O‘ZBEKISTON ZAMINI

ISSN 2181-9955

Ilmiy-amaliy va innovatsion jurnal

4/2019

O‘ZBEKISTON ZAMINI
(«Земля Узбекистана»)
Илмий – амалий ва инновацион журнал

2019 йил
4 - сон

МУАССИС:
Давергеодезкадастр қўмитаси
“Ўздаверлойиҳа” давлат илмий лойиҳалаш институти

Журнал 2019 йил апрель ойидан чиқа бошлаган

Обуна индекси: 1356

МУНДАРИЖА

ГЕОДЕЗИЯ, КАРТОГРАФИЯ ВА КАДАСТР

Тожибаев К.Ш., Шомуродов Х.Ф., Шарипова В.К. *Биохилма-хилликни сақлаш ва ундан барқарор фойдаланишда давлат кадастрини юритишнинг аҳамияти* 2

Алиназаров Б.А., Эгамбердиев А.А., Абдурахмонов С.Н., Бердиев Д.Ф. *Демографик жараёнларнинг маълумотлар базасини интеграциялашда гат ва картографик методнинг ўрни* 4

ЕР ТУЗИШ, ЕР МОНИТОРИНГИ ВА ЕРЛАРДАН САМАРАЛИ ФОЙДАЛАНИШНИ ТАШКИЛ ЭТИШ

Фармонов Т.Х., Мурадов Р.А. *Подходы по снижению деградации пастбищных экосистем* 6

Бабажанов А.Р., Тожиев З.Т., Икромхўжаев Г.Х. *Ўзбекистонда ер бозорини шакллантириш ва ривожлантиришнинг асосий хусусиятлари* 13

Шерматов О., Исламова Д. *Қишлоқ хўжалигида ер ресурсларидан самарали фойдаланиш масалалари* 15

Алиқулов Ғ.Н., Ғофиров М., Усмонов Ж.З. *Қашқадарё вилояти шароитида ер муносабатларида учрайдиган айрим муаммолар ва уларнинг ечими* 17

Тўхташев Ҳ.И. *Ер участкаларини хусусийлаштиришнинг ҳуқуқий асослари* 19

ТУПРОҚШУНОСЛИК, АГРОКИМЁ, ЭКОЛОГИЯ ВА АТРОФ-МУҲИТ МУҲОФАЗАСИ

Nurbekov A., Khudaykulov J., Ravshanova N., Chulliev A., Rakhimova D. *Effect of tillage methods on productivity of winter wheat in the irrigated conditions of kashkadarya valley* 24

Хакбердиев О.Э. *Природные условия и характеристика эродированных почв аридной зоны* 27

Мустанов С.Б., Умурзоқова У Э. *Тупроқ агрокимёвий таркибига нўхат ўсимлигининг таъсири* 29

Ismonov A. J., Kalandarov N.N., Mamajanova U.H. *Meliorative condintion of the saline soils of the lowlands river Amudarya* 31

Содиқова Г.С., Ёқубов Т.Х. *Мингбулоқ тумани суғориладиган ўтлоқи тупроқларининг морфологик белгилари* 33

МЕЛИОРАЦИЯ ВА ДЕҲҚОНЧИЛИК

Ураимов Т. *Андижон вилояти тупроқларининг мелиоратив ҳолати ва уларни яхшилаш йўллари* 35

Ахмедов А.У ,Турдалиев Ж.М.,Фахрутдинова М.Ф.,Бурханова Н.Ҳ. *Тошкент вилояти гидроморф тупроқларининг ҳозирги экологик-мелиоратив ҳолати.* 38

Амирқулов О.С., Қаюмов Н. *Кузги бугдойдан сўнг экилган маккажўхори экинидан бўшаган майдонлардаги илдиз ва анғиз қолдиқлари* 43

Турсунов Х.О., Атабаева М.С., Холисбеков Ж. *Экиш усуллари, кўчат қалинлиги ва маъданли ўғитлар меъёрининг ғўзанинг гуллашига таъсири* 45

Идрисов Х.А., Хайруллаев С.Ш., Усмонова Ш.У. *Мош навларини экиш меъёрларининг ҳосил шаклланишига таъсири* 47

Қаюмов Н., Амирқулов О.С. *Сояни турли муддатларда экишнинг ўсимлик бўйига ва ҳосилдорлик кўрсаткичларига таъсири* 48

Бурхонов Н.И., Нуриддинова М.И., Жасанов Ж.М. *Қишлоқ хўжалигида махсар ва нўхат экинини экишга янгича ёндашув* 50

КЎЧМАС МУЛККА БЎЛГАН ҲУҚУҚЛАРНИ ДАВЛАТ РЎЙХАТИДАН ЎТКАЗИШ ВА ЕРЛАРНИНГ ҚИЙМАТ БАҲОСИ

Эргашев И.Х. *Зомин тумани суғориладиган тупроқларининг унумдорлик ҳолати* 51

Хўжагелдиев Ч. *Суғориладиган ерлар унумдорлигини оширишни рағбатлантириш йўллари* 53

Нўхат экини таъсирида аммонийли ва нитратли азот миқдорини ортиши ҳам тупроқда фосфатларнинг эришини кучайтиради ва бунинг натижасида тупроқда ҳаракатчан фосфор миқдори ошади. Бу эса нўхатдан кейин нафақат тупроқнинг азот режими, балки фосфат режими ҳам яхшиланишидан дарак беради.

Нўхат ўсимлиги учун муҳим озиқ моддалардан бири бу алмашинувчан калий ҳисобланади. Алмашинувчан калий миқдори хам нўхат экини таъсирида ўсув даври давомида ижобий томонга ўзгаради. Бу ҳолат тупроқнинг иккала қатламида алмашинувчан калий миқдори ўртача 238 мг/кг, ҳайдов ости қатламида 176 мг/кг бўлган бўлса, нўхат экини йигиштириб олингандан сўнг бу кўрсаткич қатламлар бўйича 257 ва 192 мг/кг ни ташкил этди, бу кўрсатгичлар мос равишда 8,0 ва 9,1% га ошганлиги маълум бўлди.

Хулоса. Нўхат экинининг тупроқ агрокимёвий таркибига таъсири сезиларли бўлди. Нўхат экилгандан сўнг тупроқдаги ҳаракатчан NPK элементларининг 0-30 см қатламида сезиларли даражада ортганлиги қайд қилинди. Бунда тупроқдаги ҳаракатчан озиқ моддалар миқдорини ўзгариши кучлироқ намоён бўлди. Тупрок эритмаси муҳити таркибига (pH) нўхат экини ўз таъсирини кўрсатмади. Бу эса ўз навбатида нўхатдан кейин тупроқ озиқ режими яхшиланиши ҳисобига алмашлаб экишдаги экинларнинг озиқланиши, ўсиш ва ривожланиши учун қулай шароит яратади.

Мустанов С.Б.
Қ.х.ф.н., доцент,
Умурзоқова У.Э.
3-босқич талабаси.
Самарқанд ветеринария медицинаси институтиу

Фойдаланилган адабиётлар рўйхати

1. *Методика полевых и вегетационных опытов с хлопчатником в условиях орошения. // Ташкент. СоюзНИХИ. - 1981. - С. 246.*
2. *Ҳамдамов И.Ҳ., Мустанов С.Б., Бобомуродов З.С. Суғориладиган ерларда нўхат етиштиришнинг илмий асослари. - Тошкент: "Фан", 2007. - 115 б.*
3. *Шукуруллаев П. Биолого-экологическая и агрохимическая оценка форм и сортов нута в условиях богары Узбекистана: Автореф. дисс. канд. с.-х. наук. - Ташкент, 1968. 18 с.*
4. *Мустанов С.Б., Умурзоқова У.Э. Деятельность клубеньковых бактерий на корнях нута в условиях Узбекистана // Инновационные подходы в современной науке. - Москва, 2019. - № 5(41). - С. 45-48.*
5. *Химия и агрохимия бобовых растений // Под редакцией Запрометного М.Н. – Москва: "Агропромиздат", 1986. – 155 с.*
6. *Agrawal R.P. Soil physical conditions and growth of chickpea (Cicer arieti-num L.) // Acker-Pflanzenbau.- T., 1985. №2. - S. 89-92.*

УДК: 631.626.87

MELIORATIVE CONDINTION OF THE SALINE SOILS OF THE LOWLANDS RIVER AMUDARYA

Annotation*. The article highlights the reclamation state of the soil cover of the lower river Amu Darya. As a result of the studies, the main properties of the soils of the region were clarified. The studied materials revealed the features of hydromorphic soils degradation, desertification, and high content of readily soluble salts. The main factors limiting the fertility of irrigated soils were also identified. The cited materials on some soil properties will reveal the features and establish the modern reclamation state of soils in the Khorezm region.*

Key words: *meadow soils, desertification, erosion, fertility, salinization, degradation, sediments, groundwater*

Аннотация*. В статье освещается мелиоративное состояние почвенного покрова низовий р. Амударьи. В результате исследований были уточнены основные свойства почв региона.По изученным материалам выявлены особенности гидроморфных почв: дегрдация, опустинование, высокое содержание легкорастворимых солей. Так же выявлены основные факторы, лимитирующие плодородие орошаемых почв. Приведенные материалы по некоторым свойствам почв позволят раскрыть особенности и установить современное мелиоративное состояние почв Хорезмской области.*

Ключевые слова: *луговые почвы, опустынивание, эрозия, плодородие, засоление, деградация, отложения, грунтовые воды.*

Аннотация*. Мақолада қуйи Амударё тупроқ қопламларининг мелиоратив ҳолати ёритилган бўлиб, тадқиқотларда минтақа тупроқларининг асосий хусусиятлари ўрганилган. Тадқиқот маълумотларга кўра, гидроморф тупроқларнинг ўзига хос бўлган: гумусга камбағаллашуви, чўлланишлар, юқори миқдорда сувда осон эрувчан тузларнинг мавжудлиги қайд этилган. Келтирилган маълумотлар айрим тупроқларнинг хусусиятларини очиб беришга хизмат қилади ва Хоразм вилояти тупроқларини замонавий мелиоратив ҳолатини белгилайди.*

Калит сўзлар:*ўтлоқи тупроқлар, чўлланиш, розия, унумдорлик, шўрланиш, камбағаллашув, ётқизиқлар, сизот сувлари*

Introduction. Effective land management and land use planning continues to be the most pressing land issue. In this regard, in the present which is assigned a primary role in the conduct of observations of the ameliorative state of the land in various natural and anthropogenic conditions of the republic. In order to improve the ameliorative state of the soils of the lower reaches of the Amudarya, it is necessary to develop a system of measures to preserve and improve soil cover, recultivate disturbed lands, land a little productive land, protect the soil from wind erosion, secondary salinization and waterlogging, desertification and prevent other negative phenomena.

The object of study and methods for their implementation. The object of the study is the soil cover of the ancient Amudarya delta - Khorezm region, which is an inter-desert irrigated oasis. The Khorezm oasis is located in the northern part of Uzbekistan, in the desert zone. The research is based on the comparative-geographical method [1]. At the stage of conducting field research, morphological methods were used [2]. The use of instrumental methods associated with

laboratory studies of selected samples, which were carried out in the analytical center of the Research Institute of Soil Science and Agrochemistry according to generally accepted methods [3, 4].

Results and their discussion. The territory of Khorezm region is located mainly on the ancient alluvial sediments of the Amudarya. Soil formation in the Khorezm region proceeds mainly against the background of a stable, centuries-old oasis hydromorphic moisture regime. Recent studies have shown that nowadays meadow alluvial soils, including irrigated ones, are the most common on the ancient alluvial plain. The increase in their area in the ancient alluvial as well as the modern Amudarya plain was due to the development of difficult-reclaimed soils, such as meadow and marsh-meadow salt marshes, as well as sands, much of which, after fundamental amelioration, is involved in irrigated agriculture. Meadow and marsh-meadow floodplain-alluvial soils, largely involved in irrigated agriculture, form in the floodplain of the Amudarya. In inter-channel sediments in a number of areas, except for meadow alluvial soils, marsh-meadow and marsh soils and salt marshes are formed [5]. At present, the soil cover of the Khorezm region is represented by the following soils: gray-brown and gray-brown-meadow (on the bedrock eluvium), meadow, marsh-meadow, salt-meadow and marsh meadow saline (on the bedrock alluvium and eluvium). The most common soils in the Khorezm region are meadow, among which there are irrigated and virgin-fallow differences [6; 7].

Meadow soils are formed at a depth of groundwater of 1-2 (3) m, which actively influence soil formation processes. Their mode on the ancient surfaces of the delta is irrigation-alluvial, on modern - alluvial and floodplain-alluvial, on irrigated arrays of the Zaunguz Karakum and Tashsaki plateau - irrigation. The highest standing of groundwater is observed during the period of washing and vegetative irrigation.

The high standing of groundwater is accompanied by waterlogging of the lower part of the profile, which leads to the creation of anaerobic conditions and the development of redox processes, to the formation of acidic and oxide forms of iron, aluminum, manganese. In the soil profile, rusty brown and brownish-black gley spots are formed. The high level of standing of saline groundwater creates prerequisites for the development of secondary soil salinization. Consequently, meadow soils, both during development and operation, should be sufficiently provided with an efficiently functioning collector-drainage network.

Irrigated meadow soils occupy the dominant value in the land fund of the Khorezm region [8]. Irrigation has a great influence on the formation of these soils, along with the existing hydrogeological conditions. Mechanically, it can be diverse - from sandy sands and sands to heavy loams and clays. Below the arable horizon, more often in old-irrigated and less often, in new-irrigated soils, a so-called sub-arable horizon is formed, characterized by increased compaction and coarse lumpy structure. It also contains roots of vegetative vegetation, and with a strong salinization of the soil - speck of salts.In old irrigated meadow soils, the upper part of the profile is up to 60-70 cm. and sometimes even deeper, it is composed of agro-irrigation sediments. Humus-accumulative horizon in old irrigated meadow soils reaches the power of the agro-irrigation horizon. In the newly irrigated waters it is somewhat shortened (up to 40-50 cm), and in the newly mastered it only sometimes goes beyond the limits of the arable horizon (Figure-1).

The mechanical composition of the humus and transitional horizons, as well as arable, may be different. On the alluvial plains, they have a sharply layered character by mechanical composition.

The humus content in the arable horizon of irrigated meadow alluvial soils varies widely (from 0.4-0.7 to 1.0-1.3%), which is primarily due to the mechanical composition of these horizons, as well as the formation conditions soil and its evolutionary development. It should be noted that currently irrigated meadow soils are often depleted in organic matter. In most of these soils, the humus content is less than 1% (Figure-2). Especially it is small in soils of sand and sandy sand. The content of gross nitrogen varies in a very wide range: from 0.02-0.09% in newly irrigated and newly developed soils to 0.03-0.13% in old-irrigated. The CO_2 content of carbonates in meadow soils is 6.2-7.3%. Calcium carbonate is predominant in carbonates, in some horizons - magnesium carbonate.

Gypsum – less than 1%. In terms of salinization, irrigated meadow soils are different: from slightly saline (sometimes washed) to strongly saline with very saline and salt marshes.

There are few virgin-fallow meadow soils on the alluvial plains. They are located in small areas and have different texture, sharp layer profile and usually strong salinization.

Humus-accumulative horizon in virgin meadow alluvial and floodplain-alluvial soils covers sod and under sod horizons, in fallow soils - former arable. It is grayish-brownish, radicular. It accumulates a lot of salt, especially on the surface. The humus content in the upper horizons of heavy loamy soils reaches 0.6-1.8%, and in light loamy – sandy loamy soil – 0.3-0.9%, nitrogen – 0.025-0.06%. With depth, the humus content decreases to 0.3-0.6%. The distribution of carbonates in the profile is uniform (6.0-6.8%). Calcium carbonate predominates in carbonates, in some horizons - magnesium carbonate. The virgin-fallow meadow alluvial soils are highly saline with marsh spots, virgin meadow floodplain alluvial - low and medium saline, virgin meadow soils on eluvium of tertiary rocks Zaungus have different salinization.

Marsh-meadow and marsh soils form in local depressions and along the shores of lakes when groundwater is located closer than 1 m. newly irrigated, newly developed and virgin-fallow differences are distinguished among the marsh-meadow soils. There are marsh-meadow soils throughout the region, although they have a small area.

Newly irrigated and newly developed bog-meadow soils, unlike virgin-fallow, have an arable horizon with a thickness of 28-30 cm. The upper part of the profile of both virgin and irrigated bog-meadow soils is represented in space by various textures - from heavy loam to sandy loam. The lower part of the profile is slightly layered. Unlike meadow soils, in marsh-meadow and marsh, the gley horizon is high, within 40-60 cm. Humus, staining in irrigated marsh-meadow soils coincides with the arable layer (28-30 cm). The humus content here is 0.6-1.4%, gross nitrogen 0.04-0.075%. Profile carbonate uniform – 6.3-6.6%. Calcium carbonate prevails in carbonates. The marsh-meadow soils of the modern alluvial plain of the Amudarya are saline in the weak and medium degree.

Solonchaks form in intra-oasis, poorly drained, depressions on the ancient alluvial (lake) sediments of Daudan, on young sediments of the modern flood-plain alluvial plain of the Amu Darya and in the inter-row depressions of the Zaunguz Karakum on the eluvium of bedrock. Among the salt marshes are typical and swamp-meadow. They are formed at the depth of groundwater, respectively, 1-2.5 and 0.5-1 m, i.e. with moderate and excessive soil moisture. For typical and marsh-meadow salt marshes, an elevated humus content is peculiar. Humus in typical salt marshes is a relic, since modern conditions preserve previously created increased amounts of organic matter and do not contribute to the accumulation of new ones. The humus content in these soils reaches 0.5-1, and sometimes 1.9%. With the depth of the profile, its

content decreases to 0.4-0.5%. Gross nitrogen is 0.04-0.08%. Profile carbonate uniform - 9-10%, gypsum - 1.3-3%.

Desert sandy soils are formed on the sands that are widespread in the Khorezm region. Sands are divided by genesis into alluvial and indigenous. Alluvial sands are formed as a result of waving of the ancient channel sediments ofDaudan and Daryalyk and modern sediments of the Amudarya, and the bedrock - in the aeolian processing of the eluvium of the Zaunguz Karakum, Kyzyl-kum and Tashsaki plateau bedrock. Earlier, the sand massifs were located along the Daudan and Daryalyk beds and had a hilly relief, were densely covered with vegetation in the form of Karelinia, tamarisk, yantak, sandy sedge, etc. Desert sand soils formed on the slopes. In the inter-humid depressions, fine spots of salt marsh were found. Groundwater under the ridges lies at a depth of more than 10-15 m. In the Zaunguz Karakum, in the checks, the groundwater approaches the surface, and sometimes pinch out. In desert sandy soils, raises a very low content of humus (0.04-0.26%) and carbonates (0.04-1.43%). In the soils, humus and carbonate decreases are somewhat higher, respectively, 0.26-0.45% and 0.4-3.9%. Here, at a depth of half a meter, an illuvial carbonate horizon is formed.

Gray-brown soils on the territory of the Khorezm region are found in its southeast corner, on the Tashsaki plateau. They are formed on tertiary eluvium. The power of the soil profile ranges from a few centimeters to one meter, sometimes more. The depth of groundwater is more than 5-10 m. According to the mechanical composition of the soil, mainly sandy-sandy, to some extent skeletal. Humus in these soils is small - in the upper horizon from 0.15 to 0.36%, nitrogen 0.02-0.04%. Carbonates in the illuvial horizon of 5-6%, in others - 3-4%. The amount of gypsum in the lower horizons in front of the slab reaches 27-33%. The humus content in the upper horizon of the soil (arable) has increased in comparison with the initial gray-brown ones: in sulfur-meadow-meadows up to 0.4-0.8%. in meadow -lands up to 0.6-1.1%. In the lower horizons of these soils, humus is very small — 0.2–0.3%. Nitrogen in the upper horizon 0.02-0.03%, in the lower - 0.01-0.02%. Irrigated gray-brown soils are slightly saline and washed.

The main measures to improve soil fertility is a set of land reclamation activities:

- The territory of the region is characterized by a very weak natural outflow of groundwater. In this regard, all irrigated lands are subject to secondary salinization. Cultivation of cotton and related crops of cotton crop rotation requires the implementation of agro-technical and ameliorative measures to eliminate the negative effects of excess toxic salts in the soil on the growth, development and yield of agricultural crops;
- The level of saline groundwater has a significant effect on the ameliorative state of irrigated land. To prevent secondary soil salinization, it is advisable to keep the groundwater below the critical level, i.e. beyond the second meter. The most promising of these is the combined drainage consisting of open horizontal drains with vertical boreholes;
- Meliorative condition of the soil will not improve without their preventive washing. In this regard, on all irrigated soils, depending on their mechanical composition and degree of salinity, it is recommended to carry out irrigation with a norm of 3.0-9.0 thousand m^3/ha (with 100% water availability) or 2.0 to 7.0 thousand m^3/ha (with 75% water supply). Conducting washing irrigation must be timed for the autumn-winter period

Ismonov A. J.
PhD in Biology, Senior Researcher
Kalandarov N.N.
PhD in Biology , Junior researcher
Mamajanova U.H.
Junior researcher.
Soil science and Agrochemical Research Institute, Department of "Genesis, geography and cartography of soils"

References

1. Rode A.A. The system of methods in soil science. - Novosibirsk, Science, Siberian Branch. 1971, p. 92

2. Rozanov B.G. Soil morphology. - Moscow, Academic Project. 2004, p.432

3. Kuziev R., Abdurakhmanov N., Ismonov A.J. and others. Instructions for land cadaster, soil exploration and soil mapping. - Tashkent, 2013. p. 52.

4. Arinushkina E.V.. Manual on chemical analysis of soil. - Moscow, 1975. Moscow State University, p: 491.

5. The team of authors. Soils of Khorezm region. - Tashkent, 2003. P.1-35

6. Kuziev R., Sektimenko V.Ye., Ismonov A.J. Atlas of the soil cover of the Republic of Uzbekistan. - Tashkent, 2010. p. 48.

7. Kuziev R. and Sektimenko V.Ye. Uzbek soil. - Tashkent, 2010. p. 351.

8. Kuziev R., Sektimenko V.Ye., Ismonov A. Soil Map of the Republic of Uzbekistan. - Tashkent, 2008

УЎТ: 631.4

МИНГБУЛОҚ ТУМАНИ СУҒОРИЛАДИГАН ЎТЛОҚИ ТУПРОҚЛАРИНИНГ МОРФОЛОГИК БЕЛГИЛАРИ

Аннотация. *Мақолада тупроқнинг морфологик белгилари унинг хосса-хусусиятларини ўзида акс эттириши ва тупроққа тавсиф беришда муҳим диагностик омил эканлиги Мингбулоқ тумани Гулбоғ массиви суғориладиган ўтлоқи тупроқларида ўтказилган тадқиқотлар мисолида очиб берилган.*

Калит сўзлар: *Суғориладиган тупроқлар, морфологик белгилар, гидроморф тупроқлар, аллювиал ётқизиқлар, ўтлоқи тупроқлар, механик таркиб, қатлам ранги, тупроқ тузилиши.*

Аннотация. *В статье кратко описанны морфологические признаки почвы отражающие ее структуру и свойства, а тот факт, что она является важным диагностическим фактором при описании почвы, раскрывается на примере исследований, проведенных на орошаемого луговые почвах Мингбулакского района массива Гульбаг.*

Ключевые слова: *Орошаемые почвы, морфологические признаки, гидроморфические почвы, аллювиальные отложения, луговые почвы, механический состав, цвет слоя, структура почвы.*

Abstract. *The article briefly describes the morphological features of the soil reflecting its structure and properties, and the fact that it is an important diagnostic factor in the description of the soil is revealed by the example of studies conducted on the soils of the Mingbulak district of the Gulbag massif of the irrigated meadow.*

Key words: *Irrigated soils, morphological features, hydromorphic soils, alluvial deposits, meadow soils, mechanical composition, layer color, soil structure.*