

## SUMMARY

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**Vozhegova R.A. The historical way of development of Institute of irrigable agriculture NAAN of Ukraine**

Showing achievements in the research work of the Institute of irrigated agriculture NAAS over 125 year history of its existence. The history of the organization of the institution and its role in the development of agriculture in the south of Ukraine. Briefly describe the work of the main scientific divisions and achievements of scientists institutions throughout history. Highlighted the current state of the Institute of irrigated agriculture and its development prospects.

**Limar A.A. The role of science in the development of irrigated land Kherson (*Memories productionist – Meliorator – Scientist*)**

The article highlights the stages of development of irrigation in the Kherson region associated with the construction of the North Crimean trunk, Severny, Krasnoznamensky irrigation systems. Particular attention is paid to training for irrigated agriculture and scientific support education and research institutions through the organization of international union and republican meetings, seminars.

**Keywords:** irrigation, stages of development, science and industry.

**Goloborod'ko S.P. Scientific bases of the systems of fodder production on the irrigated lands of South Steppe of Ukraine**

The results of scientific researches is brought on establishment of effectiveness of the optimized systems of fodder production on the irrigated lands of South Steppe, foremost, at growing of one-year green crops, long-term herbares, and also to the purveyance of rough and juicy forage. There is a 1 feed on a production at growing of oneyear intermediate forage crops (rye winter + rape winter) 11,58 is expended MD; corn - 9,35; alfalfas - 6,88 i of alfalfa-cereals herbal mixtures of the irrigated pastures - 5,45 MD.

**Keywords:** fodder production, systems, irrigation, fertilizers, alfalfa, herbal mixtures, pastures.

**Kovalenko A.M. General ways and directions of investigations on work out of scientific approaches to construction of crop rotations**

The results of many-years researches in the Institute of Irrigated Farming of NAAS over all history of its existence on work out of scientific basis of construction of crop rotations on the unwatering and irrigated lands are leaded in the article. Illustrated both the results of researches in begin creation of Kherson experimental field and the results of researches last years. Basic sums and scientific substantiated conclusions on form the crop rotations for economies of different specialization are leaded.

**Keywords:** crop rotation, alternation of crops, specific weight, structure of sowing squares, irrigation, unwatering lands.

**Malayrchuk N. The historical way of forming of the systems of treatment of soil in crop rotations on мелиорированных earth**

The department of irrigable agriculture was created in 1924 on the base of the Kherson experimental station, of that at that time the doctor of agricultural sciences, professor P. Podgorniy. Researches of that time became foundation of development of водних land-reclamations on the south of Ukraine. The special attention and the greatest estimation are deserved by works of a few generations of учених, that developed methods and depth of basic treatment under agricultural cultures for savouret of different specialization on irrigable earth.

**Keywords:** irrigated agriculture, soil cultivation, crop rotation.

**Vozhegova R.A., Verdish M.V., Bulayenko L.M., Klubuk V.V. Stages of development of irrigation in southern Ukraine**

In the article the main periods of irrigation in southern Ukraine, since its inception in the late nineteenth century to the present are marked, the features of the construction and operation of main irrigation systems are determined. The current state of development of irrigated agriculture is analysed. Based on the situation in the field of land reclamation and irrigated agriculture, socio-economic status, are priorities for the government of Ukraine jointly with agricultural science in the field of irrigation

**Keywords:** south of Ukraine, irrigation, irrigation system, project works, canal, irrigation systems, irrigation technology.

**Zayets S.A., Goloborod'ko S.P., Klubuk V.V. Development of agrotechnologies of growing of basic agricultural cultures for the last 50 years**

In the articles cited data in relation to scientific activity of department agrotechnologies of Institute of the irrigated agriculture of HAAH and developments by the employees of this department of technologies of growing grain-growing, grain of leguminous and forage cultures during the last 50 years. It is set that depending on tasks which was put before science in different times of development of agroindustrial complex, different technologies of growing of basic agricultural cultures were developed: industrial, progressive, intensive, resources-saving, adaptive. In most economies of South Steppe on the irrigated earths, where these technologies were inculcated, got the high harvests of grain and forage.

**Keywords:** institute, irrigation, department, agrotechnologies, industrial, progressive, intensive, resources-saving, adaptive.

**Filip'ev L.D., Dymov O.M., Bidnyna I.O., Kloubuk V.V. Development of agrochemistry researches in the Institute of Irrigated Farming of NAAS**

The directs of development of agrochemistry researches in the Institute of Irrigated Farming of NAAS

in historic aspect are showed in the article. The role of leading agrochemistry and physiology scientists in development of individual directs is opened. Basic results of experiments are leaded. It showed that on the basis of over 30-years researches in stationary experiments the optimal parameters of content of nutrients in soil were determined, which allowed to work up the methodic of calculation doses of mineral fertilizers application on planned level of yield of agricultural crops under irrigation depends on real content of nutrition elements in the soil of each concrete field.

**Keywords:** agrochemistry research, scientists agricultural chemists, mineral and organic fertilizers, nutrients, yield, quality of products.

**Vogegova R.A., Lavrinenko Yu.A., Kokovikhin S.V., Pisarenko P.V., Bilaeva I.M., Drobitko A.V. Scientific ground of the regime irrigation taking into account the biological necessities of plants and technological parameters of the irrigation systems**

The results of researches on the scientific ground of the regime irrigation of agricultural crops are represented in the article. The use of the developed software products allows optimizing work of the pump stations, to avoid spades indexes in their work, to economize water, power mediums, hardwires, labour resources, to promote productivity, economic efficiency and ecological safety of the irrigated farming.

**Keywords:** irrigation, crop rotations, pump stations, farmer, productivity of the irrigated lands.

**Klubuk V.V., Granovska L.M., Verdysh M.V. The History way of the development of the subdivision of the economic studies of the Institute of irrigated farming NAAS**

In article main stages of the development of the subdivision of the economic studies of the Institute of irrigated farming NAAS are given. The main questions of the scientific themes, which were researched laboratory are marked. Actual for present-day day of the subject of the scientific studies are determined.

**Keywords:** economic studies, laboratory of the economy, Institute of irrigated farming, cost-performance, using of irrigated lands.

**Ushkarenko V.A., Lavrenko N.N. Productivity of grain of *Hyra* depending on basic treatment of soil, doses of fertilizers and density of standing of plants at different terms of moistening on the south of Ukraine**

In the article materials are expounded experimental researches influence on the productivity of chickpea of basic treatment of soil, doses of mineral fertilizers, densifying of plants and terms of moistening. By shares influence of factors is certain on formings of harvest of grain of culture.

**Keywords:** chickpea, harvest, treatment of soil, density, mineral fertilizers, irrigation.

**Vozhegova R.A., Melnik M.A. Influence of agroseptions on productivity of varieties soybean in the conditions of irrigation of South Ukraine**

The results of researches with the variety of soy, which reared at different terms moistening and application of inoculation, are resulted in the article. It is set

for the result of researches, that increase of raw mass and dry matter, and also indexes of area of sheet surface, photosynthetic potential of sowing and clean productivity of photosynthesis of maximal values is achieved at watering to the phase of pouring of bobs, sowing of the Deymos variety and treatment of seeds by the Optimayz preparation.

**Keywords:** soy, raw mass, dry matter, area of leafs, photosynthetic potential, clean productivity of photosynthesis.

**Malyarchuk N.P., Kotelnikov D.I. Formation productivity of grain maize based on soil tillages y stemsand fertilizer in irrigated conditions of southern Ukraine.**

The article presents the basic principles of technology growing corn. Problems of soil tillage minimization and optimization of fertilization. The sefigures soil density changes depending on the method and depth of soil and influence on the productivity of irrigated corn in the south of Ukraine.

**Keywords:** maize, soil density, permeability of soil, productivity.

**Kovalenko A.M., Tymoshenko G.Z., Novochiqnij M. V. Efficiency of application of microbial preparations is in the conditions of the natural moistening in sowing of barley of furious at different methods till of soil**

Results over of scientific researches are brought from determination of influence of application of microbial preparations (Mikrogumin and Fosfoenterin) on the productivity of barley furious at application of the systems of the minimized basic till of soil.

**Keywords:** a barley is furious, microbial preparations, inoculation, till of soil, productivity, efficiency.

**Zayets' S.A. Technological measures of increase of harvest and improvement of quality of grain winter-annual to the barley in the conditions of irrigation**

The three-year results of the field researches are presented in the article, where in the conditions of irrigations after soy influence of fertilizers was studied, oligoelements and defence of plants on a harvest and quality of grain of winter-annual barley. It is set that bringing of calculation norm of nitric fertilizers of  $N_{87-98}$  provides the increase of the productivity on 1,22 т/of ha, and the use of defence of plants from weeds, illnesses and wreckers additionally saves 1,08 т/ha of grain of barley. Id est, from this technological complex the raise of the productivity makes 2,30 т/ha.

**Keywords:** irrigation, winter-annual barley, fertilizer, defence of plants, productivity, quality of grain, economic efficiency

**Dymov O.M. The influence of irrigation and fertilizers on yield and quality of alfalfa's hay**

In the article the results of researches with alfalfa which leaded in stationary experiment on the dark-chestnut med loamy soil of experimental field of Institute Irrigated Farming NAAS in conditions of nature wetting and at irrigation are stated. There proved that in irrigated conditions the nitrates are used by alfalfa better then without watering. Under systematic appli-

cation of mineral fertilizers in crop-rotation the content of mobile phosphorus in arable lay of soil increases. Quantity of exchangeable potassium, in comparison of initial content, in fifth crop-rotation increases in all without exception variant of experience. Maximal raise yield of alfalfa hay from irrigation (13,8 t/ha) at it growing in crop-rotation provides entry  $N_{60}P_{100}K_{30}$ . Mineral fertilizers in both unirrigated and irrigated conditions raises the content of nitrates in over ground mass of alfalfa. There quantity increases with raise of fertilizers dose. Under irrigation and application of mineral fertilizers the sum of nitrogen of albumen fractions decreases in the alfalfa hay in comparison of unwatering variants.

**Keywords:** alfalfa, irrigation, fertilizers, nitrates, phosphorus, potassium, yield, nitrogen of albumen fractions.

#### **Vasylenko R.M. The use of compatible crops in fodder**

The paper considered the use and role of compatible crops in fodder. The specified role cereal and legume components in mixtures. Determined the most productive forage agrocenosis for dry and wet conditions.

**Keywords:** mixtures, farmland, fodder components.

#### **Malyarchuk A.S. Efficiency of doses of nitric fertilizers and basic treatment of soil at growing of rape winter on irrigation**

The results of three-year experimental researches are presented on the study of influence of methods and depth of the dump, nonmoldboard and differentiated systems of basic treatment of soil and doses of nitric fertilizers on maintenance of nitrates in soil, nitric ability and productivity of rape winter.

**Keywords:** rape winter, method of treatment, irrigation, nitrates, nitric ability, productivity.

#### **Filip'ev L.D., Shkoda O.A. Contents of basic elements of feed in the plants of winter rape depending on application of fertilizers and method of basic treatment of soil**

To the article the results of researches are driven in relation to the dynamics of maintenance of elements of feed in the plants of winter rape for vegetation period depending on application of mineral fertilizers on a background straw of winter wheat and method of basic treatment of soil.

**Keywords:** contents of elements of feed, nitrogen, phosphorus, potassium, winter rape, fertilizers, treatment of soil, phase of development.

#### **Tomashova O.L., Tomashov S.V. Yield linseed depending on different seeding rates and tillage systems**

Reasonable results of three years of research on the study of the various ways of the basic tillage and the use of different seeding rates linseed varieties Vodograi. The expediency of the use of at sowing seed rate of 5 million. Pcs. seeds per 1 ha and application of minimum tillage to a depth of 8-10 cm when grown linseed in upland conditions of the Crimea.

**Keywords:** flax oil seed, variety Vodograi, tillage, seeding rate, productivity.

#### **Kolpakova O.S. Productivity of new hybrids of maize depending on agrotechnical methods in conditions of irrigation.**

In the article the economic and biological value of corn. illuminated elements of technology of cultivation of corn on the irrigated lands of the steppe zone of Ukraine.

**Keywords:** maize, new hybrids of corn, terms of sowing, sowing, irrigation norm.

#### **Petryshkova O.N., Tomchuk R.V., Kondratevych O.V. Seed productivity of sainfoin for the improvement of the individual elements of technology of cultivation in the Steppe zone of Ukraine**

Lit the influence of seed rate, sowing and covering the seed productivity of sainfoin sandy, giving the opportunity to increase yields and resistance to adverse conditions of the Steppe zone of Ukraine.

**Keywords:** feeding value, biological features, planting dates, seeding rates, cover crops, seed productivity.

#### **Tomchuk R.V., Petryshkova O.N., Kondratevych O.V. Breeding of drought resistant varieties of perennial cereal grass for conditions of the Steppe zone of Ukraine**

The results of breeding of perennial cereal grasses in the South of Ukraine are presented. Long-team researches on breeding work with grass middle, regneria trachycaulium, wheat – grass pectinatc and the Lotus horned.

**Keywords:** seed and feed efficiency, average wheat grass, regner shorstkosteblova, wheatgrass comb, deervetches horned variety trials, breeding nurseries.

#### **Lavrinenko J.A., Marchenko T.J., Hlushko T.V., Hozh O.A., Nuzhna M.V. Create new corn hybrids for irrigated fields**

The paper presents the results of research breeding Institute of irrigated agriculture to create maize hybrids of different maturity groups with high performance, adaptive capacity, resistance to diseases and low moisture grain harvesting. The results of study of formation grain yield of maize hybrids of different maturity groups, depending on irrigation and fertilizers.

**Keywords:** maize hybrids, of maturity, fertilization, irrigation, grain yield.

#### **Bazaliy G., Kolesnikova N., Klubuk V. Varieties of winter wheat area for the Southern Steppe of Ukraine at the crossroads of centuries**

The experience of breeders Institute of irrigated agriculture NAAS for creating high quality and varieties of winter wheat for conditions of irrigation and natural farming with high adaptability to biotic and abiotic environmental factors.

**Keywords:** winter wheat, variety, hybrid, yield, productivity, quality, irrigation

**Klubuk V.V., Borovik V.O., Myhaylov V.O., Osiniy M.L. The History aspects that results selection work with soybean in Institute of the irrigated husbandry NAAN**

In article are brought history stages selection work with soybean in Institute of the irrigated husbandry NAAN since 1959 on present day. The problems and directions are Directed on breedings of soybean. The Presented results selection work and short feature created sort to soybean.

**Keywords:** Soybean, breeding, history stage, sort, irrigation.

**Lyuta Yu.O. History and a brief summary of the vegetable laboratory**

The article summarizes the results of scientific research vegetable laboratory for the period of its existence. Developed and implemented in the production of resource-saving technologies of cultivation of vegetable crops in rain fed and irrigated areas of southern Ukraine, which define the optimization process to reduce the anthropogenic load on the ground, to improve the efficiency of irrigation water use, maintaining soil fertility, increased productivity and quality of vegetable production. New varieties of tomato industrial type: Naddniprianskiy 1, Kimmeriets, Sarmat, Inguletskiy, Time, Legin, Kumach, suitable for cultivation in the south of Ukraine, which are listed in the Register of plant varieties of Ukraine. Research and development laboratories are protected by 23 patents of Ukraine, including 7 of them were obtained on tomato varieties.

**Keywords:** vegetable laboratory, technology, irrigation, selection, variety, tomato, onion, beetroot, productivity.

**Tishchenko E., Tishchenko A. Destinations of selection for alfalfa irrigation conditions**

The use of different selection methods, provocative backgrounds helped to create varieties of alfalfa for multi-purpose use with complex characters and properties. Varieties: Khersonska 9 is used in the rice crop rotation, Vavilovka 2 is used for cutting in the early phases of development, Zoryana is a sign polyphyletic, Seraphima has a high adaptive capacity and Unitro has elevated levels of nitrogen fixation, Veselka, Nadezda, Sinskaya, Angelica, Nadezda 2 used the intensive type, Donechka for pasture use.

**Keywords:** alfalfa, variety, selection, productivity, nitrogen fixation.

**Borovik V.O., Stepanov Y.O. Historical path of development in cotton breeding Institute of irrigated agriculture.**

The questions of the historical development of breeding bavoniku. The necessity of studying the source material in order to use it in the selection process. Based on years of research collections cotton allocated valuable specimens formed workers indicative of the collection, which includes varieties that enrich the gene pool of the culture in Ukraine and are a source of valuable traits.

**Keywords:** cotton plant, selection, gene pool, standards, raw, fibre, quality.

**Chernichenko I.I., Balashova G.S., Chernichenko O.O. The Influence mass seed tubers and receiving the care for plants on productivity of the potatoes**

Studied the influence an feeding mineral and organic fertilizers and using stimulate preparation on harvest of the club potatoes. It Is Installed that complex processing by tubers mass 30 g and plants by preparation of the Mochevin K has provided 25,48 t/ha tubers, such level of the harvest of the tubers potatoes either as base technology with use by tubers mass 60 g. Herewith for sowing by tubers mass 60 g was necessary 2,86 t/ha seed material, but mass 30 - 1,43 t.

**Keywords:** potato, mineral fertilizers, Vitazim, Mochevin K, rate of the sowing, harvest.

**Cherchel V.Y., Bodenno N.A., Plotka V.V., Negoda T.V. Estimation of early hybrids of corn as initial material for creation of new inbred lines.**

Resulted results of estimation of 33 siliceous hybrids of corn, as initial material for creation of new inbred lines. 4 standards got at participation of lines DC206 are selected, DC273, DC959, DC357A, which were characterized by stable estimations after general combination ability in relation to a sign the «productivity of corn». The greatest efficiency at the synthesis of a new material was got at inbred hybrid combinations of created at participation of lines DC204, DC273 and DC357A. A tester-line DC296 (genetic group Lancaster) is selected with high general combination and differentiating ability. Dependence is not exposed between combination ability (F1) that inbred by posterity got on their base

**Keywords:** corn, inbred, hybrid combinations, lines, combination ability.

**Balashova H.S., Boiarkina L.V. Seed productivity of summer potatoes with freshly harvested tubers depending on different irrigation regimes and protection of planting material.**

The article presents the results of three-year studies of the influence of various moisture conditions on the performance indicators of seed potatoes of summer planting. When using a variable depth of soil moisture (0.2-0.4-0.6 m) the highest yield of tubers mid-season variety Yavir was formed (17.7 t/ha), which ensured the maximum yield of conditioned seed potatoes at the level of 16.2 t/ha. According to the experiment the largest mass of conditioned seed tuber was formed when applying additional pre-planting treatment of freshly harvested tubers with the drug Tirana (89.1 g), which is 14.7 g (14%) higher than the control value.

**Key words:** irrigation regime, calculated soil layer, conditioned seed potatoes, potato water consumption, yield.