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DETERMINATION OF FORECAST VALUES FOR THE VOLUME OF MEAT PRODUCTION IN PASTURAL ANIMAL HUSBANDRY

M.Yaxyayev – PhD "Tashkent Institute of Irrigation and Agricultural Mechanization Engineers" National Research University

Abstract

Current statistical data for 10 years on the factors specified for the model in this article were obtained from the Department of Agriculture of the Kashkadarya region for 2013-2022. The influence of selected factors on the volume of meat production is analyzed, the role and profitability of the livestock network in grazing livestock is analyzed, and proposals are made for its development.

Keywords: pasture cattle breeding, model, factors, forecasting, pasture systems, cattle breeding, selection, livestock clusters, wool, leather, pasture forage.

Introduction. It is known that livestock farming is one of the important sectors of the agricultural network, and this sector accounts for about 48% of agricultural products grown. In the Kashkadarya region, chosen as the target, 39.5% of agricultural production comes from the crop sector and 60.5% from the livestock sector. Important current issues are the regular increase in the volume of livestock production, increasing the level of product quality, and improving the food supply of the population in our country. During the period of increasing livestock numbers, the slow growth rate of production volume is explained, first of all, by the low productivity of livestock farming. Based on foreign experience, it can be noted that increasing livestock productivity requires systematic and long-term network measures. Therefore, it is important to conduct a detailed analysis, select the factors influencing meat production in grass-fed livestock, and determine the levels of their interaction.

The main branch of agriculture in our country is livestock farming, in particular pasture farming, by analyzing the levels of interaction of factors that directly affect meat production, and based on this, by assessing the influence of factors on meat production volumes. in the regions, we can draw a conclusion about the main directions and forecast parameters for the development of pasture livestock farming.

It can be seen that the production of meat products in pasture livestock farming in the Kashkadarya region, the development of the pasture livestock farming industry in the region, as well as the volume of meat production are influenced by a number of factors.

- the number of livestock available;
- amount of precipitation in the region;
- market price of 1 kg of meat (beef and lamb) products;
- amount of degraded pasture lands;
- income of the population;
- payments for grazing livestock, taxes;
– average annual temperature;
- number of pastures by region.

Among these factors, factors such as the number of livestock available, the amount of precipitation, the amount of degraded pastures in the region, and the average annual temperature were selected for the multifactor model.

In our opinion, it is advisable to substantiate the forecast values of the volume of meat production by pasture livestock farming in the Kashkadarya region, determine the relationship of the above factors and draw scientific conclusions.

Factors included in the model that we use to determine the volume of meat production in the Kashkadarya region and its forecast indicators - the resulting factor is the volume of meat production, in thousands of tons (Y) and the selected factors - the number of existing livestock, thousand heads. (b1); average precipitation for the region, mm (b2); area of pastures in the region with different levels of degradation, thousand hectares (b3), average annual temperature in the region, C° (b4).

Materials and methods. Regarding the factors identified for the model, the relevant statistics for 10 years for 2013-2022 were obtained from the Department of Agriculture of the Kashkadarya region. Before analyzing the influence of selected factors on meat production volumes, let's look at the dynamics of changes in meat production volumes in pasture livestock farming in the region in 2013-2022. (Fig. 1).

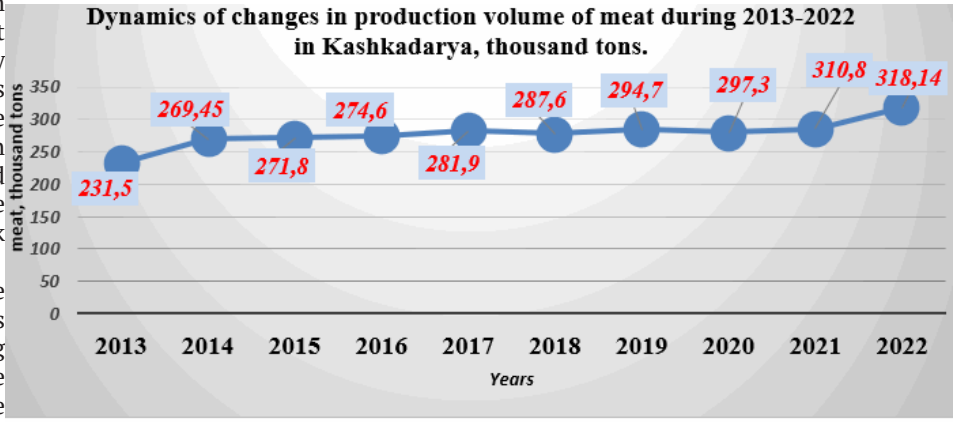

Figure 1. Dynamics of changes in production volume of meat during 2013-2022 in Kashkadarya [1].

In 2013, 231.5 thousand tons of meat products were produced in the Kashkadarya region, and in 2017 this figure increased compared to 2013 by 121.8%, in 2020 - by 1.2 times, in 2022 - by 1, 37 times.

One of the main reasons for this is, of course, that as a result of the organizational and economic reforms being carried out today, the volume of livestock production in our republic is increasing from year to year. In particular, breeding small cattle suitable for the natural and climatic conditions of the regions, development of the food supply, processing of leather and wool, support for the production of semi-finished products and finished products from them, sustainable use of reserves of Kavarka plantations growing naturally on pastures, as well as a Presidential Resolution of the Republic of Uzbekistan PR-5178 dated

July 8, 2021 “On additional measures to support the effective use of existing pastures and silk processing.” The adoption of "wool" also played an important role in achieving the above results.

To predict the volume of meat production in pasture livestock farming in the Kashkadarya region, it is possible to use linear, graded and logarithmic functions. These functions are displayed as follows (Figure 2). Linear function for predicting meat production volume:

$y = 5,8346x + 245,49$ (1)

$R^2 = 0,6984$ (coefficient of determination).

Level function for forecasting meat production volume:

$y = 240,1821x^{0,0940}$ $R^2 = 0,7598$. (2)

Logarithmic function for predicting meat production:

$y = 25,197\ln(x) + 239,52$ (3)

$P^2 = 0,7635$;

Here it is the resulting factor, the dependent variable; x – factor, independent variable; R^2 is the coefficient of determination.

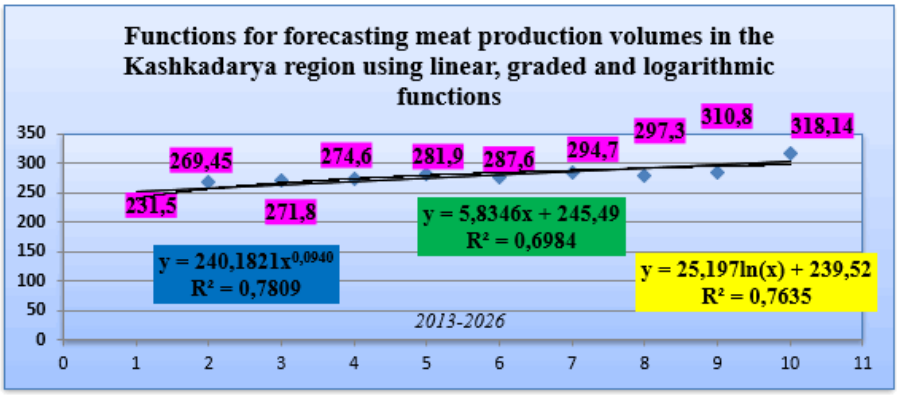

Figure 2. Functions for forecasting meat production volumes in the Kashkadarya region using linear, graded and logarithmic functions[2].

Conclusion. But given that our model is multifactorial, we will create a multifactorial regression model. The purpose of creating a regression equation is to analyze the degree of mutual influence and dependence of the factors selected for this model, as well as to determine multicollinearity - the degree of relationship between factors. Therefore, first of all, let us consider the correlation analysis of the factors identified in the model.

Let us present the correlation between the volume of meat production and the factors directly affecting it in pasture livestock farming in the Kashkadarya region, it is clear that there is a strong connection (0.9364) between changes in the volume of meat production (Y) and the number of available livestock (x 1), affecting this dependent variable.

We also observe that there is a weak inverse relationship of -0.3586 between rainfall (x 2) and the resulting dependent variable. Because regional meat production is not highly dependent on high or low rainfall, it can be highly dependent on other factors, including feed composition and quality, the market price of livestock feed, and the price of meat products. In addition, we found that there is a strong inverse relationship of -0.61028 between the factor of the amount of degraded grassland in the region and the resulting factor. It can be seen that the average annual temperature in the region has a weak (0.230428) direct relationship with the resulting factor.

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