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The Studing of Additional Technological Feeding of White English Quails With Mineral substances and Vitamins

Abstract

İn this research was shown the additional technology of feeding White English quails with mineral substances and vitamins. The investigation work was held in Azerbaijan State Agrarian University's "The Educational center of quail breeding", in the department of "Anatomy and non-infectious internal diseases" and in some farms of Goygol and Shamkir regions, and also in some individual White English quails breeding farms. In food portion it must be special nutritious matters, organic matters and vitamins. It must be used the fullfilment of mineral matters widely. The lack of minerals destroyed exchange of matters and belowed the durable to illness. During our investigation work it turned out that the vitamins have great role in White English quails food. The White English quails can be given calsium, chalk, cockshells, crumbled lime and other minerals in addition. (these matters can be given only if there isnt any poisinous effects in them).

Keywords: *White English quail, mineral matters, calcium, phosphor, Aydag mineral, the dust of marble, vitamin, ash*

Introduction

In recent years, due to certain production indicators and several specific features, the development of Azerbaijani poultry farming has reached the world level. An important direction in the non-oil sector of Azerbaijan is the accelerated development of livestock farming. In the conditions of increasing market competition in recent years, livestock farming is impossible without the application of innovative technologies. First of all, this applies to poultry farming, which is the most rapidly developing, scientifically intensive and high-tech field. According to experts, today poultry farming is considered one of the most profitable of the country's livestock farming. Such effect occurs when a short time and minimal costs are required to obtain a commodity product (Hajiyev, Mirzayev, Mammadov, Iskanderova, Hajiyev, 2019; Mammadli, Shahmarov, 2018 & Mammadli, 2015).

Research

The efficient use of poultry farming, including quail farming, in Azerbaijan has led to the diversification of the economy and the development of the non-oil sector. Diversification of the economy, like all other sectors, has created favorable opportunities for the development of the quail farming sector. The transformation of Azerbaijan into a country exporting agricultural products has also been chosen as the main goal. To achieve this goal, our country has all kinds of opportunities, and most importantly, state support. In addition to being of exceptional importance as the next

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stimulating step in the agricultural sector, it will also lead to a significant increase in interest in the quail farming sector, and ultimately to the production of quail meat and egg products. As can be seen, the attention and care shown by the state to the development of agriculture (poultry farming and quail farming), which is one of the priority sectors of the Azerbaijani economy, is increasing year by year (Gozalov, 2016; Tagiyev, 2013).

This branch of animal husbandry is exceptional in providing the population with the most valuable dietary products (eggs and poultry meat). The main issue in eliminating the backwardness in poultry farming is the specialization of this branch. It should be noted that in no other branch of animal husbandry do we have such extensive opportunities for concentrating production in one place. If the centralization of production in cattle and sheep breeding is due to the creation of a large arable land required to provide animals with various feeds and the difficulty of transporting feeds, then since poultry farming develops mainly at the expense of cereals, the ability to produce any amount of grain is possible for each farm (Wright, 2017; Rakhmanov, 2016).

The White English breed is one of the promising breeds and was brought to our country from Hungary in 1987. The color of the feathers of this quail breed is white, but occasionally black feathers can be found among the feathers. The live weight of females is 190-230 g, and that of males is 170-190 g. Females can lay eggs weighing 10-11 g from the age of 6 weeks and lay 280-310 eggs per year. The live weight of the White English breed females kept in ASAU and in the Ganja-Gazakh zone reaches even 300-310 grams, and that of roosters reaches 270-280 grams (Tagiyev, Adigozalova, Gozalov, 2015; Tagiyev, Zeynalova, Mammadov, 2021).

Conditions, materials and methods of the study. The study was conducted on White English quails raised at the "Quail Breeding Training Center" of ASAU, the "Therapy, Obstetrics and Surgery" department, and on some farms in Goygol and Shamkir regions, as well as on private farms. For the growth of young quails and the protection of the health of old quails, the body must receive regular mineral substances. Mineral substances participate in the metabolic processes in the body and have a great impact on the absorption and assimilation of nutrients. From the research work we conducted, it became clear that the amount of mineral substances in the feed we give to quails is not the same. Therefore, when compiling the feed ration, we controlled the presence of the necessary amount of mineral substances in it.

It has been determined that there are up to 60 mineral substances in the body of agricultural animals. Of these, Ca, P, Na and CI are considered the main ones to ensure normal nutrition. 65-70% of all minerals in the body of quail birds are calcium and phosphorus. These substances are more abundant in milk. Growing young quails have an acute need for calcium and phosphorus. Selection for growth rate has led to the fact that the development of the skeleton in them lags behind the formation of muscle tissue.

The research work showed that at an early age, in young animals, anomalies of the legs are often recorded: chondrodystrophy, dyschondroplasia of the greater tibia, "bowing", rickets. It was determined that in order to ensure maximum growth, high intensity of bone formation processes, and to reduce the number of anomalies of the legs, the levels of calcium and phosphorus in starter diets prepared for young meat quails should be as high as possible, 1.2 - 0.6%.

From our experiments, it became clear that in meeting the needs of White English quails for mineral and biologically active substances, special attention is paid to calcium, since the daily loss with eggshell alone is 2-2.5 g. If we take into account that 50% of the calcium in the feed is absorbed, then quails should receive at least 3.5-5 g of calcium per day. The use of 20 g of calcium from the bone skeleton of quails has a serious impact not only on the fragility of eggs, but also on their productivity and health. In order to achieve maximum absorption of calcium by the body, it is first necessary to regulate the need for vitamin D_3.

During the research work, it was found that phosphorus also plays a major role in increasing egg production. As a rule, quails absorb phosphorus more easily from animal feed than from grass feed. We recommended the use of the enzyme letase to improve the absorption of phosphorus, which is in a complex form in grass feed.

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The need for sodium in white English quails should be monitored more closely. Because an increase in the need for sodium is observed with drought (burn), which increases the humidity of the floor and increases the likelihood of infection with microbes and parasites. As a result of a deficiency, feather shedding and egg hatching may occur.

Balancing the feeds intended for white English quails with regard to the microelements copper, cobalt, iron, iodine, zinc, manganese, selenium prevents various unpleasant situations.

Plant feeds contain less than 5% ash. The stem and leaves of the plant contain 2 times more ash than the grain and root. The amount of ash is higher than that of plants belonging to the legume family than to plants belonging to the cereal family.

In nature, there are 40 types of zeolite used in animal husbandry and poultry farming, and the composition of these zeolites is very similar to each other.

Composition of Aydag mineral $(K_2N_2Ca) \cdot (Al_2Si7O_8) \cdot H_2O$ or depending on the location, it can sometimes take the following forms.

$(Na_2K_2Ca) \cdot (Al_2Si_{10}O_{24}) \cdot 7\ H_2O$

Academician Mirali Qashqay and scientists engaged in mineralogy in Azerbaijan show that there are 250 million tons of Aydag mineral reserves in the areas located near the cities of Nakhchivan and Tovuz.

Light green Aydag from the part near the Jalilli settlement near the city of Tovuz is widely used by us (in 1986-1996). During these periods, the use of Aydag zeolite was patented in the former Soviet Union by Professor A.A. Asgarov, Professor A.A. Tagiyev, Professor H. Mahmudov.

We used 2-5 g of Aydag feed ration given to white English quails, depending on age.

Note: Although Aydag mineral slightly reduces the nutritional value of the mixed feed, it does not affect the productivity of quails, because the digestibility and absorption of nutrients increases due to Aydag. In addition, the food as valuable as Aydag mineral added to the mixed feed is saved.

In order for the feed ration to be richer in macro-micro elements and oxygen compounds, it is important to use marble dust and lime. Chemical composition of marble dust and lime. Marble dust mainly consists of 98.54% calcium carbonate (CaCO3). MgO-0.15%, SiO2-0.45%, F2O3-0.62%, F-0.014%, S-0.005%. The chemical composition of lime is richer. Thus, lime contains oxides, chemical elements, and microelements (table 1) (Tagiyev, Mammadov, 2022).

Table 1. Chemical composition of lime

Chemical elements	Amount
CaO, %	50-52
$CaCO_3$+$MgCO_3$, %	90
Ca, %	34-39
Mg, mg/kg	6000
Si, mg/kg	19000
Fe, mg/kg	2500
K, mg/kg	1200
Al, mg/kg	3300
Na, mg/kg	2200
Mn, mg/kg	200
SO_4, mg/kg	400
P, mg/kg	100

The sample feed contains 1.0% zeolite, a natural mineral feed additive. The general chemical formula of zeolites is $(Na_2K_2$, Ca, Ba) $[(Al, Si)O_2]n \bullet H_2O$ (Tagiyev, Gozalov, 2021; Zeynalova, Mammadov, 2021).

Vitamins are special substances contained in the feed. They are of great importance for the normal functioning of quails. When quails lack vitamins, their metabolism is disrupted and diseases

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occur. When the disease occurs acutely, it is called “avitaminosis”. Avitaminosis usually seriously reduces productivity, hinders the growth and development of quails, and quails with avitaminosis sometimes die.

Several groups of vitamins are known. They are indicated by the Latin letters A, B, C, D, E, K and b. In addition, group B of vitamins includes vitamins B_1, B_2, B_6, B_{12}, and group D includes vitamins D_1, D_2, D_3. Vitamin K is important for normal blood clotting, and when it is lacking, the blood density of quails decreases. Vitamin K is found in the leaves of green plants, silage, grass, leaves of root crops, and grains of beans and cereals. Adding vitamin A to the feed ration increases egg production by 8.14%. Adding vitamin E to the feed ration can improve the quality of quail meat and increase fattening by 2-3%.

Vitamin E also creates favorable conditions for the accumulation of vitamin A reserves in the liver. When vitamin D is deficient, eggs become smaller, their number decreases, and their shells become thinner, resulting in quails suffering from bone cavity disease.

We added yeast, milk waste, fish oil, beetroot, silage, casein, as well as vitamin preparations A-300 mg, D-350 mg, B_2-300 mg, and B_1-200 mg to the feed ration of white English quails (Tagiyev, Zeynalova, 2021).

Conclusion

The results of the study showed that it is possible to increase interest in quail farming in our Republic and increase overall productivity by using White English breeds and using exemplary feed rations with different compositions. The task of the scientific research conducted for this purpose is to study the effect of different (cheap) feed rations in accordance with market demand on the productivity indicators of quails and the quality of the produced product.

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