Lucrări ştiinţifice **Zootehnie şi Biotehnologii**, vol. **41(1)** (**2008**), Timişoara

SPECIAL FEATURES THE FEEDING OF YOUNG OSTRICHES UNDER THE CONDITIONS OF THE REPUBLIC OF MOLDOVA

PARTICULARITĂŢILE ALIMENTAŢIEI TINERETULUI DE STRUŢ ÎN CONDIŢIILE REPUBLICII MOLDOVA

CAISÎN LARISA, GROSU NATALIA

Faculty of Animal Sciences and Biotechnologies, Chishinau, Moldova

There was analyzed and compared the nutritional posture of the young ostriches of different ages, reside at the farm "Anataction Investagro SRL" in conditions of Republic of Moldavia with offered pastures based on different normative dates and there was held the comparative analysis on the contends of food-value substances in them.

Key words: rations, ostrich, food, products, protein, energy

Introduction

Ostrich breeding is quite a new branch which in addition to meat and eggs can supply beautiful feathers, tough skin as good as the crocodile and elephant skin, and ecologically pure fertilizer – droppings.

The distinct characteristic of ostrich nutrition in comparison with other birds is that ostriches belong to the herbivorous animals that have a digestive tract, which can assimilate nourishing substances better than horses and rabbits. Their nutrition consists of 60 % of green or plain fodder, 15% of vegetables and fruit (carrots, apples, pears), 10-15% of cereals, 4-5% of meat and animal fodder (eggs, insects, small carnivorous), and also of mineral additions.

The difficulty in making up rations for ostriches is that they are improved taking into account either the productivity or in correspondence with their already formed habits. That is why, it is used for them the level of necessity in nutritive substances which is recommended for hens. Two indicators characterize the ostrich feeding: the quantity of fiber and the level of protein. To satisfy the need of ostriches in protein it is necessary that 50% of its level to be received with animal fodder and the rest of the quantity with the vegetative or other sources.

The newly hatched chicks up to 4-6 weeks are fed using the rations with a high concentration of protein (22-25%). For the ostriches from 6-8 weeks to 3-4 months the content of protein in the rations is reduced to 17-21%, and for the ostriches older than 3-4 months to 16-18%.

Ostriches can eat fodder with a high content of fiber and a low quantity of energy. Growing ostriches use up to 76% from the necessary exchange energy on the account of fiber utilization. The ostriches up to 3 months assimilate fiber badly, approximately at the same level as other birds, which eat cereals. Some authors (6,7) suggest the level of fiber be fewer than 8% in the period of their growing, 12% in the period of their fattening and 14% for pedigree chicks per whole ration.

The digestion of fat by the ostriches is 86-93%. But it is not recommended the ostriches use rations with content of fat higher than 6-8%.

The review of literature has shown that at present there is no difference of necessity in nutritious substances between the ostrich groups of different sex and age.

Materials and Methods

The purpose of the researches was to study the nutrition of ostrich chicks of South African breed in the condition of the Republic of Moldova.

During the researches it has been studied the chemical composition of the fodder (4), it has been analyzed the farm rations which are used at the ostrich farm "ANATACTION INVESTAGRO" Ltd, and it has also been worked out rations for chicks of different age. The rations have been controlled on the basis of the norm given in the literature data (1,3,5,7).

Results and Discussions

At the ostrich farm "ANATACTION INVESTAGRO" Ltd we have taken average fodder samples in order to carry out a chemical analysis (4).

The rations used at the farm has been calculated and analyzed using the data obtained during the zootechnical analysis of fodder and the literature data on some nutritious substances, as well as the indexes on the necessity in nutritive substances of chicks. On the basis of the study of the farm rations and normative data for ostriches (tab. 1) we have created ration recipes for chicks of different age of South African breed according to the conditions of the Republic of Moldova.

The determination of energy content in the ostrich rations has a fundamental importance. The literature sources suggest the level be from 2150 to 2870 kcal. In the rations proposed by us the exchange energy level for chicks in groups divided by age and sex is from 0.70 to 2.87 MJ, while in the farm rations it is 0.79-3.29 MJ (diagram 1).

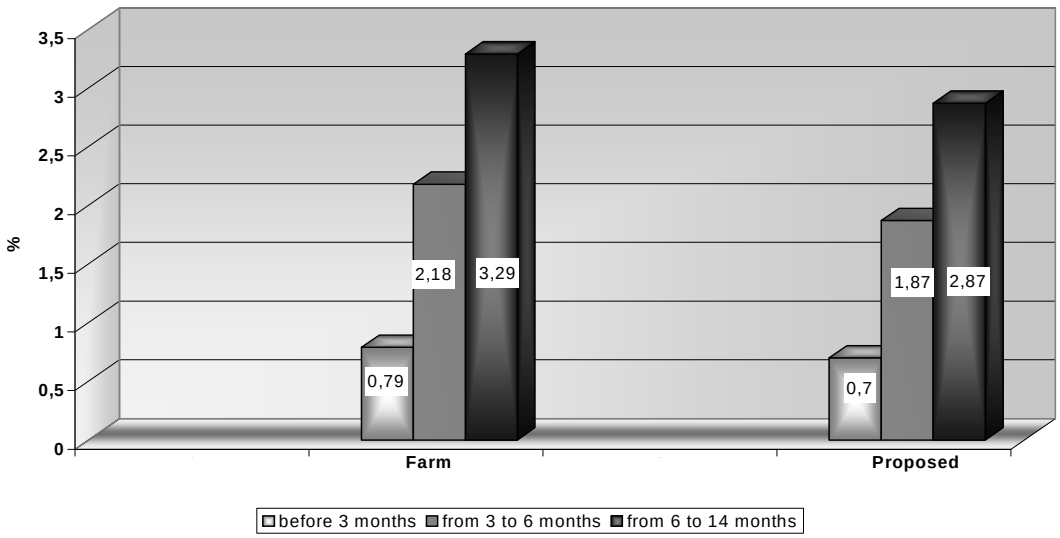
Table 1

The level of nutritive substances recommended for chicks

Indexes	Chicks, months of age			
	Up to 1	2	3-6	7-11
Exchange energy, kcal	2870	2630	2400	2150
Crude fiber, %	7	10	12	14
Crude proteine, g	22	18	16	14
Calcium, g	2.0	2.0	1.5	1.5
Phosphorus, g	1.0	1.0	0.75	0.75
Sodium, g	0.17	0.17	0.18	0.18
Lysin, g	1.20	1.00	0.85	0.6
Methionine, g	0.45	0.36	0.30	0.22
Methionine+cystine, g	0.78	0.65	0.55	0.39
Threonine, g	0.92	0.77	0.65	0.46
Isoleucine, g	1.0	0.86	0.73	0.52
Arginine, g	1.38	1.15	0.98	0.69
Tryptophane, g	0.25	0.21	0.18	0.13

Diagram 1

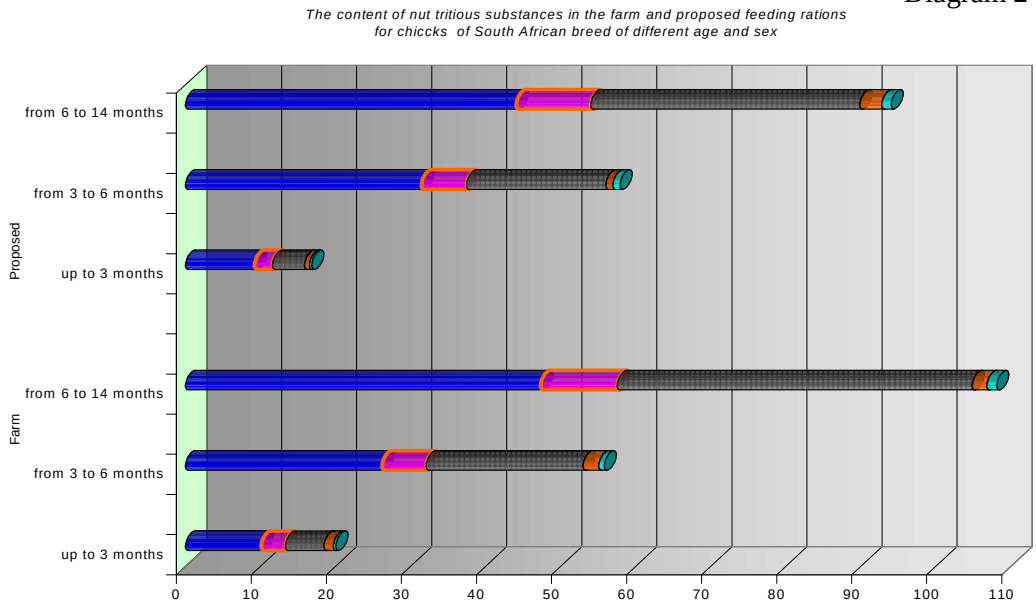
The content of exchange energy in the farm and proposed feeding rations for chicks of South African breed



The content of nutritious substances in the farm rations for chicks (diagram 2) was: crude protein for the age up to 3 months – 9.23g, from 3 to 6 months – 31.48g, from 6 to 14 months – 44.1 g, adequately in the proposed rations – 10.09g, 26.23g, and 47.34g. There are contradictory opinions regarding the necessity in

protein, the 24-hour necessity varies from 15 to 500 g per head depending on the age and productivity.

Diagram 2



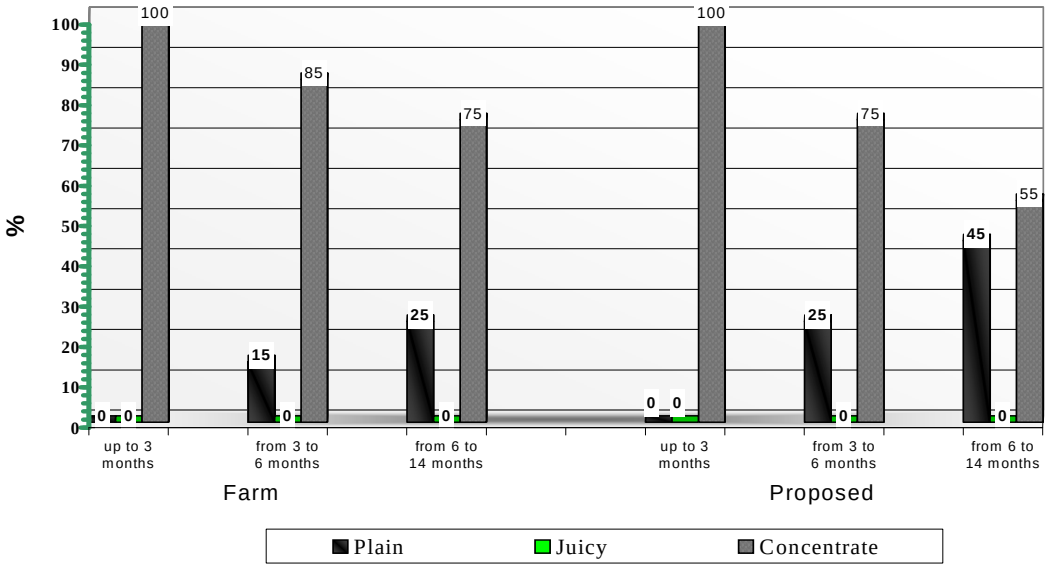
The fat level in the farm rations was at the age up to 3 months – 2.37g, from 3 to 6 months – 5.98g, from 6 to 14 months – 9.91g, and accordingly in the proposed rations – 3.23g, 5.85g, and 10.2g.

The fiber content in the rations must change proportionally with the age and the direction of productivity. In the farm rations the fiber level was at the age up to 3 months – 4.27g, from 3 to 6 months – 18.58g, from 6 to 14 months – 35.88g. In the proposed rations the content of fiber was accordingly – 5.14g, 20.92g, and 47.3g. In literature (Gheorghe Marin ş. a., 2001) the fiber level for the chicks of South African breed varies from 7 to 10 %. It is because of the ratio of fodder groups in the ration.

During the growing period the chicks need a high level of calcium for their skeleton formation. The rations for ostriches must contain 1.4-2.5% of calcium, and 0.7-1.5 of phosphorus.

Diagram 3

The structure of the farm and proposed feeding rations for the chicks of South African breed in the conditions of the Republic of Moldova



The analysis of the feeding rations for the chicks of South African breed has shown that (diagram 3) the content of plain fodder for the age up to 3 months was 0%, from 3 to 6 months - 15%, and from 6 to 14 months – 25 %. The concentrate fodder accordingly 100%, 85%, and 75%. Analyzing the rations proposed by us it has been proved that the content of plain fodder for the age up to 3 months is 0%, from 3 to 6 months – 25 %, and from 6 to 14 months – 45%, the concentrate fodder accordingly – 100%, 75%, and 55%. At the early stages of their growth, at the age from 0 to 3 months, the microbial flora that permits to digest the fiber is not developed in the ostriches. That is why plain fodder is not added into their rations.

Analyzing the farm and proposed rations it has been proved that in the structure of proposed rations the concentrate level is a little lower (with 20%) than in the farm rations.

Conclusions

1. The rations for chicks of South African breed used at the farm depending on the age period contain from 15% to 25% of plain fodder and from 75% to 100% of concentrate fodder.
2. In the created by us rations for chicks of South African breed the level of plain fodder has been increased to 45% and the level of concentrates has been decreased to 55% keeping the quantity of nutritious substances at the same level as in the farm rations.

3. In the conditions of the Republic of Moldova we propose to decrease the concentrate level in the rations for chicks of South African breed from 75% to 55%.
4. For the conditions of the Republic of Moldova there is an imperative necessity to determine and elaborate scientifically justified norms of nutritive substance utilization for all sex and age groups of ostriches.

Bibliography

1. **Baljicov I., Bendas M., Voronov M.** (1998) – *Practiceschie recomendatii po razvedeniiu strausov*, Moldova
2. **Afon I.** (1998) – *Povedenie strausov*, Москва
3. **Calaşnicov A.** (1985) – *Normî i raţionî cormlenia seliscohozeaistvennîh jivotnîh*, Moscva., Agropromizdat, 352
4. **Petuhova E.** (1989) – *Zootehniceschii analiz cormov*, Moscva., Agropromizdat,
5. *Pakistan Juornal of Nutrition* (2003) p. 60-67,
6. **Daryl Holle, Fiona Benson** (2001) - *Understanding production ostrich nutrition.*
7. **Marin Gheorghe** (2001) - *Creşterea struţilor*, Bucureşti, 2001
8. http://www.OSTRICH.COM.VA ”Страусинный бизнес”).
9. http://grossostrichph.com/str-nut.HTM”Ostrich nutrition”).
10. http://www.personalhealhealtlzone.com/nutrition/meat/ostrich.html.
11. http://www.OSTRICh-MEATS.COM/INDEX.html ”OSTRICH FARM”)
12. http://www.OSTRICHES-ONLINE.COM/MEAT-NUTRITION.html ”NUTRITION AND COMPARISION INFORMATION”)