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Ecologically clean technologies of young cattle development

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Abstract. The article discusses the effectiveness of calf rearing in lightweight buildings in individual cages and in houses for individual keeping from 3 days of his life to 60 days of age. It has shown the advantage of growing young animals using this technology in comparison with the traditional method for group keeping indoors. This method of calf breeding contributes to maintaining the cultivation of full-fledged repair young animals, and ultimately, increasing the efficiency of animal husbandry. Since all experimental groups had a different content system, the dynamics of live weight in age periods helped to reveal the difference in growth rates and developed animals. The data obtained indicate that the weight during the formulation did not differ much in animals of the control I and II of the experimental groups was 36 kg, respectively, 35.7 and 38 kg. At 3 months of age, it amounted to 83, 87.6 and 90.2 kg, respectively. They exceeded their peers in the control group 7.2 kg or 7.99%, 4.6 kg 4.67%, respectively. The average daily increase in 3 months was 626 g, 692 g, 696 g, respectively.

1. Introduction

At the present stage, the accelerated increase in livestock production is largely determined by the transfer of the industry to rental and farming forms of farming, in which each worker becomes a real and sovereign owner of land, livestock, equipment, premises and bears full economic responsibility for their effective using.

According to the Ministry of Agriculture of the Republic of Uzbekistan, the implementation of measures aimed at increasing the level of provision of the population with agricultural products led to an increase in production of grain per 100 kg, potato by 65 kg, vegetables by 250 kg, and melons by 48 compared to 2000 kg, fruits per 66 kg, grapes per 35 kg, meat more than 30 kg, milk more than 160 kg, eggs per 150 pieces.

Currently, the main part of the livestock of all types of livestock and poultry, or 62.0-94.5 percent, falls on the share of farms and dekhkan (personal subsidiary) farms.

The analyzed data showed that, in the bulk of the production of the main types of livestock products, or 57.7-95.7 percent, remains on the share of farms and dekhkan (personal subsidiary) farms.

However, the tendency that has developed in recent years to create large-scale enterprises in the Republic of Uzbekistan is becoming obsolete today; a return to small farms necessitates a radical revision of livestock breeding technologies.

The importance of such changes prompted us to conduct scientific and economic experience in developing intensive resource-saving environmentally friendly technologies for raising and fattening cattle in lightweight buildings for small farms and peasant farms in hot climates.

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The study of this issue is currently gaining special scientific and practical interest and is relevant.

2. The purpose and objectives of research.

The aim of the study is to develop an effective resource-saving technology for growing and fattening red-steppe gobies in light rooms of arched construction and in individual houses.

To achieve this goal, the following tasks were set:

- to study the growth, development and exterior features of red-steppe gobies grown under different content systems;
- to follow the dynamics of clinical and some hematological parameters of experimental gobies in the process of their growing and fattening;
- to give a comprehensive assessment of the meat productivity of gobies (slaughter yield, the output of the main nutrients in edible slaughter products, chemical and qualitative indicators of beef, etc.);
- to determine the economic efficiency of growing bull calves in cattle in lightweight buildings and in individual houses.

For the first time in the hot climate of Uzbekistan, rational options are being developed for resource-saving environmentally friendly technologies for growing and fattening red-steppe gobies in light arched rooms for specialized farms and small farms.

3. The practical value of the work

Based on the results of the research, the efficiency of growing and fattening red-steppe gobies in lightweight buildings and in individual houses is proved, practical suggestions for improving the technology of beef production in specialized farms, small farms and farms in Uzbekistan are recommended and given. Technological options for growing and fattening are being developed, which allow to remove calves from fattening with a live weight of 450-460 kg.

Research [1, 2, 3, 4, 5, 6, 7, 8, 9]. showed that the increase in beef production depends on the introduction of effective technology for feeding, keeping and feeding animals, as well as the reduction in its cost is largely determined by the use of resource-saving technologies in animal husbandry. In this regard, the development of advanced technologies for growing and fattening young cattle in lightweight buildings for small farms is of great importance.

4. Materials and object of research

Scientific and economic experience was carried out in the farm “Ashur Polvon Muzhizashi” in the Gallyaaral district of the Jizzakh region.

To conduct the experiment, 3 groups of red-steppe calves were formed according to the principle of analogs, 15 animals each, 15 animals in each according to the following scheme (see Table 1).

Table 1. Scheme of experience.

Group	**Technology option**		
	from birth to 2 months	*From 2 to 12 months*	*From 12 to 18 months*
Control	Closed rooms, group content without leash.	Closed rooms, group content without leash.	Fattening the premises on a leash.
I - experienced	In individual houses.	In individual houses.	Fattening on sites with a shadow canopy, on a leash.
II - experienced	In lightweight buildings in individual cages.	In lightweight buildings in individual cages.	Fattening on sites with a shadow canopy, on a leash.

The change in body weight was taken into account by monthly weighing in the morning before feeding. The absolute, relative and average daily gain in live weight was calculated by generally accepted methods. The linear growth of animals was studied by taking the main measurements of the body (height at the withers and sacrum, width at the mackles, hip joints, in the ischial tubercles, depth, width and circumference of the chest, oblique length of the body, chest circumference and half-circumference). Based on these measurements, body indices were calculated.

Feed consumption was taken into account by taking into account the specified feed and their residues for two adjacent days, ten days. Feed payment was calculated by the cost of feed units per 1 kg of live weight gain.

The obtained digital materials were processed by the method of variation statistics according to K.E. Merkurieva (1970). In our experience, all experimental bulls after birth for two days were in the stall with their mothers. Then the bulls of the control group were transferred to the premises and were kept in group machines for up to 2 months. (five goals each). And the bulls of the first experimental group were transferred to individual houses.

The calf houses are made of fiberglass reinforced polyester, so they are not affected by solar radiation and extremely high and low temperatures.

This palette guarantees unprecedented durability therefore the service life of houses is practically unlimited. Sizes of the house: length-150, width-120, height-125 cm. Fencing: length-150, width-120, height-1000 cm. And the bulls of the II-experimental group in lightweight buildings [10, 11, 12, 13].

This room is an arched structure covered with a tarp; the pillars of the arch frame are made of corrugated sheet steel with a thickness of I mm, the contact area of the metal pillar with a tarpaulin coating is 5 cm, which eliminates its heating on hot days. In addition, the white color of the tarpaulin reflects excessive solar radiation. The area of the room depends on the number of arches installed. For the experiment, we chose a room 12 m long, 8.2 m wide, and 3.5 m high. Individual cells with the following dimensions were placed inside the room: length 1.95 m, width 1.10, height 0.93 m.

The diet of experimental young animals was compiled taking into account age, live weight and planned productivity. (table 2).

Table 2. Diet for feeding calves up to 3 months of age.

Age		**Live weight at the end of the period**	**Daily Delivery kg**					
			Milk		*Green feed*	*Combi feed*	*Mineral fertilizing g.*	
Month	*decade*		*Whole*	*Skim*			*Salt cook*	*Precipitate*
I	1	50	6	-	with part	-	-	-
	2		6	-	-	-	5	5
	3		6	-	-	0.1	5	10
Total			180	-	with part	1.0	100	150
II	4	70	7	-	0.4	0.2	10	10
	5		5	4	1.2	0.5	10	10
	6		-	8	2.0	0.8	10	10
Total			120	120	36	15.0	300	300
III	7	90	-	8	2.5	1.0	10	15
	8		-	8	2.5	1.1	10	15
	9		-	8	2.5	1.1	10	15
Total			300	240	75	32	300	450

From table 2, it is seen that all the experimental gobies up to 3 months of age were fed under the same conditions.

Changes in live weight of experimental gobies in individual age periods are presented in table 3.

Table 3. Dynamics of live weight of experimental bulls, kg ($\bar{X} \pm f\bar{X}$)

Age, month	**Group**		
	Control	*I-experienced*	*II-experienced*
When setting 15 days	36±0.82	35.7±0.88	38.0±0.84
3 month	83±0.88	87.6±1.04	90.2±1.02

From table 3 it can be seen that under the same feeding conditions for gobies, but under different conditions of keeping, differences in growth rates were observed.

Growing calves in lightweight buildings in individual cages and in houses for individual keeping from 3 days of life to 60 days of age has shown its advantage than growing young animals using this technology in comparison with the traditional method for group keeping indoors. Since all experimental groups had a different content system, the dynamics of live weight in age periods helped to reveal the difference in growth and development of animals. The data obtained indicate that the weight during the formulation did not differ much in animals of the control I and II of the experimental groups was 36 kg, respectively, 35.7 and 38 kg. At 3 months of age, it amounted to 83, 87.6 and 90.2 kg, respectively. They exceeded their peers in the control group 7.2 kg or 7.99%, 4.6 kg 4.67%, respectively. The average daily increase in 3 months was 626 g, 692 g, 696 g, respectively.

It was found that with age, the intensity of the increase in measurements is different. Since the experiment still continues to track the apparent differences in measurements of the three groups of animals, and, consequently, body indices in this age periods, it was not possible. At 3 months of age, the animals in all three groups showed little difference in measurements. We will give the main characteristic and differences in measurements and body indices after completion of scientific and economic experience for its reliability of 9, 12, 15, 18 months of age. Based on the results of the experiment, it is difficult to judge the differences between the methods of keeping calves in the premises, the vested structures in individual cages and in houses were more intensively added to live weight.

In livestock, in recent years, the method of raising calves in the fresh air has gained wide popularity [14, 15, 16]. The efficiency of keeping and feeding gobies in lightweight buildings at all stages of production. Growing young animals using this technology in comparison with mixed growing young animals allowed us to additionally get a gross 19.0 cu goal [17].

Growing black-and-white young animals at a high level and fully feeding the “cold” methods compared to indoor counterparts showed an advantage in live weight of calves for 42.4 kg of heifers 23.6-34.6 kg P> 0.999 which allowed 1, 2 months to inseminate them earlier.

Growing heifers up to 3 months of age in a quick-built lightweight room, and from 3 to 6 months of age in a half-open group-keeping room, they were optimally developed during the main periods of growth at 9 months of age, 43% and at 15 months of age, 63% [18].

This method of raising calves contributes to the safety of growing full-fledged repair young animals, and ultimately, increasing the efficiency of animal husbandry. Lightweight rooms and individual houses are an integral part of outdoor cultivation technology. Among the advantages of using the calf house system, the following can be distinguished: natural conditions for the development of calves (clean air, natural sunlight, which contributes to the development of vitamin D by the body of the calf and is a free natural sterilizer, as well as minimizing the concentration of ammonia, water vapor and dust); reduction in mortality of young calves; isolation from sources of infection, reducing the risk of infection in the animal group, reducing the cost of treatment, individual monitoring and care.

The ability to comply with the necessary feeding technology, depending on the individual development of the calf, the lack of feed competition, natural ventilation also guarantees a good atmosphere indoors and in the house. The premises are easy to clean and disinfect convenient in moving one place to another. Low material and labor costs for growing young animals.

5. Conclusion

The obtained results of scientific and economic experience allow us to draw the following conclusions: in the conditions of a hot climate of Uzbekistan, rearing of red-steppe bulls in the dairy period in lightweight buildings in individual cages and in houses in the summer season is advisable from a veterinary and economic point of view and has several advantages in comparison with the traditional method of cultivation with group content in the room. In order to increase beef production, we recommend growing gobies during the dairy period in lightweight buildings in individual cages and in houses with one head in each, then in lightweight buildings in groups with walking ranges. This technology allows young cattle to provide intensive growth and development.

The developed technology is recommended to be widely used in specialized beef farms, on small farms of farmers and in peasant farms.

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