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A Safe Innovative Way to Increase the Resource Efficiency of the Meat Industry

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Abstract: It is known that the innovative development of any industry is directly related to the intensification of production, as a result of the use of improved, innovative techniques and technology, as well as new forms of production and labor organization, effective and full of available resources. provides an increase in utilization and labor productivity.

the meat industry refers to activities aimed at the production of new or improved (in terms of quality, appearance and efficiency) products of the livestock industry. This activity arises as a result of scientific research and development or the use of best practices in order to modernize production and capture the market.

In this article, hydroponics technology is analyzed as a safe innovative method of increasing the resource potential of the meat industry, and the possibilities of its application in Uzbekistan are analyzed

Keywords: Green containers, hydroponics technology, biologically active substances, hydroponic green feed, daily nutritious food, livestock farms, normal reproduction, safe green and mineral-rich feed.

INTRODUCTION

Analyzing the theoretical and methodological aspects of innovative development in the meat industry , the methods of evaluating the effectiveness of innovative activities, and the main directions of the development of the meat industry based on innovation in the region, in order to increase the production efficiency as a result of the innovative development of the livestock sector and to accelerate this process it was determined that it is necessary to provide socio-economic conditions that encourage the use of new means of development and intensification.

the meat industry are characterized by their complexity. Based on the effect obtained in the field, there are technical-technological, biological, economic, social and ecological forms of efficiency.

the meat industry are systematized based on the type of effect obtained and compared with different costs. In the structure of efficiency types in the meat industry , biological efficiency is of particular importance, and it is explained by the increase in productivity in the meat industry , the volume of products obtained in relation to the volume of feed consumed.

DISCUSSIONS

Currently, the poor fodder production infrastructure, ecological instability of fodder production, soil fertility, lack of special agrotechnologies, and the absence of a constant

high range of nutrients or high prices cause serious problems in livestock, fisheries, horse breeding, and this situation is a meat resource. leads to an increase in the price of the body and resource orphans.

In order to prevent and eliminate the lack of this resource, it is known that the cultivation of the nutrient base by the hydroponics method, which has been used purposefully for the last 30-40 years in the world's international experience, is paying off. It was found that work activities with this activity have been carried out on a scattered scale for the last 5 years on the scale of Uzbekistan. However, no matter how extensive the works are, the shortage of nutrients in the meat industry cannot be prevented. The reason is that representatives of a narrow circle and farms themselves are engaged in this technological activity. The fact that representatives of the population do not have enough knowledge and skills to implement this technological process is a sign that this process is still not organized systematically.

In order to eliminate the same problem in meat resource efficiency, I propose to systematically organize innovative "Green Containers" in people's houses and closed farms.

In this case, the technology of growing green food by hydroponic method will be introduced in houses, farmsteads and apartments. That is, work is carried out according to the system of self-employment.

Let's consider the following advantages of organizing a system of "green containers":

- increases the economic interest of farms
- to improve the financial support of families by providing employment to the population
- to eliminate the problem of stock of feed for livestock farms
- reduces medical resources (water up to 98%) and other costs up to 70%
- does not require additional labor
- possibility to feed livestock with high-quality, safe green and mineral-rich feed throughout the year
- Delivery of high-quality, safe and environmentally friendly meat products to the population through livestock fed using the "Green Container" system.

Hydroponic green feed (HGF) is 8 times cheaper than ground grass meal, 5 times cheaper than silage, and 7 times cheaper than hay. Such food is rich in micro- and macroelements, vitamins, proteins and is natural food. The appearance, color, taste, and texture of green food are genetically familiar and attractive to animals. Therefore, this feed is well consumed and well absorbed by the animal's body. HGF is an environmentally friendly product, easy and economical to produce. Depending on the climatic conditions of the region, it can be grown indoors and outdoors at any time of the year. With the help of HGF, it is possible to specialize field crops for intensive cultivation of grain crops. This expands the possibilities of growing nutritious food throughout the year

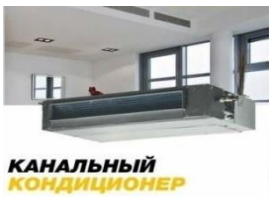
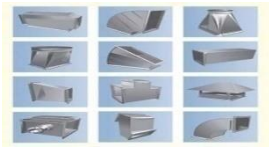
Hydroponic green food is rich in folic acid (vitamin B9), which is necessary for normal reproduction of animals and healthy offspring. HGF has biological significance. Compared to barley, it contains more protein (28.93%), fat (96.73%), as well as biologically active substances (carotene and chlorophyll). The chemical composition of wheat seed and HGF is compared in the table.

Comparative table of chemical composition of hydroponic green feed and wheat grain

Indicators	Hydroponic feed 1 kg SV	Barley straw 1 kg SV	KK-65 (Cereal mixture) SV in 1 kg
Protein, g	206.87	106.15	150.1
Lysine, mg	7.36	4.00	4.91
Methionine, mg	3.66	1.8	2.36
Serine, mg	6.29	0.49	0.55
Cystine, mg	2.47	1.25	1.32
Sugar, g	206.03	5.61	33.03
Oil, g	60.36	23.56	29.0
Kletchatka, g	129.62	48.26	91.9
Calcium, g	8.07	0.60	0.82
Phosphorus, g	8,12	3.5	3.95
Magnesium, g	1.47	0.95	1.22
Sodium, g	0.25	0.11	0.12
Zinc, mg	54,53	26,25	27.02
Selenium, mg	0.29	0.05	0.10
Vitamin B1, mg	13.68	0.78	0.81
Vitamin B2, mg	18.90	1.25	1.42
Vitamin E, mg	325.75	13.71	14.9
Carotene, mg	55.12	3.25	3.9

We have seen above that the nutritional value, composition, nutritional value of hydroponic green fodder production is both nutritious and beneficial for livestock, and through this we can obtain environmentally friendly meat products. Now let's look at its financial indicators. It takes into account the cost-effectiveness of the population and the improvement of material supply in a short period of time.

An innovative method of growing hydroponic green food is an approximate cost estimate
(in soums)

No	Name of materials and characteristic costs	Number	Cost	Amount	Appearance
1	Installation and adjustment of automatic climate control equipment and system of water and air temperature	1	402	402	
2	Household air conditioner for cooling, heating, humidification and air purification. (12 voltage)	1	281	281	
3	Air ducts for air conditioners and ventilation systems and lighting equipment and lamps	1	161	161	

3	Adjusting the plumbing system in irrigation, pouring works	1	402	402	
4	8-9 layer shelf frames for placing cassettes for growing green fodder	1	804	804	
5	"Dutch" type cassettes for growing hydroponic green fodder (30x65 cm)	192	1.06	307.2	
Total costs:					**2357.2 soums**

These costs are not included in the cost of the building, but only in proportion to the cost of installing the technology. If the customer wants to include the preparation of the room in the specified order in the cost estimate, then the amount of total costs will be added in the amount of 50% of the total cost. These costs are for a room of 3000x5000 cm.

Water and electricity consumption in innovative hydroponic green food production

(daily)

	Resource name	**Unit of measure**	**Cost (soum)**	**1 day's consumption**	**Amount (sum)**	**Legal entities (soums)**
1	Water	1 cube	350/1000	100 L	35	100
2	Electric energy	1 watt	295/450	35-40 V	11,800	18,000
Total costs:					**11,835**	**18 100**

(monthly)

	Resource name	**Unit of measure**	**Cost (soum)**	**30 days of spending**	**Amount (sum)**	**Legal entities (soums)**
1	Water	1 cube	350/1000	3000 L	1 050	90,000
2	Electric energy	1 watt	295/450	1200 V	354,000	540,000
3	**Total costs:**				**355,050**	**630,000**

For a room of 3000x5000 cm, 2 single-sided or 1 double-sided rack of 4 meters is installed. 1-sided racks are made up of 8 layers, and 12 special trays of 30x60 cm size are placed on each layer. The total number of slots is 192. 1 tray contains 1.3 kg of dry mass. 1.6 kg of mixture is added if we calculate it as a percentage of the melted mass. We can get 7-9 kg of ready hydroponic green feed from 1 tray in 7 days. Now we can calculate the daily rate in order to have daily working capital . So for this we divide the total number of slots by 192 by 7 days. We get a total of 27 results. That is, we need to grow 27 trays of ready-made green fodder per day. If a total of 35 kg of dry grain is used in 27 trays, the finished mass is 243 kg. Based on today's market prices, 1 kg of this wheat is 4000 soums on average, 1 kg of ready-made hydroponic green feed is 2000 soums.

Now let's summarize the results, so if we assume that 140,000 soums are spent on 35 kg of dry mass of grain, 35 soums on water consumption, 11,800 soums on electricity consumption, a total of 151,835 soums are spent. 486,000 soums will be earned and 334,165 soums profit will be seen by selling 243 kg of finished product. In 30 days, it is possible to see a total net profit of 10,024,950 soums.

If we take into account the fact that the expenses are calculated at the maximum amount and the profit share at the minimum amount, we can predict the increase of the profit amount in economic terms.

Based on the above cost estimate, we can say that the population can cover the initial operating costs themselves if they want, or the President of the Republic of Uzbekistan dated 16.03.2017 No. on measures" and "On additional measures aimed at increasing meat, wool and dairy cattle in the Republic and strengthening the network's feed base" dated 26.04.2022 - Based on decision No. 224, it is possible to obtain subsidies for loans with preferential terms from commercial banks.

Experiments show that the root part of HGF contains more minerals, enzymes, vitamins and proteins. During the cultivation of HGF, experiments were conducted in a dark room without light at a temperature of 18-20 degrees and a humidity of 65-75%. Maximum efficiency was achieved under such conditions. At the same time, from 5.9 to 7.8 grains of wheat (local wheat) were harvested from 1 kg. In the test process, it can be seen that the milk yield of cows fed the root part of the feed in the milk direction increased by 15% to 20%.

During the experiment, work was also carried out on the growth of the green mass of the feed. We were able to obtain the most effective feed at 18-20 degrees Celsius and 65-75% humidity with 18 hours of light per day . At the same time, the green mass of fodder has grown to 10-15 cm in length. In the process of water photosynthesis, under the influence of heat and light, grain reserves are converted into easily digestible forms such as carbohydrates (starch).), is a necessary and sufficient material for glucose synthesis. During grain cultivation, not only starch, but also protein is activated, they begin to play not only a structural, but also a functional role (turning into enzymes, vitamins and hormones). Consequently, the assimilation of food is improved, the immunity of animals is strengthened and the efficiency of vision increases for a long life. Experiments were conducted on 100 g of product. they are necessary and sufficient material for glucose synthesis.

Summary

Above, we considered the benefits of meat and meat products for the human body. Therefore, it has been scientifically proven that if livestock are not fed with high-quality and safe feed, the benefits of meat consumption may be reflected and lead to irreversible toxic conditions for the body. In order to obtain quality and safe meat, it is necessary to ensure the right nutritional balance with rational and environmentally friendly products. We can say that hydroponic food is a pure garden in this chain

That is, hydroponic natural food is a daily nutritious food for pets, rich in vitamins, minerals, micro and macro elements and proteins. The vitamins in it can provide 75% of the vitamins needed by every livestock. Rich in digestible proteins and minerals, this means that 85-90% of nutrients are well absorbed. HGF can be called "dietary food" because its high content of vitamins and enzymes significantly improves digestion during digestion, improves the absorption of other foods and generally reduces the load on the animal's digestive system, and this in turn, significantly increases the quality of meat.

And the "Green Containers" system increases the economic interest of farms, improves the material supply of families by providing employment to the population, eliminates the problem of food reserves for livestock farms, saves health resources (up to 98% of water) and other expenses. Reduces up to 70% percent, 1 Ha hydroponic green feed container is equivalent to the

yield of 13,500 Ha of irrigated land. In addition, it does not require excessive labor, it allows to feed livestock with high-quality, safe green and mineral-rich feed throughout the year. High-quality, safe and environmentally friendly meat products are delivered to the population through livestock fed using the "Green Container" system.

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