by a marked loss of bases and sesquioxides from podzolic horizons. This loss of biogenic accumulation was not compensated. Gray forest soils can form under recent vegetation at the same time that turf-podzolic soils are forming under dark coniferous mossy taiga which previously covered the investigated territory. -- T.A.

Rode

Card 2/2

POLAND/Soil Science - Soil Genesis and Geography.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1334
Author : Lazar, J.
Inst : -
Title : Soils in the Vicinity of the City of Zywiec.
Orig Pub : Roczn, nauk rolniczych, 1957, A76, No 1, 65-105

Abstract : Conditions of soil formation and characteristics of the soil-vegetative cover are reported on the western Beskids mountains in the area of the city of Zywiec (Poland). In the low mountain zone and on the slopes there were spread skeletal brown soil, podzolic, alluvial and gray-brown cultivated soils. Above 1000 m there were mountain-meadow soils. Examples are given for the agricultural utilization of the soils. -- P.V. Shranko

Card 1/1

USSR/Soil Science - Soil Genesis and Geography.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1337
Author : Pershina, M.N.
Inst : Moscow Agricultural Academy im. K.A. Timiryazev
Title : Soil-Forming Processes in the Arid Steppe Area.
Orig Pub : Dokl. Mosk. s.-kh. akad. im. K.A. Timiryazeva, 1956, 1, No 26, 51-55
Abstract : No abstract.

Card 1/1

BULGARIA/Soil Science - Soil Genesis and Geography

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1339
Author : Naumov
Inst : -
Title : Soil Conditions in Areas Under Poplar Plantations
Orig Pub : Gorskò stopanstvo, 1958, 14, No 2, 26-30
Abstract : No abstract.

Card 1/1

USSR/Soil Science - Soil Genesis and Geography.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1340
Author : Usik, L.Ye.
Inst : Chkalov State Pedagogical Institute
Title : Soil Cover at the Virgin Soil "Adamov" Grain Sovkhoz in Adamovskiy Rayon of Chkalovskaya Oblast'
Orig Pub : Uch. zap. Chkalovskiy gos. ped. in-t, 1957, vyp. 10, 147-176
Abstract : No abstract.

Card 1/1

USSR/Soil Science - Soil Genesis and Geography.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1341

Author : Kozlova, I.S.

Inst : Kirghiz Agriculture Institute

Title : Soils of the Lower Part of the Sloping Plain Along the
Chu River Valley

Orig Pub : Tr. Kirg. s.-kh. in-ta, 1957, vyp. 10, No 1, 105-108

Abstract : No abstract.

Card 1/1

USSR/Soil Science - Soil Genesis and Geography.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1342

Author : Lobanov, A.P.

Inst : -

Title : Lowland Soils in the Far North

Orig Pub : Pochvovedeniye, 1956, No 12, 78-79

Abstract : No abstract.

Card 1/1

USSR/Soil Science - Soil Genesis and Geography

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1343
Author : Stobe, G.
Inst : -
Title : The Most Widely Distributed Forest Soils of Latvian SSR
Orig Pub : Augsne on Raza. Riga, Pochva i urozha. Riga, 1956, 5,
67-81
Abstract : No abstract.

Card 1/1

CZECHOSLOVAKIA/Soil Science - Soil Genesis and Geography.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1346
Author : Pelisek, Josef
Inst : -
Title : Characteristics of Soil Deposit in Dobroych Primeval
Forest (Czechoslovakia)
Orig Pub : Ochrana prirody, 1957, 12, No 5, 140-143
Abstract : No abstract.

Card 1/1

USSR/Soil Science - Physical and Chemical Properties of Soil.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1352

Author : Shilova, Ye.I., Kreyyer, K.G.

Inst : -

Title : Carbon Dioxide in Soil Solution and Its Role in Soil Formation

Orig Pub : Pochvovedeniye, 1957, No 7, 65-72

Abstract : Soil solutions were studied on podzolic soils (arable and virgin soil) at the "Ruch'i" Sovkhoz and at Siverek Experimental Forest in Leningradskaya Oblast'. Serrated lysimeters, which completely kept out atmospheric air, were used to extract the solutions. The concentration of CO₂ in the solution reached 200 - 300 mg/liter. Total acidity of the solution was determined almost always according to the CO₂ content. In the period of excessive soil dampness the carbon dioxide regime was an important element in soil formation, because it generated a

Card 1/2

USSR/Soil Science - Physical and Chemical Properties of Soil.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1352

loss in the bases. The reaction of the soil solution always remained less acid than the reaction of the soil. The author's work refers this phenomenon to the loss of CO₂ from the solution in the process of analysis. --
T.A. Rode

Card 2/2

Abs Jour : Ref Zhur Biol., No 1, 1959, 1354

Author : Breshkovskiy, P.M.

Inst : -

Title : Accelerated Determination of the Soil Moisture by a Pressure Method

Orig Pub : Pochvovedeniye, 1957, No 8, 79-85

Abstract : A method of determining soil moisture by means of wet compression is described. A weighed portion of soil a_1 with unknown moisture W was moistened on a package of filter paper and then compressed. After compression the weight of soil a_2 was determined. Moisture was calculated according to the formula $W = \frac{a_1(100 + n)}{a_2} - 100$,

where n is the maximal molecular moisture capacity (MMC), determined by the compression method by means of dampening the soil on the filter. The absolute error in the

Card 1/2

Abs Jour : Ref Zhur Biol., No 1, 1959, 1354

interval of measuring the moistness of 5.77 - 53.7% consisted of 1.17 to -1.17%. By the dry compression method the known portion of soil (4 g) was maintained under pressure of 66 kg/cm² for ten minutes between the packages of filter paper. The unknown moisture was determined according to the weight of the soil specimen after compression using a calibrated graph drawn earlier. In the moisture interval of 5.7 - 36.6% the absolute error was equal to -0.2 to 0.8%. The wet compression method was applied at any interval of wetness, the method of dry compression was used practically from hygroscopic moisture to complete water capacity. The calibrated curve required periodic correction during the vegetative period.
-- Ye.A. Dmitriyev

Card 2/2

USSR/Soil Science - Physical and Chemical Properties of Soil.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1355

Author : Zenin, A.A.

Inst : Moscow Agriculture Academy in. K.A. Timiryazev

Title : Some Data on Investigation of Water-Physical Properties of Virgin Chestnut Soils of the Left Bank of the Ural River in Western Kazakstanskaya Oblast'

Orig Pub : Dokl. Mosk. s.-kh. akad. in. K.A. Timiryazeva, 1957, vyp. 31, 235-240

Abstract : Results are presented of a moisture study of dark chestnut and chestnut soils on the grounds of Ak-Su Sovkhoz in Terkinskiy Rayon of western Kazakstanskaya Oblast' (1955-1956). Absence of productive moisture in these soils in the summer period caused the vegetation to become scorched. Prevalence in the soils of rising

Card 1/2

USSR/Soil Science - Physical and Chemical Properties of Soil/

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1355

currents of soil moisture and the intermittent character of the biological processes in the soil confirmed, in the opinion of the author, a strong manifestation of the steppe process of soil formation in this district. --
P.V. Shramko

Card 2/2

USSR/Soil Science - Physical and Chemical Properties of Soil

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1359

Author : Reintam, L.

Inst : Estonian Agriculture Academy

Title : Determination of Exchangeable Bases and Absorption Capacity in Humus-Illuviol Horizons

Orig Pub : Sb. nauchn. tr. Est. s.-kh. akad., 1956, 2, 46-53

Abstract : Exchangeable bases were either absent or very sparse in the humus-illuvial horizons of wood-podzolic soils of Estonia. 0.1 N solution of HCL was acidified by soluble humic acids. Therefore, by Kappen's and Bobko-Askinazy's methods significant deviations were found in the given determinations of exchangeable bases which amounted to 0.67 mEq.

Card 1/1

HUNGARY/Soil Science - Physical and Chemical Properties of Soil.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1362

Author : Mate Ferenc; Molnar, Ferenc

Inst : -

Title : Study of the Fixation of Phosphates in Meadow Soil Using Phosphorus Isotope P32

Orig Pub : Agrokoz. es talaj., 1956, 5, No 2, 165-170

Abstract : No abstract.

Card 1/1

HUNGARY/Soil Science - Physical and Chemical Properties of Soil. J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1363

Author : Gerei, Lazslo

Inst : -

Title : Content of Mobile Compounds of Iron and Aluminum in
Some Soils of Hungary

Orig Pub : Agrokn. es. talaj., 1956, 5, No 2, 171-182

Abstract : A study is presented on the content of mobile forms of Fe and Al in chernozen, podzolic, brown forest, turf wood-carbonate meadow, bog, and solonetz soils. Soluble forms of Fe and Al were determined using 0.05 N H₂SO₄ and 1 N complexon (trilin B) + 1 N KCl. It was noted that the dynamics of the mobile forms of Al depended mainly on the reaction of the soil solution; the presence of aerobic or anaerobic conditions in the soil was of the utmost importance for Fe. The work was accomplished at the Budapest University. -- P.V. Shranko

Card 1/1

USSR/Soil Science - Physical and Chemical Properties of Soil. J

Abs Jour : Ref Zhur Biol., N 1, 1959, 1368

Author : Kovrigo, V.P.

Inst : Izhevsk Agricultural Institute

Title : Conditions of Humus Storage in Soils.

Orig Pub : Materialy nauchn. konferentsiy Izhevskiy, s.-kh. in-t, vyp. 2, Izhevsk. 1958, 77-81

Abstract : Energy of decomposition of vegetative residues in the soil can be lowered when oxidizing processes prevail in it, and this is achieved by a temporary moistening of the soil. A liberal wetting of vegetative residues as soon as the plants had withered consequently impeded their aerobic decomposition and mineralization if oxidizing processes predominated, and this led to an accumulation of humus in the soil. -- M.L. Yaroshenko

Card 1/1

Abs Jour : Ref Zhur Biol., No 1, 1959, 1369
Author : Galstyan, A.Sh.
Inst : AS Armenian SSR
Title : Influence of Catalase Activity in the Soil
Orig Pub : Dokl. AN ArmSSR, 1957, 25, No 5, 261-265

Abstract : It is shown that catalase activity in the soil decreases with the placement of organic and mineral fertilizers. This is associated with an increase of nitrate, phosphate, and chloride anions in the soil. Cations do not exhibit any blocking action. Catalase activity cannot serve as an indicator of biologic activity in the soil.
-- G.N. Nesterova

Card 1/1

Abs Jour : Ref Zhur Biol., No 1, 1959, 1370
Author : Galstyan, A.Sh.
Inst : AS Armenian SSR
Title : Enzymatic Activity of Some Types of Armenian Soil
Orig Pub : Dokl. AN ArmSSR, 1958, 26, No 1, 29-32

Abstract : Leached and mountain black earth soils were characterized by the highest enzymatic activity (7.8 - 5.3 mg of N), and the least activity was shown by light chestnut and cultivated irrigated soils (0.50 - 0.53 mg of N to 1 g of dry soil). Urease activity was lowered along the soil profile, and it was not observed in deep horizons. The application of mineral fertilizers with manure increased urease activity 2 -3 fold. The greatest activity was observed in the rhizosphere of alfalfa,

Card 1/2

USSR/Soil Science - Physical and Chemical Properties of Soil.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1370

while in the winter wheat rhizosphere it was comparatively low. -- A.M. Smirnov

Card 2/2

USSR/Soil Science - Physical and Chemical Properties of Soil

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1372

Author : Kamarov, B.N.

Inst : AS USSR

Title : Change in Soil Respiration and Carbon Dioxide Content in Surface Layer of Air in Twenty-Four Hours

Orig Pub : Dokl. AN SSSR, 1958, 118, No 2, 389-291

Abstract : In turf-podzolic and drained peat-bog soils in daytime hours 1.5 - 2.0 times more carbon dioxide gas was liberated than during the nighttime. The CO₂ content in the surface layer of air (25 - 40 cm from upper soil) was sharply decreased with a minimum in 12 hours, and after 18 hours it rose noticeable. Observations were conducted in Bronnitskiy and Dmitrovskiy Rayons, Moskovskaya Oblast'. -- G.N. Nesterova

Card 1/1

USSR/Soil Science - Physical and Chemical Properties of Soil. J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1373

Author : Seyfert, Yaromir

Inst : -

Title : Utilization of Florescent Microscopy in Soil Microbiology

Orig Pub : Pochvovedeniye, 1958, No 2, 50-54

Abstract : A technique is described for the determination of the number of bacteria in the soil using florescent microscopy. It was established that there were more microorganisms present in soil under birch groves than under spruces and grassy vegetation. Birch plantations enhanced the nitrification process in the soil. Soil under the oak pushistym was richer in microorganisms than soils under the vegetative groups: Lathyrus versicolor - Festuca grauca and Quercetum carpinetum. -- G.N. Nesterova

Card 1/1

HUNGARY/Soil Science - Fertilization. Mineral Fertilizers. J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1375

Author : Gaspar, Laszlo; Vegh, Marta; Szalai, Dezsone; Gaspar Laszlonge

Inst : Hungarian Academy of Sciences

Title : Experiments on the Preparation and an Investigation of the Effects of a Slow Acting Nitrogen Fertilizer, "Ureaform"

Orig Pub : Magyar tud. akad. agrartud. oszt. kozl., 1957, 13, No 1-2, 113-128

Abstract : Ureaform was prepared by the following method; 3 gram-molecules of crystalline carbamide was dissolved in 1 liter of water, the reaction of which was preliminarily brought up to a pH of 3.6 at a temperature of 25 degrees with citric acid and sodium diphosphate. The solution

Card 1/2

HUNGARY/Soil Science - Fertilization. Mineral Fertilizers.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1375

was mixed with 37% formaldehyde so that there was 1 molecule of formaldehyde to 1.625 gram-molecules of carbamide. The solution was adjusted to a pH of 3.6 with a buffer solution. After twenty-four hours the white precipitate was filtered, washed with water, and desiccated. Field experiments were conducted on liam soils of a humus-carbonate type. The test plant was corn for green fodder. It was found that the decomposition of ureaform was negligible, the action of nitrogen low, and the harvest was not increased. The quality of the green fodder was raised. An increased harvest was observed on test fields where ureaform was applied in combination with ammonium fertilizer. --
A.A. Vizauer

Card 2/2

GDR/Soil Science - Fertilization. Mineral Fertilizers.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1383

Author : Lehne, I.

Inst : -

Title : Fertilizing Action of Alkaline Phosphate Slag

Orig Pub : Dtsch. Landwirtschaft., 1958, 9, No 1, 28-29

Abstract : Alkaline phosphate slag was produced in GDR by the process of melting Kol.skiy apatite concentrate with sodium carbonate, sand, and pulverized limestone at a temperature of 1150 degrees with subsequent pulverization to the size of cement particles. It contained 20% P_2O_5 dissolved in citric acid and 40% limestone. In vegetative experiments on a background of NK for the direct effect on oats and for the later effect on mustard on sand, sandy loam, and soils poor in phosphorus, the alkaline phosphate slag was more similar to Thomas slag in its effectiveness on the harvest and assimilability of

Card 1/2

GDR/Soil Science - Fertilization. Mineral Fertilizers.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1383

P_2O_5 by the plants, but in small and average doses it was somewhat more effective than P_c . Investigations were conducted at the Institute of Agriculture and Plant Cultivation of the German Academy of Agricultural Science. -- T.B. Beus

Card 2/2

USSR/Soil Science - Fertilization. Mineral Fertilizers.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1384

Author : Mironenko, A.V.

Inst : Institute of Biology, AS Belorussian SSR

Title : Influence of Granulated Superphosphate on Harvest of Fodder Lupine and Its Accumulation of Protein Substances

Orig Pub : Byul. In-ta biol. AN BSSR, vyp. 2, 1956 (1957), 149-152

Abstract : According to results of experiments of the Institute of Biology of AN of Belorussia SSR on sand and peat soils of Belorussia, granulated P_c proved to have a more effective action than powdered on increased harvest of the green roughage and seeds of yellow fodder lupine, on an accumulation of protein substances, and on a shortening of the vegetative period. -- N.N. Sokolov

Card 1/1

USSR/Soil Science - Fertilization. Mineral Fertilizers.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1391

Author : Chumachenko, I.N., Korniyenko, V.S.

Inst : -

Title : Effectiveness of Phosphorus Fertilizer in Relation to the Saturation of the Soil with Phosphates.

Orig Pub : Udobreniye i urozhay, 1958, No 2, 25-30

Abstract : Experiments conducted on sierozems of Middle Asia (Uzbekistan SSR) showed that effectiveness of phosphorus fertilizers applied on a background of nitrogens depended on the amount of mobile P in the soil. In a vegetative experiment phosphorus fertilizers increased the harvest of cotton wool in containers with a small amount of available P in the soil (20 mg of P_2O_5 per kg of soil) by 15.5 g to a container and decreased it in variants with a high amount of mobile P in the soil (50 mg of P_2O_5 per kg of soil) by 8.3 - 9.6 g to a container

Card 1/2

USSR/Soil Science - Fertilization. Mineral Fertilizers.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1391

in comparison with harvest in containers where only N was introduced. In field experiments the application of phosphorus fertilizers (40 - 80 kg/hectare of P_2O_5) increased the number of pods by 1.7 - 1.8 on one plant and the cotton crop by .85 - 7.26 centner/hectare on plots with a low content of available soil P (20 mg of P_2O_5 per kg of soil) and decreased these indicators (number of pods by 0.5 - 1.8 to one plant and the harvest by 3.74 - 4.48 centner/hectare) on plots with a high content (60 mg of P_2O_5 per kg of soil) of mobile P in the soil in comparison with the harvest from plots where only N was introduced. On plots having a low content of mobile P, phosphorus fertilizers contributed toward a more intense intake of N and P in cotton plants in almost all periods of vegetation. -- O.P. Medvedeva

Card 2/2

USSR/Soil Science - Tillage. Amelioration. Erosion.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1404

Author : Belousov, A.S.

Inst : Azerbaydzhan Scientific Research Institute of Cotton Raising

Title : Problem of Plowing Without a Moldboard

Orig Pub : Byul. nauchno-tekhn. inform. Azerb. n.-i. in-ta khlopkovodstva, 1957, No 2, 59-62

Abstract : Application of moldboardless plowing on 35 - 45 cm in Azerbaydzhan gave excellent results only on heavily tilled lands of heavy texture after a perennial grass cover, some decrease in cotton productivity was noted subsequently. Experiments were conducted on light chestnut soils of the Central Experimental Station of the Azerbaydzhan Scientific Research Institute of Cotton Raising and on

Card 1/2

USSR/Soil Science - Tillage, Amelioration. Erosion.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1404

a heavy sierozem crust of Shirvan zonal station.

Card 2/2

USSR/Soil Science - Tillage. Amelioration. Erosion.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1405
Author : Sinel'nikov
Inst : -
Title : Methods of Basic Soil Treatment
Orig Pub : S. kh. Tadzhikistana, 1957, No 9, 52-55

Abstract : On non-irrigated fields with dark sierozems in Gissar valley common plowing to a depth of 25 cm provided the best water-air regime for soils and a greater accumulation of nitrates in the soil (2.2 - 7.6 kg/hectare) compared with deep plowing without a moldboard. The contamination in fields treated with common plowing was less. The harvest on fields with common plowing was 3.5 centner higher with wheat, 24.2 with corn, and 2.3 centner/hectare with Sudan grass (hay) in comparison with deep plowing without a moldboard. -- S.A. Nikitin

Card 1/1

USSR/Soil Science - Tillage. Amelioration. Erosion.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1406
Author : D'yakonova, A.A.
Inst : Eastern Affiliate Academy of Science, USSR
Title : Change in Some Physical and Chemical Properties of Virgin Black Soils with Their Treatment.
Orig Pub : Izv. vost. fil. AN SSSR, 1957, No 3, 126-134

Abstract : Investigations were conducted in the vicinity of Barnaul on 2 fields containing an 8-field vegetable-grassland crop rotation: oats and grasses, grasses, grasses, cucumbers and tomatoes, cabbage, plants with edible roots, beans, and potatoes. Observations were conducted on common chernozems according to the rotation of the bed and in the field which was the last in the crop rotation. In the arable horizon of worked soils in

Card 1/2

USSR/Soil Science - Tillage. Amelioration. Erosion.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1406

comparison with virgin soils, there was observed an increase in the total weight of 6-7% and 1.5 - 2.5% in specific weight. In reference to pulverizing and compacting of the soil, the porosity of the arable horizon decreased 3% and 4.2% in the subarable. Maximal hygroscopicity decreased by 11.5% and the amount of moisture inaccessible for plants by 1 - 4%. The reserves of available moisture in 1 m layer of worked chernozem consisted of 1268.2 and 1369.6 m³/hectare, and on virgin soil 721.6 m³/hectare. On fields with oat crop rotation the amount of unavailable moisture in 1 m layer of soil proved greater than on fields under grain cultivation. The amount of humus in worked chernozem horizons decreased 0.48% in comparison with virgin soils, N by 12.5 - 15%, and total absorbed bases by 8%. Ca in crop rotated soils was lowered due to its loss with the plant harvest.
-- S.A. Nikitan

Card 2/2

USSR/Soil Science - Tillage. Amelioration. Erosion.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1407

Author : Sapozhnikov, N.

Inst : -

Title : Nature of Spring Soil Treatment in Leningradskaya Oblast'

Orig Pub : Za bysokuyu kul'turu s. kh., 1957, vyp. 1, 11-13

Abstract : For the clay, heavy, and medium loam soils in Leningradskaya Oblast' it is recommended that the soils be broken up a little in the spring instead of being subjected to a full plowing; that the bed be plowed with a colter plow instead of disking. On deeply porous soils in the spring and with additional sowing of grasses a roller should be used. Under furrowed plants it is expedient periodically (once every 3 - 4 years) to break up the subarable layer down to 30 - 35 cm. -- F.I. Shcherbak

Card 1/1

USSR/Soil Science - Tillage. Amelioration. Erosion.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1408

Author : Dimo, N.A.

Inst : -

Title : Fissure Treatment of Soil

Orig Pub : Agrobiologiya, 1957, No 2, 101-104

Abstract : The general importance of fissure treatment of the soil and agricultural machines applied for fissures were studied briefly. Two special machines for fissure treatment of the soil were constructed and tested in 1950 and 1953 by the author and the engineer N.N. Kaz'yanov. --
F.N. Sofiyeva

Card 1/1

USSR/Soil Science - Tillage. Amelioration. Erosion.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1409

Author : Mikhaylyuk, I.

Inst : -

Title : In Defense of Mal'tsev's Agricultural Techniques

Orig Pub : S. kh. Sibiri, 1958, No 1, 14-18

Abstract : No abstract.

Card 1/1

USSR/Soil Science - Tillage. Amelioration. Erosion.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1410

Author : Yermakov, V.

Inst : -

Title : Treatment of Alkaline Soils in Kurganskaya Oblast'

Orig Pub : S. kh. Sibiri, 1958, No 1, 19-23

Abstract : No abstract.

Card 1/1

USSR/Soil Science - Tillage. Amelioration. Erosion.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1411

Author : Kotsyuba, T.Ya.

Inst : -

Title : Fallow and Deep Moldboardless Treatment in the North

Orig Pub : Zemledeliye, 1958, No 5, 39-40

Abstract : No abstract.

Card 1/1

USSR/Soil Science - Tillage. Amelioration. Erosion.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1412

Author : Rubilin, Ye.V., Trofimeko, K.I.

Inst : Severo- Osetinsk Agricultural Institute

Title : Soil Amelioration Characteristics of the Land Used by
the Kolkhozes of Kizlyar

Orig Pub : Tr. Severo-Osetinsk. s.-kh. in-ta, 1956, 17, 13-37

Abstract : The described territory is presented as a poorly drained plain, at several points undrained, composed of river and lake-estuary deposits. The latter were usually salty. The depth of the ground waters was 10 - 300 cm. Soils here were formed under conditions of excessive ground moisture. Through indications of agricultural productivity there were isolated meadow solonchak soils, meadow-bog solonchak and alluvial soils weakly touched

Card 1/2

USSR/Soil Science - Tillage. Amelioration. Erosion.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1412

by soil formation, meadow-bog solonchak soils, bog solonchak soils, and solonchak soils. The morphology and some physical-chemical properties of the soils are described. Meadow solonchak soils were the best in the investigated territory. -- G.V. Zakhar'ina

Card 2/2

USSR/Soil Science - Tillage. Amelioration. Erosion.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1413

Author : Pak, K.P.

Inst : Timiryazev Agricultural Academy

Title : Ways of Increasing the Fertility of Solonetz Soils

Orig Pub : Izv. Timiryazevsk. s.-kh. akad., 1957, No 5, 63-90

Abstract : Experiments have been conducted since 1935 at Malo Uzen' base on average columnar solonetz soils, where CaCO_3 was found at a depth of 30 cm. Best results were obtained with deep treatment of the soil (plowing to a depth of 35 cm with subsoil plowing to 15 cm). Deep plowing contributed toward a reduction in the alkalinity of the soils, formation of a more extensive spread of the root area, increase in porosity and water permeability of the soils, and general improvement of

Card 1/2

USSR/Soil Science - Tillage. Amelioration. Erosion.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1413

their physical properties. The arable layer was enriched by colloids and CaCO_3 from the deep horizons of the soil, which improved the water-air and nutrient regime of the soil and increased the CO_2 content. A suggested system of agrotechnical measures for the rapid utilization of alkaline soils includes a method of soil treatment, sowing of perennial grasses, application of fertilizer, and a plan for water conservation.
-- N.G. Minashina

Card 2/2

USSR/Soil Science - Tillage. Amelioration. Erosion.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1416

Author : Zharova, K.

Inst : -

Title : Distribution of Temporary Irrigating System on Large Slopes

Orig Pub : S. kh. Kirgizii, 1957, No 10, 18-26

Abstract : It is recommended that the installation of temporary irrigating systems in the foot hill districts of Kirgiz be accomplished on the basis of a topographical survey taken before the first irrigation. The depth of the excavations on slightly irrigated soils should not exceed 15 cm, and 20-30 cm on more irrigated soils. -- S.A. Nikitin

Card 1/1

USSR/Soil Science - Tillage. Amelioration. Erosion.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1417

Author : Bonchenko, V.I.

Inst : AS USSR

Title : Subsoil Mole-Drain Irrigation and the Influence of Artificial Mole-Ditches on Soil and Plants.

Orig Pub : V sb.: Biol. osnovy oroshayem. zemled. M., AN SSSR, 1957, 91-104

Abstract : It was shown that irrigation of fields using mole-ditches placed at a depth of 40 - 50 cm with a plow with a distance of 55 - 100 cm between them, was effective insofar as there was an increase in the moisture supply in the soil, improvement of its water-air regime, and rational utilization of soil moisture by the plants. Mole-drains had a favorable influence on

Card 1/2

USSR/Soil Science - Tillage. Amelioration. Erosion.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1417

the activity of microorganisms and accumulation in the soil of nitrates and assimilable P. Storage of assimilable P reached 11 - 12 mg on 1 kg of dry soil; the crop of agricultural plants increased 120-148% with no-drain irrigation in comparison with the control. The experiments were conducted in Rostovskaya Oblast'. -- S.A. Nikitin

Card 2/2

USSR/Soil Science - Tillage, Amelioration. Erosion.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1418

Author : Borodin, N.N.

Inst : Zernograd State Selection Station

Title : Meteorological Conditions and Soils of Irrigated Sections.

Orig Pub : Sb. nauchn. rabot. Zernogradsk. gos. selekts. st., 1957, vyp. 2, 190-193

Abstract : Experimental irrigated sections were located on the 2nd terrace of the Manych river in the locality of the Vesel farm (Rostvoskaya Oblast'). Results are presented of determinations of the physical properties of irrigated chernozem-meadow Solonchak soils and Cis-Caucasian carbonate chernozems.

Card 1/1

HUNGARY/Soil Science - Tillage. Amelioration. Erosion.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1419

Author : Osvath, Janos

Inst : -

Title : Soil Moisture and Water Permeability

Orig Pub : Agrokoz. es talaj., 1957, 6, No 4, 321-336

Abstract : At the Agricultural Institute of the Hungarian Academy of Sciences at Martonvasar a study was made of the optimal conditions for irrigation of non-saline soils. Results are presented on the determinations of water permeability of the soil, the start and duration of the irrigation, and an estimation of optimal norms for the sowing of some agricultural plants.

Card 1/1

HUNGARY/Soil Science - Tillage, Amelioration. Erosion.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1420

Author : Jankevici, Bruno; Mainau, Alexandru

Inst : -

Title : Prospects of Soil Melioration in the Rumanian Peoples's Republic

Orig Pub : Agrokoz. es talaj., 1957, 6, No 4, 363-368

Abstract : No abstract.

Card 1/1

USSR/Soil Science - Tillage. Amelioration. Erosion.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1424

Author : Ivanov, P.

Inst : -

Title : Soil Erosion and Control Methods in Moldavia

Orig Pub : Zemledeliye i zhivotnovodstvo Moldavii, 1957, No 6,
14-20

Abstract : Soil erosion has damaged about 75 percent of the arable land in Moldavia. About 250 thousand hectares of this are badly eroded. To control the soil erosion processes it is recommended that cross plowing on slopes, forest planting and protective herb-strip sowing be applied. To retain precipitation which has fallen on the fallow fields strip tilling at every 10 meters should be used. It is best to protect the fallows with buffer strips. The fields which are freed from early crops might well be utilized for stubble and under-sown

Card 1/2

USSR/Soil Science - Tillage. Amelioration. Erosion.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1424

crops. Dense sowing on slopes should be made crosswise and in tight rows. Terracing should be used on slopes which are 12-25° steep. Slopes more than 25° are much better off when occupied with tree stands. It is reasonable to have contoured stands on slopes inclined 5-12° in which the rows of plantings are arranged along the basic horizontal lines, while following the curvature of the slope. -- S.A. Nikitin

Card 2/2

USSR/Soil Science - Tillage, Amelioration. Erosion.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1426

Author : Lysak, G.N.

Inst : -

Title : Wind Erosion of the Soil

Orig Pub : Zemledeliye, 1958, No 2, 53-56

Abstract : In the steppe regions of Bashkiria the destruction of plantings through wind blowing of the fine-grained soil is seen nearly annually. One recommends forest shelter-belts with buffer strips of perennials, sunflower stubble strips, plowing without turning over the surface while leaving the stubble, as well as snow-retention measures. -- F.N. Sofiyeva

Card 1/1

BULGARIA/Soil Science - Tillage. Amelioration. Erosion.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1429

Author : Biolchev, As., Pimpirev, P., Georgiyev, A.

Inst : Soil Institute, AS Bulgaria

Title : Soil Erosion in Bulgaria

Orig Pub : Izv. Pochv. in-t, B"lg. AN, 1957, 4, 203-253

Abstract : No abstract.

#1471

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Card 1/1

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