

Analysis of Three Methods of Weaning on Selected Parameters of Broiler Rabbits

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Abstract

The goal was to compare three different ways of weaning on growth and mortality of rabbits. Three groups were formed. In Group 1 were pups from their mothers weaned on day 42. They were removed from the cage of a mother and transferred to new cages. In group 2 it was the 35th day of the entire litter and the mother transferred to a new cage. On day 42, the mother removed. In group 3 was the mother of the litter collected on day 42 and the pups remain in the original cage. It was not used any medication. We watched individual weight at 42, 49, 56, and 63. day life rabbits. We also observed mortality and health. In Group 1, we recorded the lowest level of growth 42 day - 956.05 g; day 49 - 1172.83 g; day 56 - 1315.45 g; 63. day - 1505.21 g. In group 2, we recorded growth levels 42nd day - 959.02 g; 49 day - 1212.23 g; day 56 - 1327.98 g; 63. day - 1520.39 g. In group 3, we recorded growth levels 42nd day - 958.02 g; 49 day - 1212.62 g; day 56 - 1336.35 g; 63. day - 1525.86 g. In group 1 mortality rate reached 28.21%. In Group 2, the mortality reached 11.11%. In Group 3 the mortality reached 6.38%. The cause of death was alimentary disorders.

Keywords: growth rabbits, rabbit, weaning.

1. Introduction

The most critical period in rabbit breeding is the period from weaning to age of about 60 days. In this period, the digestive tract is still poorly adapted to the use of solid food. Maternal milk very effectively suppresses pathogens in the digestive system of young rabbits. The incidence of eating disorders in young rabbits that receive breast milk is minimal.

Large-scale farming practices in animal husbandry with high concentrations of kept individuals often require the use of medication in nutrition, which ultimately reduces the safety of food production, and also invalidates the opinion of the consumer on the quality of commodities produced. In the past, feed antibiotics were widely used, which eliminated the negative

effect of high concentrations of farm animals, by influencing production and animal health. Currently 70 % of all diseases in rabbits are caused by infectious diseases of the digestive tract [1]. Digestive disorders cause high morbidity of rabbits, which is associated with growth depression, impaired feed conversion, and thus often results in an economic loss greater than mortality itself [2]. [3] analyzed the effect of two different preparations against rabbit's coccidiosis – naturally based preparation Emanox and conventional preparation Sulfacox – on selected production indicators. Showed that preparation Emanox PMX is a suitable alternative to conventional chemical preparations. [4] and [5] emphasizes the positive relationship of probiotics on the rabbit's health, reducing mortality and improving intensity of growth.

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[6] argues that the pathogenicity of these species is different and probably depends on the type and location of the coccidia.

Stabilization of the intestinal microflora plays an important role in the development and stability of the intestinal barrier and immunity of the host organism. However, exogenous factors - the weaning period, the changes in feed, the handling of animals, however, cause stress and this stability may be jeopardized [7].

Feeding a high-fat low-starch diet to early weaned rabbits stimulated growth and body fat and energy retention of kits at 32 days of age with no effect on caecal fermentation. The early weaning successfully performed at 21 days of age strongly stimulated caecal fermentation but reduced body protein reserves [8]. [9] monitored the effect of early weaning on development of internal organs and digestibility of nutrients in broiler rabbits.

The use of chemical coccidiostats has become a common practice in rabbit breeding.

The use of coccidiostats – in contrast to feed antibiotics – is not yet legislatively banned, but it is expected that EU legislation will prohibit the use of chemical coccidiostats in farm animal nutrition in the near future.

In rabbits, in addition to other pathogens, parasites with broad generic representation occurs quite often – coccidia. The addition of chemical coccidiostats in compound feed mixtures has a variety of drawbacks: loss of appetite accompanied by growth depression, the possibility of residues in meat and undesirable resistance of coccidia [10]. The use of coccidiostats in young rabbits after shredding recommends all special publications.

Weaned rabbits undergo stress that can be partially eliminated by breeding practices [11, 12]. Rabbits weaning methods describe [11, 12, 13]. Trends in the diet of broiler rabbits report [14]. [15] describes influence of the gastrointestinal microbiota on development of the immune system in young animals.

The goal was to compare three different ways of weaning on growth and mortality of rabbits.

2. Materials and methods

The experiments were carried out in small-scale keeping. Litters (5 – 9 pups per litter) were

obtained from primiparous and multiparous hybrid females (strain Hycole).

The females and pups were fed (*ad libitum*) with a complete feed mixture (15 % NL; 15 % fiber) + lantern hay (*ad libitum*). The females were naturally matured between 28 and 35 days after the litter. The females were housed in cages (60 cm wide x 80 cm depth x 50 cm high). Rabbits were housed on a wire floor. The same cages were used for pups after weaned.

After weaning put in collective cages (5 - 9 kits per cage). Three groups were formed (E1; E2; E3). In group E1 (6 does; 39 pups) were pups from their mothers weaned on day 42. They were removed from the cage of a mother and transferred to new cages. In group E2 (7 does; 45 pups) it was the 35th day of the entire litter and the mother transferred to a new cage. On day 42, the mother removed. In group E3 (7 does; 47 pups) was the mother of the litter collected on day 42 and the pups remain in the original cage. We watched individual weight at 42, 49, 56, and 63. day life rabbits. We also observed mortality and health. Individuals with digestive disorders were recorded and discarded for further monitoring.

It was not used any medication (without coccidiostat and acid).

3. Results and discussion

In group E1, we recorded the lowest level of growth (Table 1; 2; 3; 4). The results of growth without statistically significant differences.

In group E1 mortality (day rate reached 28.21% (11 individuals). Food-borne disorders (bloating of the gut and diarrhea) but no mortalities were detected in two individuals. (5.13 %).

In group E2, the mortality reached 11.11%. Food-borne disorders (bloating of the gut and diarrhea) but no mortalities were detected in one individual (2.22 %). [11, 12] report that the pups after weaning will not be transferred into new cages, it increases the stress. [13] states that over a period of 6 to 8 weeks, there is often increased mortality, as there is a change of hair and tooth replacement during this period. [9] describes higher digestibility of nutrients was recorded in the second period (day 56 – 63) that first period (day 42 – 49). The weight of kidney, heart, liver, full stomach, small intestine and caecum was not influenced by weaning age but the weight of

lings was higher in rabbits weaned at the age of 31 days and the weight of full colon was higher in rabbits weaned in rabbits weaned at the age of 25 days [9].

In group E3 the mortality reached 6.38%. The cause of death was alimentary disorders. Food disorders but no mortality was found in two individuals (4.26 %).

Table 1. Comparison of growth on day 42.

group	E1	E2	E3
n	39	45	47
x	956.05	959.02	958.02
s	132.72	102.46	110.73
v	13.88	10.68	11.56
x _{min.}	524	689	689
x _{max.}	1230	1128	1125

Table 2. Comparison of growth on day 49.

group	E1	E2	E3
n	34	43	45
x	1172.82	1212.23	1212.62
s	122.67	116.08	107.26
v	10.46	9.57	8.85
x _{min.}	956	963	924
x _{max.}	1411	1457	1365

Table 3. Comparison of growth on day 56.

group	E1	E2	E3
n	28	40	43
x	1315.36	1327.98	1336.35
s	95.15	75.07	148.57
v	7.23	5.65	11.12
x _{min.}	1115	1124	1025
x _{max.}	1524	1524	1753

Table 4. Comparison of growth on day 63.

group	E1	E2	E3
n	26	39	42
x	1505.04	1520.38	1525.86
s	175.54	102.18	119.05
v	11.66	6.72	7.80
x _{min.}	1201	1256	1259
x _{max.}	1920	1715	1723

4. Conclusions

The health status and utility in rabbits is often affected by exogenous factors (changes in nutrition, weaning, stress). By monitoring three different weeding methods (E1; E2; E3) we found minimal differences in rabbit growth ($P > 0.05$). Substantial differences were found in the mortality of the rabbits after weaning (E1 - 28.21%; E2 - 11.11%; E3 - 6.38%). Differences

between groups were also found in the number of rabbits with impaired health status (E1 - 5.13%, E2 - 2.22%, E3 - 4.26%). The results of this research are mainly used on smaller farms that produce rabbit meat without the use of medication.

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