

**O. Riabinina, Candidate of Agricultural Sciences**  
**O. Katerynych, Doctor of Agricultural Sciences**  
**State Research Station of Poultry Industry of NAAS**

## **TECHNOLOGICAL METHOD OF GROWING REPAIR YOUNG TURKEYS DIFFERENTIATED ON ALIVE MASS**

**The purpose.** To develop technological method of ranging by alive mass repair young turkeys at their growing. **Methods.** Level of growing repair young birds was determined in view of alive mass and level of homogeneity in 20- and 30-week age. Presence of traumas at auk, preservation and expenses of feedstuff were determined on the basis of daily count. Yield of conditioned repair young birds was determined according to bonitation of turkeys in 30-week age. Efficiency of the offered method was determined by means of European Productivity Factor Index of production factors. **Results.** Differentiation by alive mass and feeding growing of repair young turkeys has allowed: to reduce expenses of feedstuffs for 1 bird — for 9,8%, for 1 kg of increase of alive mass — for 9,2 – 20,4%; to raise homogeneity of livestock as to alive mass and yield of conditioned pullets — for 10,2 – 19,6% ( $P < 0,05$ ); to promote increase of egg production of turkeys — for 6,5% (fatherly line) and 3,2% (maternal line), amount of hatchable eggs — for 2,2 and 0,7% accordingly, quantity of the bred turkey poultries — for 5 and 1,2 heads accordingly. Over-all economic benefit of the differentiated by alive mass and feedings growing of parental herd of turkeys has made 98,3 hrn/head.

**Conclusions.** Key parameters of ranging turkeys by alive mass are specified and technological method of their differentiated selection, growing, content and feeding is developed.

**Key words:** selection, growing, content, feeding, turkeys, poultry farming.

**Introduction.** Poultry farming is one of the most important branches of the agro-industrial complex in Ukraine and in the world, since it enables, at relatively low cost of material and technical resources, to receive high-quality, cheap and affordable protein products for the general population.

Meat turkeys stands high taste and dietary qualities. The protein content is higher in it than in broilers, and an average of 21.6% (broilers 18.7%). According to the index of protein content in muscle tissue, the turkey is significantly different from that of analogues - 28%. By the number of easily digestible proteins, essential amino acids and B vitamins, low fat and turkeys cholesterol predominate meat of other species of poultry. Therefore, in many countries with a high culture of food, turkey meat is a prominent place on the table.

In Ukraine, taking into account private farms, it now produces from 20 to 30 thousand tons of turkey meat (1.5-2.0% of the total production of poultry meat), which per capita is 450-680 g. However, the demand for these products has a steady growth trend.

In accordance with the "Indigenous Development Program in Ukraine ...", developed by the Ministry of Agrarian Policy and a number of specialized institutions, the industry is tasked in the near future to bring the production of turkey meat to 200 thousand tons per year and reach the average European level of its consumption - about 4 kg per per capita. The increase in the production of turkey meat is expected both due to the use of the best crossings of the leading foreign breeding companies, as well as at the expense of the use of the domestic cross of turkeys Kharkov.

The turkey cross of Kharkiv is well adapted to the climatic conditions of Ukraine and the local fodder base, characterized by high speediness and good meat qualities. The live weight of females in the late-child reaches 8-9 kg, and males 14 - 20 kg [1]. At the same time, as evidenced by the experience of growing and keeping this turkey cross in the Borky and in the experimental farm "Preservation of the state poultry gene pool" (State research poultry station NAAS), when heterogeneity of the livestock occurs when grown young breeding stock of the parent forms of the cross (lines 5 and 6) for live weight. This leads to the fact that heavier and stronger individuals dominate the consumption of feed, the choice of the best place for placement, as a consequence - to further increase the existing differences in weight, negatively affecting the conservation of the bird, its zootechnical performance and reproductive qualities.

The purpose of the research is the development of a technological acceptance of the ranking for live weight growing of young breeding young turkeys of the Kharkiv cross.

**Research methods.** The work was carried out in the Department of Genetics, Selection and Technology of Bird Maintenance at the SRPS NAAS. The bird was grown when kept on the floor in conditions of the experimental farm "Preservation of the state poultry gene pool" SRPS NAAS. The formation of experimental groups was conducted at the age of 20. The control group served individuals without ranking for live weight. After separation, the turkeys of each weight category kept separately, taking into account the regulatory requirements for planting density, front feeding and feeding, and feed differentiated depending on live weight, expected growth of live weight and indoor temperature.

Correction of the dose of feed is carried out at least once a week, based on the results of weekly weighing of 20-50 turkeys of each weight category (depending on the amount of bird) for the next week, the average daily gain of live weight and the temperature in the room.

The level of growth of repair young animals was determined taking into account the live weight at the age of 20 and 30 and the homogeneity of the livestock by this indicator. The presence of injuries in the bird, the safety and consumption of feed - on a daily basis. Output of conditional repair young animals - according to the bonitating of turkeys at 30 weeks of age. The efficiency of the

proposed method was determined using the European Productivity Factor Index (EPEF).

**Research results.** Directed selection of birds in turkey breeding with parenting herds assumes high uniformity of repair young animals for live weight. On the contrary, the increase in the diversity of this indicator negatively affects the further conservation of the bird, its zootechnical performance and reproductive qualities. In order to improve the homogeneity of the herd and the release of conditioned young animals, a technological method of differentiated selection, growing and feeding of turkeys depending on live weight is proposed.

Such a scheme provides an opportunity to increase the output of conditioned repair young animals at the end of its cultivation. According to our research, youngsters grown under the typical technology at 20 weeks of age were divided into three weight categories (light, medium and heavy) according to the scheme shown (fig.). The average weight category includes turkeys with live weight in the range of + 10% of the average live weight for the whole livestock population; to light - turkeys having a live weight, less than 10% of the average; to the heavy - individuals with a mass greater than 10% for the average live weight of the whole livestock.

At the beginning of the study, the probability of difference in live weight between the experimental group (7.4 kg) and control (7.3 kg) was not established. At the same time, the homogeneity of the bird in the experimental group was significantly lower (67.6%) compared with the control (73.1%). After the experimental bird has been ranked, a probable ( $p \leq 0.001$ ) difference between the modal class ( $M^0$ ) and  $M^-$  and  $M^+$ , respectively, is 7.4, 6.4 and 8.3 kg. Turkeys from the  $M^-$  and  $M^+$  also differed significantly from those in the control group. At 30 weeks of age, along with the unbelievable advantage of experimental birds over the control of live weight (9.3 and 9.0 kg), a significant improvement was observed in its homogeneity, respectively, 85.3% vs. 65%. At that, the probable difference between the classes of poultry distribution remained. The overall uniformity of the bird within the classes significantly increased to 91.4 ( $M^-$ ) to 100 ( $M^0$  and  $M^+$ ) %.

Similar patterns have been established for maternal line 6. Despite the greater variety at the beginning of the research (at 20 weeks of age), respectively, 57.3 (trial) and 63.9 (control) %, a significant improvement was noted at the end. The live weight of repair young animals when transplanted in an adult herd in both groups is the same at 9.3 kg, with a greater homogeneity of livestock in the experiment - 87.5% vs. 74.3 %.

Poultry conservation in 10 weeks of research was at the maximum level (100 %). At the same time, according to observations, in control groups, there were significantly more cases of biting (cannibalism) birds than in experimental, respectively, 5 and 2 goals.

Formation of even weight groups contributes to improved feed conversion rates. So for the parent line (5), feed costs per kg of live weight gain are set at 10.8 versus 13.0 kg in control. At the same time, the minimum feed costs are set for the birds of the modal class  $M^0$  and  $M^-$ , respectively 9.5 and 9.6 kg. Similar results are

obtained for the maternal line (6). The best feed conversion was found in the experimental group of 10.9 versus 11.9 kg in the control. The minimum figure is also indicated for poultry  $M^0$  (9.7 kg) and  $M^-$  (9.8 kg). The output of the conditioned young in the experimental group of both lines was significantly (not necessarily) better, respectively 84.5-85.3 % (trial) and 65.7-74.3 % (control). In this case, the maximum values are set within the classes  $M^0$  and  $M^+$ .

Thus, according to the results of the research, it has been established that differentiated by the live weight of growing and feeding the repair youngsters of the Kharkiv cross-line gave the opportunity to: reduce feed costs by 1 point. on both lines of the cross by 9.8 %, by 1 kg of live weight gain by the 5th line by 9.2 %, by the 6th by 20.4 %, increase the homogeneity of the turkeys population by live weight and, accordingly, the release of conditional thumps on the 5th line by 19,6 % ( $p < 0,05$ ), the 6th line by 10,2 %. The effectiveness of the developed method has been confirmed by calculations of the EPEF (European Index of Efficiency of Production Factors). In the experimental group, they were significantly higher than in the control group: 23.7 units in the 5th line and 10.6 units in the 6th line.

At the age of 30 weeks, all the turkeys were transferred to a parent herd, where they continued to be kept and fed differentially for live weight.

**Conclusions.** Differentiated by the live weight of growing and feeding the young breeder of the Kharkiv cross made it possible to reduce feed costs by 1 point. by 9.8 %, by 1 kg of live weight gain by 9.2 - 20.4 %, increase the homogeneity of the livestock population and the release of conditional tubers by 10.2-19.6 % ( $p < 0.05$ ), contributed to the increase in the carcass weight of turkeys in the original turkey of the 5th line by 6.5 %, the 6th line by 3.2 %. The overall economic effect of the differentiated live weight of the maintenance and feeding of the parent herd of the Turks crossed the Kharkiv region at the head of 207 turkeys amounted to 20,339 UAH.

### **Bibliography**

1. *Resursozberihayuchi* ekolohichno bezpechni tekhnolohiyi vyrobnytstva m"yasa indykiv: Vyd. 2-he, pererob. i dopov.; za red. I. A. Ionova. — Birky, 2014. — 169 s.
2. *Performance*, slaughter value and meat quality of turkeys fed diets with different content of sunflower meal/J. Jankowski, A. Lecewicz, I. Chwastowska-Siwieck et al.//Arch. Geflügelk. — 2011. — V. 75 (2). — S. 104 – 112.
3. *Khvat V.* Indychny biznes/V. Khvat//Nashe ptakhivnytstvo. — 2013. — № 1. — 6 s.
4. *Tereshchenko O.V.* Suchasni napryamy rozvytku ptakhivnytstva Ukrayiny/O.V. Tereshchenko, O.O. Katerynych, O.V. Rozhkovs'kyi//Ptakhivnytstvo: mizhvid. temat. nauk. zb. — Kh., 2011. — Vyp. 67. — S. 65 – 73.
5. *Tereshchenko O.V.* Napryamy rozvytku haluzi ptakhivnytstva/O.V. Tereshchenko, O.O. Katerynych, S.M. Pan'kova//Visn. ahrar. nauky. — 2015. — № 5. — S. 27 – 30.

6. *Prohrama rozvytku indykyvnytstva Ukrayiny do 2015 roku: zatverdzhena nakazom Ministerstva ahraryoi polityky Ukrayiny, 2007. — № 340.*
7. *Ivko I.I. Dyferentsiyovane za zhyvoyu masoyu utrymannya indychok bat'kivs'koho stada/I.I. Ivko, V.O. Mel'nyk, O.H. Duniakov//Mater. 1-yi Ukr. konf. molodykh uchenykh z ptakhivnytstva. — Borky, 1994. — S. 51.*
8. *Kul'baba S.V. Utrymannya yayechnykh kurey pry dyferentsiyovanomu za zhyvoyu masoyu rozmishchenni yikh u klitkakh klitkovoyi batareyi/S.V. Kul'baba//Ptakhivnytstvo (Mater. VI Ukr. konf. po ptakhivnytstvu z mizhnarodnoyu uchastyu)/IP UAAN. — Kh., 2005. — Vyp. 57. — S. 316 – 321.*
9. *Strel'tsov V.A. Orhanyzatsyya vyrashchuvannya tsyplyat-broylerov, razdelennykh po polu v sutochnom vozraste/V.A. Strel'tsov, A.O. Khranchenkova, N.A. Martyshyna//Vestn. Bryanskoy hos. s.-kh. akademyy. — 2014. — Выр. № 2. — S. 31 – 33.*
10. *Samarakoon S.M.R. Strategies to Improve the Cost Effectiveness of Broiler Production/S.M.R. Samarakoon, K. Samarasinghe//Tropical Agricultural Research. — 2012. — V. 23 (4). — P. 338 – 346.*