

STAGES OF POULTRY FARMING DEVELOPMENT IN UKRAINE OF THE SECOND HALF OF 20th – AT THE BEGINNING OF THE 21st CENTURIES

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INTRODUCTION

The poultry industry in Ukraine is currently at the forefront of animal husbandry. In search of the effective ways of further development of this industry in Ukraine, a detailed rethinking of the accumulated advanced scientific experience of poultry farming in the historical retrospective is relevant. In 1919, M.F. Ivanov in a clear sequence has put arguments forward evidence of the benefits and necessity of development of poultry farming¹.

In Ukraine, in the period 1923–1928, the number of poultry increased in general (with certain fluctuations over the years)². The possibilities of the republic for the export of poultry products also expanded. In particular, during the 1924–1926, more than a thousand carts of eggs had exported to Germany, England and Austria³.

Therefore, the need to increase the production of poultry and improve its profitability was obvious. In order to increase the quantity and thus reduce the cost of poultry production, it was necessary to study the ways of poultry feeding and keeping, to find cheap feeds, and so on. That is, the poultry industry needed scientific support, and in 1930 the Ukrainian Scientific Research Institute of Poultry was organized in the Ukrainian SSR, which subsequently undergone reorganization and was transformed into a Ukrainian Scientific Research Station of Poultry, and then, in 1959, into Ukrainian Scientific Research Institute of Poultry again⁴.

¹ Иванов М. Ф. Сельскохозяйственное птицеводство. Харьков: Союз, 1919. 225 с.

² Центральний державний архів вищих органів влади і управління України (далі ЦДВО). Ф. 27. Оп. 8 л. Спр. 35. Арк. 33.

³ ЦДАВО. Ф. 290. Оп. 4 л. Спр. 31. 23–24 арк.

⁴ Український науково-дослідний інститут птахівництва / відп. ред. М.В. Дахновський. Київ: Видавництво УАСГН, 1961. 83 с.

But the rapid development of poultry farming in Ukraine began only in the second half of the 20th century, starting with its transfer to an industrial basis in accordance with the resolution of 1964⁵.

In the historiography of poultry farming development for researching period there are publications on social, economic and political preconditions of establishment of industrial poultry farming⁶; scientific, organizational, and methodological activities of the Ukrainian Scientific Research Institute of Poultry⁷; scientific and organizational principles of the development of artificial egg incubation⁸ in the Ukrainian SSR in the second half of the 20th century, the development of poultry farming in Ukraine during the period of independence⁹ and others.

Taking into account the aforementioned, the purpose of our work is to develop a periodization of poultry farming development in Ukraine in the second half of the 20th – the beginning of the 21st centuries. At the same time, we have identified two main stages: the first stage is the development of poultry farming in the Ukrainian SSR in the second half of the 20th century; the second stage is the development of poultry farming in the independent Ukraine.

1. Development of Poultry Farming in the Ukrainian SSR in the 50's – 80's of the 20th Century

To characterize the stage of development of poultry farming in the Ukrainian SSR in the second half of the 20th century, we have identified several periods that covered certain chronological boundaries: the first – 1951–1964, the second – 1964–1971, the third – 1971–1982 and the fourth – 1982–1991.

The first period (1951–1964) precedes the transfer of poultry farming to an industrial basis in accordance with the resolution of the Council of Ministers of the USSR and the Central Committee of the CPSU of

⁵ Об организации производства яиц и мяса птицы на промышленной основе. Постановление Совета Министров СССР и Центрального Комитета КПСС от 3 сентября 1964 г., № 740. Свод законов СССР. Москва: Известия. 1985. Т. 7. С. 512–517.

⁶ Фисинин В. И. История птицеводства российского. М.: Хлебопродинформ, 2016. Т. 2. 348 с.

⁷ Український науково-дослідний інститут птахівництва / відп. ред. М.В. Дахновський. Київ: Видавництво УАСГН, 1961. 83 с.

⁸ Мельник В. В. Теоретико-методологічні та науково-організаційні засади розвитку штучної інкубації в Українській РСР у 1964-1991 роках. *Гілея : науковий вісник, зб. наук. праць*. Київ, 2019. Вип. 145(6). С. 99-102.

⁹ Melnyk V. Development of poultry farming of Ukraine in the period of independence. *Sciences of Europe*. 2019. Vol.6. № 40. P. 45-48.

September 3, 1964¹⁰. In the beginning of the second half of the 20th century, poultry was kept mainly in collective farms and private farms. The population provided day-old young incubator-poultry stations, which functioned in all regions of the Ukrainian SSR.

The production of poultry eggs and meat was mostly seasonal. The focus was on egg production and its bigger percentage produced in households, although it gradually decreased: from 88.5 in 1951 to 85.0 in 1961¹¹. The egg production in households of the public sector, namely, collective and state farms and other state enterprises, increased.

The mechanization and automation of labor-intensive processes in poultry farms was low. Not all collective and state farms were electrified. So, in 1958 the number of collective farms that used electricity was 59%, and state farms – 96%¹².

Goose, duck and turkey farming developed for meat production. Goose farming was a traditional branch in Ukraine, because the geese use pasture and fodder well, that allows to get cheap natural feed. However, in this period, ducks were the main species of poultry for meat production. Ducks were bred only in those poultry farms, which were located near the ponds, lakes and other water reservoirs. At the same time, ducks, like geese, used cheap natural feed; it contributed to increasing the profitability of the poultry meat production. The type of poultry feeding was mainly combined. The advantage was given to the use of grain and wet blends.

In addition to concentrated feed juicy feed namely potatoes, beets, carrots, green alfalfa, etc., were also used for poultry feeding. In the summer, for young waterfowl keeping the sheds were used near the water reservoirs, as well as the premises, which got free after cattle grazing on the pastures.

However, the problem of increasing the production of meat was not solved by the application of extensive methods of poultry keeping. It was necessary to provide year-round production. Thus, in 1960, the state farm Yagotynskyi was established in the Kyiv region, where the annual production of duck meat on an industrial basis was organized for the first

¹⁰ Об организации производства яиц и мяса птицы на промышленной основе. Постановление Совета Министров СССР и Центрального Комитета КПСС от 3 сентября 1964 г., № 740. Свод законов СССР. Москва: Известия. 1985. Т. 7. С. 512–517.

¹¹ Народне господарство Української РСР в 1964 році : статистичний щорічник. Київ: ЦСУ УРСР «Статистика», 1965. 694 с.

¹² Там само.

time not only in the Ukrainian SSR, but and in the former USSR¹³. The state farm introduced a number of progressive methods of conducting industrial duck farming: feeding of ducklings and adult ducks with dry fodder mixes; two-time acquisition of a female stock in the course of a year, which allowed to raise the average annual egg laying; whole-year growth of duck for meat without using ponds; shortened growing period of ducks, etc.

Turkeys were also used for meat production. Mainly the turkeys were kept in poultry farms, where was also another poultry, mostly chickens. However, in the Ukrainian SSR already in the early 50's, poultry farms Starynska began to specialize on turkey farming¹⁴. Subsequently, it became the most powerful farm in the USSR.

For the production of chicken, they raised hens of meat and egg breeds and hybrid poultry as a result of cross-breeding from different breed lines. Chicken meat was also an additional production in farms specializing in the food egg production.

To solve the problem of increasing the production of meat, it was necessary to develop broiler production. It evidenced by the experience of other countries of the world, which constantly studied in the USSR. Already in the late 50's a year-round breeding of chickens for meat began also to introduce in the Ukrainian SSR.

The main center of scientific and methodological support for the development of poultry farming in the Ukrainian SSR was the Ukrainian Experimental Station of Poultry, reorganized in 1959 into the Ukrainian Scientific Research Institute of Poultry. In the same year, this institution received the breeding poultry farm "Krasny" in the Crimean region as a research farm. At this experimental base of the Ukrainian Scientific Research Institute of Poultry in the early 60's, a large female breeding stock of meat and egg chicken breeds, necessary for the production of meat chickens by crossing, was created. However, in order to develop broiler production, in 1962, in a research farm – a farm "Krasnyi", the first experimental broiler farm in the USSR was put into operation¹⁵.

¹³ Божко П. Е. Сенников А. А. Производство утиного мяса в совхозе «Яготинский». М.: Колос, 1965. 152 с.

¹⁴ Литвинец Г. М. Старинская птицефабрика – специализированное индейководческое хозяйство. *Птицеводство*. 1962. № 3. С. 21–23.

¹⁵ Марчик В., Бронфман Е. Бройлерная фабрика в содружестве с колхозами. *Птицеводство*. 1970. № 9. С. 12–13.

In the researching period, A.U. Bikhovets made a significant contribution to the development of artificial incubation of poultry eggs¹⁶. Important is the development of a scientist on the cooling of goose and duck eggs during its incubation, regimes and techniques for the incubation of eggs of meat and egg chicken breeds, and turkeys. During this period the achievements of Ukrainian scientists of the Department of the Poultry Selection and Breeding of the Ukrainian Scientific Research Institute of Poultry headed by M.V. Dubovsky, where I.S. Skuratov, L.M. Belov, M.G. Kurdiukov, T.S. Len, V.I. Butovska, R.K. Yevtyshenko and others worked, were very important¹⁷. Local poultry groups, namely Poltava local groups of chickens, Clayey Gray, White and White-Breast ducks, Romanian geese, were widely used as source material for selection.

By that time, scientists used the principles of the Michurin doctrine of the heredity of organisms and their variability in selection and breeding work. Ukrainian Gray, Clayey and White duck breeding groups were created by Ukrainian scientists without using interbreeding with other breeds solely by selection and creation of the best conditions of feeding and keeping. An important achievement of Ukrainian scientists on goose selection and breeding is creation of a Large Gray goose breed on the basis of the experimental farm "Birky", which was officially approved in 1956¹⁸.

For the production of chicken eggs and meat, hybrid poultry getting from interbreeding of various breeds were increasingly used. In the late 50's the theoretical foundations for the chicken hybridization developed N.V. Dubovskiy, M.V. Dahnovskiy, M.O. Demchenko, M.G. Kurdiukov and M.V. Dubovskiy, which studied the productive qualities of the chicken hybrids of different breeds for several years. They have found that the hybrids from the crossing Poltava Clayey chickens with Russian White one dominated Pure-Bred Russian White bread on egg production, live weight and viability. It was necessary to use hybrid chickens for whole-year breeding of chickens for meat. In this regard, in 1959, the Department of Selection and Breeding of the Ukrainian Scientific Research Institute of

¹⁶ Библиографический указатель печатных работ сотрудников Украинского научно-исследовательского института птицеводства (1930–1980) / под общ. ред. А.В. Шомина. Харьков, 1983. 102 с.

¹⁷ Український науково-дослідний інститут птахівництва / відп. ред. М.В. Дахновський. Київ: Видавництво УАСГН, 1961. 83 с.

¹⁸ Український науково-дослідний інститут птахівництва / відп. ред. М.В. Дахновський. Київ: Видавництво УАСГН, 1961. 83 с.

Poultry started work on the creation of faster-growing meat chickens (broilers)¹⁹.

Research on poultry feeding were due to the combined type of feeding widespread by that time, which used both dry grain mixtures, and wet. In particular, I.S. Skuratov studied the use of forage lupine, as well as corn cobbles and silage in poultry feeding. The influence of silage on the productivity of poultry was also investigated by I.Ya. Titskyi²⁰. S.A. Vodolazhchenko researched the influence of fodder antibiotics on the quality of incubation eggs and chicks, as well as the growth and efficiency of chicken feed use for meat production²¹.

The V.V. Khaskin work was devoted to the problems of the poultry physiology of feeding, who researched the relationship nitrogen and energy metabolism in the ontogenesis of chickens²².

In the Ukrainian Scientific Research Institute of Poultry, the problems of poultry feeding were decided by the staff of the Department of Poultry Feeding and Keeping. One of the most significant works of the department is the development of a system of massive duck breeding on the water reservoirs, since the presence of a large number of water reservoirs with fresh water in the republic, rich in natural forages of plant and animal origin, contributed to the keeping of large groups of ducks there. Indeed, duck breeding for meat production by an intensive method at that time has not yet become significantly widespread due to the lack of sufficient quantities of protein fodders of animal origin, necessary for the provision of complete poultry feeding.

M.V. Dakhnovskyi developed a method of duck breeding in fresh and marine waters and showed its effectiveness, since the poultry used cheap natural food at this way²³.

Important are also the developments of systems and methods of poultry keeping of Ukrainian scientists. In consequence of the

¹⁹ Там само.

²⁰ Библиографический указатель печатных работ сотрудников Украинского научно-исследовательского института птицеводства (1930–1980) / под общ. ред. А.В. Шомина. Харьков, 1983. 102 с.

²¹ Библиографический указатель печатных работ сотрудников Украинского научно-исследовательского института птицеводства (1930–1980) / под общ. ред. А.В. Шомина. Харьков, 1983. 102 с.

²² Хаскін В. В. Деякі питання взаємозв'язку азотстого та енергетичного обміну в онтогенезі курей. *Птахівництво: наукові праці* К.: УАСГ, 1961. Т. 9, Вип. 1. С. 113-122.

²³ Дахновський М. В. Ефективність вирощування качок на морських і прісних водоймах. *Вісник с.-г. науки*. 1959. № 2. С. 53–57.

developments of the Department of Mechanization of the Ukrainian Scientific Research Institute of Poultry, for the first time in Ukraine, a large-sized poultry house built for several thousand chickens in the experimental farm “Birky”. The technology of keeping egg laying hens in a large poultry house on a deep unchanging litter with the placement of the entire inventory at the stand and the maintenance of the poultry from the work passage was offered by M.V. Dahnovskyi²⁴.

The second stage of the development of poultry farming in Ukraine in the second half of the 20th century covers the period 1964–1971. Its beginning is due to the approval of the resolution of the Council of Ministers of the USSR and the Central Committee of the CPSU of September 3, 1964, on the transfer of poultry farming to an industrial basis²⁵. After the resolution, poultry farming in the Ukrainian SSR began to develop at a rapid pace.

The large-scale poultry farms, as well as specialized farms of collective and state farms have become the organizational form of intensive industrial poultry farming. Thus, on the basis of the state-owned plant «Yuzhnyi» one of the largest poultry farm for the chicken food eggs production «Yuzhna» of the Crimean region was organized in 1965²⁶.

Due to the intensification of the specialization of farms, egg production in collective and state farms, other state enterprises increased by 3.6 times in 1971 compared to 1965²⁷.

Under the leadership of the scientists of the Ukrainian Scientific Research Institute of Poultry at the state farm Krasnyi, the technology of chicken broiler breeding introduced for the first time not only in the Ukrainian SSR, but also in the Soviet Union as a whole.

With the development of this technology, the production of meat broilers has increased in the farm, and the indicators of economic efficiency have improved. For example, from 1967 to 1969, the profitability of meat production increased by 5.8 times. In consequence of the development of the broiler industry, the production of poultry meat has

²⁴ Український науково-дослідний інститут птахівництва / відп. ред. М.В. Дахновський. Київ: Видавництво УАСГН, 1961. 83 с.

²⁵ Об организации производства яиц и мяса птицы на промышленной основе. Постановление Совета Министров СССР и Центрального Комитета КПСС от 3 сентября 1964 г., № 740. Свод законов СССР. Москва: Известия. 1985. Т. 7. С. 512–517.

²⁶ Хачирашвили Г., Шперлинг М. Укреплять технологическую дисциплину, повышать рентабельность производства. *Птицеводство*. 1966. № 1. С. 7–9.

²⁷ Народное хозяйство Украинской ССР в 1973 году : статистический ежегодник. Киев: «Статистика», 1974. 584 с.

increased significantly in Ukraine as a whole. In 1971 compared with 1965, poultry meat was produced by 1.7 times more²⁸.

However, in the future, duck farming also developed and became an important reserve for the industrial production of poultry meat. Popularization of the experience of poultry farm Yagotinska, where in the early 60's the first time technology of growing ducks for meat without the use of water reservoirs was mastered, contributed to the rapid development of this industry in Ukraine²⁹. This farm has become a school of advanced experience in industrial production of duck meat.

There was a need to put into operation new poultry farms and other state poultry farms, the introduction of advanced technologies for intensification of the poultry industry. In this regard, in 1971, a resolution "On measures to further increase the production of eggs and poultry meat on an industrial basis" was approved³⁰. In accordance with its decisions, it was required to use lightweight combined and other modern designs of industrial poultry farming for the construction of poultry houses, to create favorable conditions for the use of full-fodder feed in poultry feeding.

It should be noted that during 1964–1971 the basic scientific and methodological support for the development of the poultry industry in Ukraine was also carried out by the Ukrainian Scientific Research Institute of Poultry.

Scientists of the Institute have developed a number of recommendations on the breeding of broilers, including for collective and state farms, the organization of specialized poultry farms for the production of chicken eggs, for raising the productivity and breeding qualities of poultry, as well as for the production of combined silage³¹. In the period of our research, the special attention of scientists attracted advances in the development of the broiler industry, since this particular direction allows us to solve the problem of meat production in Ukraine at present.

²⁸ Народное хозяйство Украинской ССР в 1973 году : статистический ежегодник. Киев: «Статистика», 1974. 584 с.

²⁹ Божко П. Е. Сенников А. А. Производство утиного мяса в совхозе «Яготинский». М.: Колос, 1965. 152 с.

³⁰ О мерах по дальнейшему увеличению производства яиц и мяса птицы на промышленной основе. Постановление Центрального Комитета КПСС и Совета Министров СССР от 26 февраля 1971 г., № 165. Свод законов СССР. Москва: Известия, 1985. Т. 7. С. 517–519.

³¹ Библиографический указатель печатных работ сотрудников Украинского научно-исследовательского института птицеводства (1930–1980) / под общ. ред. А.В. Шомина. Харьков, 1983. 102 с.

So Yu.N. Batyuzhevskiy and I.Ya. Titskiy have developed full-fodder feed for broilers. S.A. Vodolazhchenko paid attention to the feeding of broilers, as well as the use of protein feeds made from poultry waste. The scientist continued research on the influence of fodder antibiotics on the organism of the poultry, the study of the mechanism of its action. Significant contribution to the development of artificial incubation were the results of research conducted by V.O. Brestslavets, who during this period studied the influence of hens' age on the physical and chemical properties and quality of eggs, embryogenesis and post-embryonic development of chickens. A.U. Bykhovets continued to improve the methods of technology for the incubation of poultry eggs, however the most of his research was aimed at improving the modes and technology of incubation of meat chicken eggs³².

In this period, the interlinear hybridization of chickens in Ukraine becomes the main method of obtaining broiler chickens. Selection work was carried out on the creation of domestic specialized lines for the production of broiler chickens, but at the same time they imported poultry from abroad. P.M. Sliusar studied the dynamics of the tribal and productive qualities of different lines of chickens of Cornish and Plymutrok White breeds, and assessed its the combination³³. So, already at that time scientists began to use lines of Cornish and Plymutrok White breeds as parental forms for hybrid broilers creation.

The next (third) stage of poultry development covers 1971–1982. The upper limit of this period is related to the approval the Food Program of the USSR for the period until 1990 in May of 1982³⁴. One of the outstanding scientific achievements in this period in the development of egg poultry farming was that, as a result of many years of work with the use of poultry of foreign selection, scientists from the Ukrainian Scientific Research Institute of Poultry created the “Birky–I” and “Birky–II” crosses. Hybrid egg-laying hens of these crosses were well adapted to the conditions of cage keeping³⁵.

³² Там само.

³³ Слюсар П. М. Селекція ліній курей порід корніш і плімутрок в процесі їх акліматизації. *Птахівництво: міжвід. темат. наук. зб.* Київ: Урожай, 1969. Вип. 8. С. 31–37.

³⁴ *Продовольственная программа СССР на период до 1990 года и меры по ее реализации* : материалы майского Пленума ЦК КПСС 1982 г. Москва: Политиздат, 1984. 111 с.

³⁵ Косенко Н. Ф., Сапронова Н. И., Ольховик Л. А. Методические рекомендации по использованию яичных кроссов «Борки-I» и «Борки-II». Харьков, 1978. 10 с.

Egg production in collective and state farms, other state enterprises of Ukraine in 1981 compared with 1971 increased by 2.3 times³⁶.

Already at the beginning of the 70s, Ukraine has gained considerable experience in organizing meat broilers production in poultry farms of the public sector. Successful development of broiler production depended largely on the organization of a number of breeding poultry farms for meat chickens breeding. The maximum indexes of poultry productivity at its breeding for meat at the lowest feed costs per unit increment of live weight provided of hybrid chicks raising, which obtained by crossing the connecting lines.

Chicken broilers were grown mainly on the floor on deep litter, but already in the early 70's of the 20th century scientists developed a method of its cage keeping. However, at that time, there has not developed a specialized cage battery for the keeping of broilers yet. The effectiveness of broiler keeping in the cages studied using home-made and reconstruction cages³⁷.

Solving the problem of poultry meat providing of Ukrainian population particular attention was given to turkey farming. For example, in order to increase the number of turkeys in 1977, they planned to put into operation the Golovuriv breeding poultry plant and the Verkhnio-dniprovskyi reproducer³⁸.

In general, in Ukraine there was a tendency to increase the production of poultry meat by 1.6 times in 1981 compared with 1971^{39,40}.

Scientists of the Ukrainian Scientific Research Institute of Poultry continued research on various areas of poultry farming. A.B. Baidevaliatov conducted a series of experimental works that solved the problems of veterinary and sanitary measures in poultry and prophylaxis of poultry diseases, in particular, through its immunization; K.O. Bahmet devoted his scientific papers to the problems of hygiene in poultry houses; I.Yu. Bezrukava, I.M. Doroshko, E.S. Ostrovskaya, B.V. Litovchenko, V.F. Nesterenko, S.E. Brodetzka, V.F. Ivashchenko worked on the

³⁶ Народное хозяйство Украинской ССР в 1973 году : статистический ежегодник. Киев: «Статистика», 1974. 584 с.

³⁷ Куров Ю. А. Птахівництво на промисловій основі. Київ: Урожай, 1973. 80 с.

³⁸ Коваленко А. Развитие мясного птицеводства на Украине. *Птицеводство*. 1977. № 8. С. 7–9.

³⁹ Народне господарство Української РСР у 1984 році : стат. щорічник / відп. за вип. Б. А. Сівко. Київ: Техніка, 1985. 406 с.

⁴⁰ Народное хозяйство Украинской ССР в 1973 году : статистический ежегодник. Киев: «Статистика», 1974. 584 с.

development of vaccine against viral hepatitis of ducklings; research of Yu.N. Batiuzhevskiy, S.A. Vodolazhenka, V.F. Caravanshenko, Yu.M. Nasonova, V.I. Konovalova, T.Ya. Sopochnikova and others were aimed on improving the rationing of poultry feeding, solving the problem of poultry providing with highly protein-based animal feeds, proved the efficiency of calculating the recipes of mixed foddors using an electronic computer, etc.

The papers of O.T. Hadiuchko, G.T. Kovalenko, V.P. Kovalenko, Yu.V. Bondarenko, I.A. Stepanenko, V.D. Lukianova, O.D. Podstreshnyi, V.O. Sergeiev, V.D. Sergeiev devoted to breeding work. V.I. Bessulin, I.K. Reut, M.I. Sakhatskiy, O.P. Bondarenko and others developed methods of artificial insemination of poultry, mainly turkeys; V.O. Breslavets, V.O. Lukianov and others studied methods of long-term storage of eggs. A.U. Bykhovets, and O.M. Mikhailenko investigated the embryonic viability of the poultry, developed methods for improving the quality of eggs and the modes of incubation; A.A. Popov, L.G. Prokudina, P.M. Locksmith and others paid attention to the technological methods of poultry keeping⁴¹.

The fourth period of development of poultry farming covers the period 1982–1991. This period ends with the collapse of the USSR and the acquisition of Ukraine as an independent state.

Poultry farming continued to develop. The egg production in this period increased until 1988, and poultry meat until 1989⁴². In the future, there was a decrease in production of this product. At the same time, in 1991⁴³ compared with 1981⁴⁴ in all categories of farms, poultry meat production increased by 1.2, and eggs decreased by 0.4%, however, in public sector farms, the production of eggs increased by 0.8%. For the production of eggs, hybrid poultry continued to be used, and at the same time, poultry farms in Ukraine began to spread the poultry cross of various types of foreign selection.

⁴¹ Библиографический указатель печатных работ сотрудников Украинского научно-исследовательского института птицеводства (1930–1980) / под общ. ред. А.В. Шомина. Харьков, 1983. 102 с.

⁴² Народне господарство Української РСР у 1990 році : стат. щорічник / від. за вип. В. В. Самченко. Київ: Техніка, 1991. 496 с.

⁴³ Народне господарство Української РСР у 1991 році : стат. щорічник / від. за вип. В. В. Самченко. Київ: Техніка, 1992. 468 с.

⁴⁴ Народне господарство Української РСР у 1984 році : стат. щорічник / відп. за вип. Б. А. Сівко. Київ: Техніка, 1985. 406 с.

Although the main direction in the development of meat poultry farming was broiler production, it was important to have a duck farming. Due to the proliferation of intensive meat duck breeding, the share of duck meat in the Ukrainian SSR in the late 1980`s exceeded 20% (from the total amount of poultry meat)⁴⁵.

The research of the scientists of the Ukrainian Scientific Research Institute of Poultry, which remained at the forefront of scientific support for the development of poultry farming in this period, aimed at solving the problems of poultry feeding and keeping, egg incubating, artificial insemination, selection and breeding work, disease prevention, veterinary and sanitary measures in poultry houses etc.

In particular, D.S. Cherniatin studied the poultry productivity for using rations based on heat-treated soybeans; P.F. Suray investigated the content of vitamins in organs and tissues of poultry and the effectiveness of various products of vitamin E; G.D. Shabelnik studied the effectiveness of replacing the protein of animal origin with herbal alfalfa flour; Yu.N. Batyuzhevskiy, M.M. Lemesheva proved the effectiveness of the use of limited feeding of repair turkeys.

N.I. Bratyshko determined the biological availability of B vitamins from feed of microbiological synthesis for chicken broilers; E.A. Duiunov, Yu.O. Riabokon, O. Hadiuchko developed the ways to increase the fertility of the turkeys of maternal lines of parental forms; V. D. Lukianova, T.V. Ivanova, V.P. Kovalenko solved the problem of safe the effect of multiple heterosis in poultry farming; V.I. Besulin, P.M. Karkach, M.I. Sakhatskiy, O.V. Tereschenko improved the methods of deep freezing of semen of poultry male and other⁴⁶.

The organization of breeding work is an integral part of the technological process for the production of poultry eggs and meat, and therefore the scientists of the Ukrainian Scientific Research Institute of Poultry developed a plan for selection and breeding work in the poultry industry of the Ukrainian SSR for 1986–2007 and up to 2000.

Thus, it should be noted, the significant development of poultry farming in the second half of the 20th century in the Ukrainian SSR was its transfer into an industrial base, scientific and methodological support provided by scientists of the Ukrainian Scientific Research Institute of Poultry.

⁴⁵ Кадура М. І., Пономарьова Ж. В., Шищенко С. П. Виробництво качиноного м'яса на інтенсивній основі. К.:Урожай, 1988. 96 с.

⁴⁶ Друковані праці співробітників Державної дослідної станції птахівництва НААН за 1981–2016 роки : [бібліографічний покажчик] / А.П. Пономарьова. Бірки, 2016. 211 с.

2. Development of Poultry Farming in Ukraine at the Beginning of the 21st Century

The second stage of the development of poultry farming in Ukraine in the 90s of the 20th – the beginning of the 21st century is the period of independence. At present, the poultry industry in Ukraine is one of the leading directions. However, in the 90s, after the collapse of the USSR, a general economic crisis took place in Ukraine, which also negatively affected poultry farming. At the same time, the analysis of statistical data shows that during 1991–1997 the number of poultry was rapidly decreasing in farms of all categories.

However, in 1998, there was even some increase in the number of poultry and this indicator had almost stabilized by 2001⁴⁷. During 2002–2014, there was an increase in the number of poultry, and in the future, due to political changes in Ukraine, the number of poultry taken into account without the temporarily occupied territory of the Autonomous Republic of Crimea, the city of Sevastopol and part of the temporarily occupied territories in the Donetsk and Luhansk regions. In this regard, during 2014–2015, the number of poultry in Ukraine has started to decrease again, the livestock has stabilized and in 2018, it began to recover (to increase). The egg and meat production in Ukraine during the times of independence had almost the same tendency as the dynamics of the poultry stock.

In the new market conditions, poultry managers began buying poultry of modern crosses, equipment, feed supplements and veterinary drugs in western countries. This has enabled, since 1998, to increase the production of poultry eggs and meat. However, the rebirth of poultry farming in Ukraine accompanied by the import of poultry of egg and meat crosses from abroad.

As a result, the part of poultry crosses of domestic breeding began to decrease. Thus, in the early 2000's, the crossing of egg chickens "Birky-2M" and "Birky-117" of Institute of Poultry of Ukrainian Academy of Agrarian Sciences (UAAS) turned out to be not competitive compared to the widespread autosex foreign crosses. In connection with this, tribal work with these crosses was discontinued and breeding work with other genetic resources was expanded⁴⁸.

⁴⁷ Державна служба статистики України URL: <http://ukrstat.gov.ua/> (дата звернення 25.05.2019).

⁴⁸ Степаненко І. А., Коваленко Г. Т., Іванова Т. В., Гадючко О. Т., Ваврійчук Т. В., Луніна Л. А. Дослідне господарство «Борки»: племінні ресурси і напрями селекційної роботи з ними. *Сучасне птахівництво*. 2004. № 10. С.1–6.

Consequently, Ukrainian scientists continued breeding work with poultry including egg crosses. Thus, in 2007, turkey cross Kharkivskiyi-56 was approved by the order of the Ministry of Agrarian Policy of Ukraine and the Ukrainian Academy of Agrarian Sciences under No. 780/110. And in 2016, plant line G2 of meat-and-egg chickens of the Plymutrok White breed approved by order No. 146 of April 11.⁴⁹ The organization-originator of this line recognized the State Research Station of Poultry of NAAS. The authors of this breeding achievement, which owns the largest part of participation in its creation, are Yu.V. Bondarenko, O.O. Katerynych and O.P. Zakharchenko.

In Ukraine, at the beginning of the 21st century, an increase in poultry production was due to the significant financial resources involved in the reconstruction and technical re-equipment and expansion of production capacities on base use of high-productive poultry crosses. Favorable ground for the development of poultry farming has led to the emergence of new farms that specialize in the production of poultry eggs and meat and needed scientific support for the organization of successful business. For this purpose, the scientists of the Institute of Poultry of UAAS developed model investment projects for the creation of poultry breeding enterprises for poultry production, namely: chicken food eggs, broiler meat, ducks, turkeys and geese⁵⁰.

Thus, the leading institution that carried out scientific support of the poultry industry in Ukraine during the years of independence was Institute of Poultry of National Academy of Agrarian Sciences of Ukraine (NAAS), which several times reorganized, namely: in 2011, according to the order of the NAAS No. 297 of November 3 this institution was transformed into a scientific subdivision of the Institute of Animal Husbandry of the NAAS, and from December 2013 (the order of the NAAS No. 166 of 10.12.2013) and to date it has the status of a State Research Station for Poultry, which is subordinate to the NAAS.

However, scientists of other institutions, in particular the National University of Life and Environmental Sciences (NULES) of Ukraine, also made a significant contribution to the scientific support of the poultry

⁴⁹ Гадючко О., Катеринич О., Терещенко О., Рябоконт Ю. Дієтична птиця – в перспективі 2009. URL: <https://propozitsiya.com/dietchna-ptiца-v-perspektivi> (дата звернення 25.05.2019).

⁵⁰ Збірник модельних інвестиційних проєктів створення птахівницьких підприємств з виробництва продукції птахівництва / За ред. Ю.О. Рябоконт. Бірки, 2005. 59 с.

industry at this stage. First of all, it is necessary to note the scientific activities of the school of Academician Ildus Ibatulovych Ibatullin (the first Vice-Rector of the NULES of Ukraine). About 70% of research conducted under his direction is devoted to solving problems of optimizing poultry feeding of different types and directions of productivity and feed technology. Among the representatives of the scientific school are: M.Yu. Sychov, V.V. Otchenashko, M.Ya. Krivenok, K.Yu. Yastrebov, A.I. Chigrin, N.M. Slobodianyuk, L.M. Zlamaniuk, I.I. Ilchuk, V.M. Kondratiuk, D.P. Umanets, O.V. Yatsenko, V.M. Nedashkivskiyi, I.M. Balanchuk, R.V. Martyniuk, M.I. Golubev, S.V. Boiarchuk, R.M. Deineko, and others⁵¹. Doctor of Agricultural Sciences, Professor Vitalii Petrovych Borodai headed the Department of Poultry Farming in 1995–2010 and under his leadership were conducted a number of the studies on poultry farming in accordance with state scientific subjects.

Academician M.I. Sakhatskyi (former director of the Institute of Poultry of UAAS, in 1988–2003) presently works as the head of the Biology Department of NULES of Ukraine and prepares young scientists who under his direction conduct research on improving the technology of broiler chicken keeping.

It should be emphasized that the NULES of Ukraine not only provides scientific support to the development of the poultry industry, but also trains staff-specialists in the educational stages “Bachelor” and “Master”.

It should also be noted that the coordination role in the field of poultry farming in Ukraine during the years of independence was also carried out by such associations as Ukrpoultryindustry and the Association “Poultry Union of Ukraine”, which was established in 2003 as a result of the unification of Ukrainian industry-producers of poultry farming. This association sees its mission as creating favorable conditions for the development of the poultry industry in Ukraine.

CONCLUSIONS

Thus, in the development of poultry farming in Ukraine in the second half of the 20th – the beginning of the 21st centuries we identified two stages: the first covers 1951–1991, the second – 1991–2018. In the first stage, we identified periods: the first – 1951–1964, the second – 1964–1971, the third – 1971–1982 and the fourth – 1982–1991.

⁵¹ Людина високого інтелекту та нестримної енергії: до 70-річчя від дня народження академіка НААН Ібатуліна Ільдуса Ібатулловича / за заг. ред. С.М. Ніколаєнка. К.: Аграрна наука, 2016. 208 с.

At the first stage, which begins in the middle of the 20th century, poultry farming is characterized by seasonal production. Poultry farming of the public sector was mainly concentrated in the collective farms, the system of poultry keeping was extensive, using pasture for geese and turkeys and water reservoirs for waterfowl. Ukrainian scientists created a Large Gray Goose breed, a breed groups of Ukrainian ducks. Considerable attention was paid to breeding of the ducks for the meat production. M.V. Dakhnovskyi developed a method of duck growing in the water reservoirs using natural feeds. However, already in the early 60's the state farm "Yagotynskyi" was put into operation, where for the first time the breeding of the ducklings was introduced without the use of water reservoirs and at the same time they used dry feed mixes.

However, a considerable increase in poultry farming occurred after its official transfer to the industrial base in 1964. From this period, broiler production has been favored in the production of poultry meat. They keep broilers on the floor, on the deep litter, and in cage batteries. At the same time, they paid attention to the development of duck and turkey farming, where intensive methods of poultry breeding for meat were widespread. For eggs and meat production linear and hybrid poultry were increasingly used. It was created the domestic crosses of egg chickens "Birky-I" and "Birky-II" were created.

In general, scientific and methodological support of the development of poultry farming was carried out by scientists at the Ukrainian Scientific Research Institute of Poultry. Thus, in different years of the stage 1951–1991, A.U. Bykhovets, I.S. Skuratov, L.M. Belov, M.G. Kurdiukov, T.S. Len, V.I. Butovska, M.B. Dubovskyi, M.V. Dahnovskyi, M.O. Demchenko, I.Ya. Titskyi, V.V. Haskin, A.B. Baidevalatov, K.O. Bahmet, I.Yu. Bezrukava, I.M. Doroshko, E.S. Ostrovskaia, B.V. Litovchenko, V.F. Nesterenko, S.E. Brodetzka, V.F. Ivashchenko, Yu.N. Batiuzhevskyi, S.A. Vodolazhchenko, V.F. Karavashenko, Yu.M. Nasonov, V.I. Konovarov, T.Ya. Sapozhnikova, O.T. Hadiuchko, G.T. Kovalenko, V.P. Kovalenko, Yu.V. Bondarenko, I.A. Stepanenko, V.D. Lukyanova, O.D. Podstrazhnyi, V.O. Sergeiev, V.D. Sergeiev; V.I. Besulin, I.K. Reut, M.I. Sakhatskyi, O.P. Bondarenko, V.O. Breslavets, V.O. Lukyanov, A.A. Popov, L.G. Prokudina, P.M. Sliusar and others made a significant contribution to the development of poultry farming.

During the period of independence, the poultry industry of Ukraine experienced the periods of decline (1991-1997), stabilization, and gradual recovery. The Institute of Poultry of UAAN has played an important role in the organizational and scientific provision of poultry farming. It has undergone reorganization changes and now has the status of the State Research Station of Poultry of the NAAS.

Thus, poultry breeding in Ukraine is currently the leading sector of animal husbandry and continues to develop.

The prospects for further research are the study of the achievements of some Ukrainian scientists who have made a significant contribution to the development of domestic poultry industry.

SUMMARY

The article shows the development of poultry farming in Ukraine in the second half of the 20th – the beginning of the 21st centuries. Author has identified two its stages: the first covers 1951-1991, the second – 1991–2018. The article highlights four periods of the first stage: the first – 1951–1964, the second – 1964–1971, the third – 1971–1982, fourth – 1982–1991. Development of all directions of poultry farming was characterized, the dynamics of poultry eggs and meat production was analyzed according to certain stages and periods. It was shown that the basic scientific and methodological support of the poultry industry was assigned to the Ukrainian Scientific Research Institute of Poultry, which during the studied period undergone structural changes, and presently has the status of the State Research Station of Poultry of the National Academy of Agrarian Sciences of Ukraine. The main directions of researches of Ukrainian scientists, who made a significant contribution to the development of poultry farming, were presented. The scientific activities of researchers of the National University of Life and Environmental Sciences of Ukraine, which solves the problems of modern poultry farming in Ukraine, was covered.

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