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## **INFLUENCE OF THE EXTRUDED ADDITIVE ON THE MILK PRODUCTIVITY OF COWS**

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Digestibility is one of the most important and main factors of feed. Known some ways of preparing feed additives for feeding them to animals. Extruding is one of the way to increase digestibility and nutritional value. The extrusion process is the effects of high temperature and pressure, the grain is disinfected in a short time (about 5 seconds), as well as the removal of nutrients to low-molecular compounds. [1] The input of extruded feed in the diet of dairy cows significantly improves the energy saturation of the diet, increases the protein content, and also reduces the problems with scar dysfunction associated with the traditional consumption of concentrates with a high starch level.[2] In addition, during the extrusion process, grains can lose moisture up to 50% of the original, which allows us to consider possibilities, such as including components with a high moisture content in the feed.[3]



1 figure - extruded feed

Many scientists have investigated the effect of extruded feed additives on the productivity of dairy cows, including R.M. Claassen et al., who proved that cows receiving extruded feed had a higher milk yield, as well as the fat content of milk increased in cows productivity. [4]

Also by other scientists J. Moats et al. explore the effect of the extruded additive on the fermentation of rumen, milk fatty acids and the productivity of dairy cows was

studied, the results confirmed that feeding with extruded feed effectively improves milk yield with the content of fatty acids in milk. [5]

Sabirov S.R et al. explore how the inclusion of an extruded supplement in the diet gives positive results and contributes to an increase in milk yield, the amount of protein, fat, crude protein and sugar, while reducing crude fiber and crude fat. Scientists deem that it is necessary to exclude the supplement for a while, and then after some time re-introduce it into the diet for a better effect [6]

In our research, we used a feed additive, the basis of which is an extruded granulate, as well as an extract of balsamic poplar and activated carbon (AUCD). Barley and oats were used for extrusion. The research was carried out in the conditions of the Akmola region on a dairy farm for 30 days, as a result, 125 highly productive dairy cows of the black-and-white Holstein breed participated in the study. There were 79 cows in the experimental group, and 46 cows in the control group. The control group was given a feed additive of 200 grams per cow per day during the entire experiment.

According to the results of the experiments, a slight increase in milk yield was observed for the entire period (30 days) of the experiment, as well as a slight increase in the indicator is noted in fat indicators by the end of the experiment. The use of extruded feed can increase the yield by 4.0%. There were no significant differences between the groups in terms of the mass fraction of fat in milk. A slight increase in the indicator is noted at the beginning of the experiment in the control group of  $4.99 \pm 0.33\%$  and in the experimental group of  $4.81 \pm 0.74\%$ , and at the end of the experiment in the control group the indicator is  $3.89 \pm 0.19\%$ , in the experimental group it was  $4.52 \pm 0.42\%$ . The protein content in cow's milk for the entire period of the experiment remained within the normal range, the indicators range from  $3.11 \pm 0.03$  to  $3.29 \pm 0.05\%$ . High fat and protein content in milk, high milk yields allow you to get a large amount of milk fat and milk protein.

Martin C. and co-author. research were conducted to study the effect of extruded flax on dairy cows. The effect of increasing extruded linseed FA supply on enteric CH<sub>4</sub> emission, digestibility, and rumen function was studied in dairy cows fed diets based on hay or corn silage. The energetic benefits of decreased CH<sub>4</sub> emission improved the milk efficiency of cows fed hay-based diets supplemented with the lowest linseed FA levels. Lower CH<sub>4</sub> emission from dairy cows fed linseed helps to limit the negative environmental impact of ruminant livestock. [7]

V. Baudet. and co-author. explored the effect of extruded feed on the intake of vitamin B in the body of dairy cows, because vitamin B plays an important role in the metabolism of cows. The metabolic efficiency of ruminants can be significantly reduced with insufficient supply of vitamins of group B. The addition of an extruded feed additive to the diet of cows increased the supply of dairy cows with vitamin B6 and had a beneficial effect. [8]

In the experiments of F. Giallongo et al. the effects of extruded soybean meal processed at temperatures of 149 C and 171 C on the productivity and digestibility of nutrients and rumen fermentation in lactating dairy cows were studied. It was revealed

that extruded soybean meal has a positive effect on feed consumption and increases milk yield in dairy cows. [9]

The main conclusion that can be made from this article is that the use of extruded feed additives in the diet of cows significantly increases productivity in dairy cattle breeding. Also, during the extrusion process, the feed is disinfected, it is possible to reduce CH<sub>4</sub> emissions and favorably affect the digestibility of vitamins B. Consequently, extruded feeds have a positive effect on dairy productivity, but also have an effect on animal health.

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