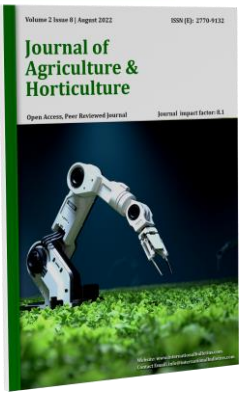


# GROWTH AND DEVELOPMENT OF RABBITS IN BROILER REARING

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Abstract. This article gives comparative data on growth, development and fattening qualities of rabbits from local population and their mixtures with Soviet Chinchilla and Flanders rabbits. Comparative analysis shows that crossbred rabbits have high growth and development and better meat qualities in broiler breeding.
Keywords: local population, breeds, growth, development, feeding, meat production.

Introduction. Rabbit breeding is a promising trend in animal husbandry as it provides an opportunity for the production of high quality products which are in demand. First of all it is high quality dietary meat. Owing to the biological characteristics of rabbits - multiplicity, high reproductivity, early maturity, forage payment - allows us to develop and achieve results even in conditions of rabbits breeding in industrial production and own backyards and provides both their own needs and opportunities to sell the meat.

In recent years, special attention has been paid to the development of the industry in Uzbekistan. Rabbit clusters, farms and dekhkan farms are being established in the republic. Rabbit farming is also developing among the population, and individual entrepreneurship in rural areas is developing.

To transfer the industry on an industrial basis it is necessary to develop and implement a rational technology for raising meat rabbits, to develop the formulation of feed mixtures, to identify the most early maturing breeds.

One of the innovative elements in the industry is the development of broiler rabbit breeding technology in the republic. The scientific development of this technology will produce 7 to 9 clutches per year; live weight of rabbit will reach 2-2,4 kg in 70-77 days. With the establishment of rabbit breeding complexes, the rabbit production sector in Uzbekistan will be strengthened, replacing the corresponding imports from other countries, as the proposed animals will meet the high demands of the domestic market. Inter-breed hybrids distinguished by their precocity and high adaptability will be created.

This technology will increase production due to an increase in the number of broodings per female by 1.5-1.7 times; increase production efficiency by increasing the number of young animals by 1.5-1.8 times; Reduction of capital and production costs by saving feed and using new lightweight cage materials; improvement of housing conditions by creating a microclimate close to natural conditions.

Research materials and methodology. The research was conducted in 2022 at the Research and Genetic Center of Rabbit Breeding on the local population of rabbits, as well as their mixtures Local x Flanders and Local x S.Chinchilla - 15 rabbits in each group. We studied the following indicators: growth and development of rabbits at birth, at the ages of 21, 30, 45 and

60 days; meat productivity at the age of 60 days, expenses of forages per unit production and per female rabbit.

Research results. Feeding of females and suckling young animals was carried out according to the standard forage pelleted feed the formulation of which was developed at the Centre of Breeding and Genetics of Rabbit Breeding. In 100 g of which respectively contained: exchange energy-232.9 kcal; feed units-0.75; crude protein-20.3; fat-4.3; crude fibre-12.4 g, calcium-730 mg, phosphorus-670; Carotene-96.1 mg/kg, vitamins B1-738 µg, B12-4.5, E-29.4 mg, iron-150; magnesium-3.4; manganese-65.7 µg/kg and zinc-28.7 mg/kg.

The feed costs for rearing broiler rabbits are shown in Table 1.

The local rabbits spent 3.1kg and 2.5kg less feed per nest per year than their flandering and chinchilla crossbred counterparts respectively. The most successful were Local x Flanders crossbred rabbits which spent 3.12kg of feed per 1kg of bodyweight which was 19.8% less than local rabbits and 3.2% less than Local x S. Chinchilla crossbred rabbits.

Table 1

Feed use in rearing broiler rabbits

| sort | Breeds Total fodder, kg per 1 nest without rabbits | per 1 kg body weight of rabbits consumed | |
|---|---|---|---|
| | | Nutritional units | Digestible protein |
| Local | 44,1 | 3,89 | 0,625 |
| Local x Flanders | 47,2 | 3,12 | 0,500 |
| Local x S. Chinchilla | 46,6 | 3,22 | 0,516 |

Broiler rearing of rabbits revealed the intensity of growth and development of the experimental animals.

The dynamics of change in live weight of the rabbits varied by period of growth (Table 2).

The most intensive growth was seen in the Local x Flanders crossbred rabbits which increased live weight by 27.6 times at 60 days. In the Local x S. Chinchilla crosses the gain was 26.8 and in the local population the gain was 26.2. The average daily gain in live weight of Local x Flanders crossbreds for the whole period of the trial was 25.2 g which was 13.0% higher than in local rabbits and 6.8% higher than in crossbred rabbits from Local x S.Shinchilla.

However, there was greater variability in body weight at 60-days of age. The variation coefficients of variation for this trait were in the range 8,24-18,67%. These data reflect the lack of proper selection for the traits of meat productivity.

It should be noted that the live weight of rabbits reared in the general farming level of feeding this indicator has been lower in previous years - 1.1kg. This indicates a slightly higher potential for broiler breeding in the development of meat rabbit breeding.

Table 2
Dynamics of changes in live weight of rabbits by growing period, g

| periods of the growing | living mass | Absolute increase | dayly increase |
|---|---|---|---|
| Local | | | |
| At birth | 53,1±0,01 | | |
| 21 day | 466,0±0,03 | 412,9±0,012 | 19,7 |
| 30 day | 665,3±0,02 | 199,3±0,022 | 22,1 |
| 45 day | 1015,8±0,04 | 350,5±0,015 | 23,4 |
| 60 day | 1390,0±0,03 | 374,2±0,02 | 24,9 |
| Total | | 1336,9 | 22,3 |
| Local x Flanders | | | |
| At birth | 56,7±0,01 | | |
| 21 day | 522,0±0,015 | 465,3±0,015 | 22,2 |
| 30 day | 739,0±0,02 | 217,0±0,012 | 24,1 |
| 45 day | 1144,0±0,022 | 405,0±0,014 | 27,0 |
| 60 day | 1570,0±0,02 | 426,0±0,011 | 28,4 |
| Total | | 1513,3 | 25,2 |
| Local x S. Chinchilla | | | |
| At birth | 54,7±0,01 | | |
| 21 day | 509,0±0,015 | 454,3±0,011 | 21,6 |
| 30 day | 711,0±0,03 | 202,0±0,015 | 22,4 |
| 45 day | 1072,0±0,015 | 361,0±0,013 | 24,1 |
| 60 day | 1470,0±0,02 | 398,0±0,01 | 26,5 |
| Total | | 1415,3 | 23,6 |

The study found that using intensive broiler type rearing of rabbits improves the exterior performance of the rabbits (Table 3). Thus, at broiler type of rearing the length of the body by 23,2%, chest circumference by 25,4%, width of loin by 18,7%, body weight by 43,3%; at mestiza Local x Flanders - by 27,3%; 20,3%; 24,7%; 23,6%; at mestiza Local x S.Chinchilla - 31,8%; 23,3%; 24,6%; 30,1% respectively compared to farm type of rearing.

Table 3
Growth and development of experimental rabbits

| factors | Household type of feeding | | | Broiler type feeding | | |
|---|---|---|---|---|---|---|
| | n | $\overline{X}$ ±S$\overline{x}$ | C% | n | $\overline{X}$ ±S$\overline{x}$ | C% |
| Local | | | | | | |
| Body weight | 15 | 0,97±0,01 | 13,7 | 15 | 1,39±0,03 | 10,3 |
| Torso length | 15 | 32,3±0,1 | 6,3 | 15 | 39,8±0,19 | 4,9 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Chest circumference | 15 | 18,9±0,07 | 6,6 | 15 | 23,7±0,21 | 8,1 |
| Lumbar width | 15 | 3,32±0,03 | 10,3 | 15 | 3,94±0,03 | 7,6 |
| Local x Flanders | | | | | | |
| Body weight | 15 | 1,21±0,01 | 14,3 | 15 | 1,57±0,02 | 10,1 |
| Torso length | 15 | 34,8±0,15 | 5,6 | 15 | 44,3±0,25 | 4,4 |
| Chest circumference | 15 | 21,2±0,01 | 6,8 | 15 | 25,5±0,24 | 7,3 |
| Lumbar width | 15 | 3,61±0,02 | 7,7 | 15 | 4,5±0,04 | 7,2 |
| Local x S. Chinchilla | | | | | | |
| Body weight | 15 | 1,13±0,01 | 12,1 | 15 | 1,47±0,02 | 9,6 |
| Torso length | 15 | 33,6±0,18 | 5,9 | 15 | 44,3±0,27 | 4,4 |
| Chest circumference | 15 | 20,6±0,01 | 6,8 | 15 | 25,4±0,31 | 8,9 |
| Lumbar width | 15 | 3,49±0,03 | 8,4 | 15 | 4,35±0,05 | 8,3 |

There were no significant differences in measurements between the groups of crossbred rabbits. Only in groups with weight below 1.4kg were noted lower values of latitudinal measurements.

The data shown in Table 2 shows that the increase in live weight of rabbits at two months of age depends mainly on the increase in waist width and chest circumference and to a lesser extent on body length. Therefore, improvement of the meat quality of rabbits must firstly follow the path of selection for latitudinal measurements.

It should be noted that this work is greatly simplified by the fact that wide measurements in most of the groups under consideration were characterized by a considerable range of variability (up to 13%), while as regards body length measurements, this figure varied in the range of 4.8-7.9%.

The results of our studies showed that crossbreds of Flandre and Sovetskaya Chinchilla breeds can be used for intensive meat rabbit breeding in crossbreeding.

Rabbits of these breeds respond to increased protein nutrition with increased live weight as well as better development of meat items. In particular, the width of the loin (loin) increases which indicates the development of muscles of the most valuable part of the carcass (fillet).

A wide range of variation in latitudinal measurements indicates the possibility of further selection of rabbits on the traits of meatiness under intensive breeding conditions.

Comparative analysis showed that under broiler rearing, the experimental groups of rabbits differed in meat productivity (Table 4).

The lowest slaughter weight and slaughter yield were observed in the local rabbit population (699.17 g and 50.3%), the highest was in the crossbred rabbits Local x Flanders - 822.68 g and 52.4%. In crossbred rabbits with Local x S. Chinchilla the flesh content of the carcass was 85.3%, which was 1.2% higher compared to peers in the local population and 2.7% higher compared to Local x Flanders. The highest fat yield was observed in rabbits of the local population.

Analysis of Table 4 shows that crossbred Local x Flanders rabbits are late maturing despite their high slaughter weight and slaughter yield.

Table 4
Slaughter rate of experimental rabbits, g

| factors | sort | | |
|---|---|---|---|
| | Local | Local x Flanders | Local x S. Chinchilla |
| Pre-slaughter live weight | 1390,0±0,03 | 1570,0±0,02 | 1470,0±0,02 |
| Slaughter weight | 699,17±1,11 | 822,68±4,12 | 758,52±2,25 |
| Slaughter yield,% | 50,3 | 52,4 | 51,6 |
| Weight of paired carcass | 687,07±1,01 | 813,08±0,98 | 747,22±1,1 |
| Carcass yield,% | 98,2 | 98,8 | 98,5 |
| Weight of internal fat | 12,1±0,05 | 9,6±0,06 | 11,3±0,03 |
| Internal fat yield,% | 1,7 | 1,1 | 1,4 |
| Content of carcass: flesh | 577,83±2,01 | 672,41±1,82 | 637,38±1,90 |
| bone content | 109,24±0,66 | 140,66±0,49 | 109,84±0,71 |

Conclusions. The study revealed that in order to improve the meat production of rabbits from the local population at broiler breeding it is necessary to use Local x S.Chinchilla crossbred young rabbits with compact body shape and high daily live weight gain and high meat content in the carcass.

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