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**AREAS OF ENERGY CONSERVATION IN ANIMAL FEED
PRODUCTION OF UKRAINE**

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Аннотация. В статье обозначены направления сохранения энергии при производстве кормов в животноводстве Украины.

Abstract. The article outlines the directions of energy conservation in the production of feed in animal husbandry in Ukraine.

Ключевые слова: животноводство, корма, энергосбережение.

Keywords: animal husbandry, feed, energy saving.

Introduction

The energy required for life processes, growth and production of livestock products produced from the feed. A significant amount of body energy goes into digestion and metabolism of nutrients at the cellular level. Therefore, only a small part, first used energy is "useful", that is converted to the energy of the final product. The energy efficiency of transformation of feed into products, which is determined by the ratio of the energy of the final product and complete consumption of feed production in dairy cattle and pig breeding does not exceed 30% in broiler farming – 10%, the production of beef – 7%. The efficiency of livestock is largely determined by the fodder provision of livestock and poultry. Higher productivity of farm animals is achieved by ensuring optimal feed [1].

Main part

In the USA, for example, among the main agricultural crops in the first place was occupied by corn, and the second soybeans, the third – perennial grasses for hay, fourth and fifth, – sorghum, and barley.

Replace grain in animal feed can herbal flour (for pigs and poultry to 10% for cattle – up to 15–20%). But from an energy point of view, the replacement herbal grain flour is not advisable, since the energy consumption in the calculation of the feed unit in the herbal flour is higher in 15,0–6,3 times. At the same time, serious fuel economy can be achieved through a combination of drying and the use of a drying agent in the drying process of waste heat, because almost 75% of the thermal energy is emitted with the coolant. A closed cycle of air passage with a coolant (with a temperature of 120°C) for preliminary drying of the green mass significantly reduces energy consumption [2,3].

It is advisable to eliminate protein deficiency due to sunflower meal, soybean, rape, and meal. According to the UAAN Institute of Feed, the develop-

ment of feed crop rotation, the saturation of perennial legumes, grasses with more than 50% grain crops, intermediate crops will make it possible to increase the production of feed and feed protein by 42–48%, reduce labor and fuel costs for cultivation soil by 20%, save nitrogen fertilizers due to biological fixation of nitrogen by perennial legumes and leguminous crops. 4–12 times less energy is spent per hectare of cultural pastures than on cereals or industrial crops; and the profit from one hectare of their sowing is 4 times higher than from a hectare of sugar beet, and 16 times higher than from a hectare of grain crops. Among the feeds prepared from 1000 tons of green mass for feeding in the stall period, the smallest expenditures of the total energy are pressed hay, and the largest are grass flour (Fig. 1).

The main share of the total energy consumption in the production of feed from the green mass is accounted for by machines (13.7–32.0%), fuels and lubricants (19.0–67.5%) and the costs associated with the production of the initial green mass (5.9–34.3%).

To reduce the consumption of feed rations is expedient to increase volumes of feed (silage, hay, green mass), grazing use of forage land, harvesting hay by aeration, silage fodder with previous drying of green mass in the field and subsequent drying film solar collectors, receipt of feed from corn by grinding together with the rods of wet cabbages, and their subsequent preservation, preparation of balanced feed mixtures in the feed without heat treatment, etc.

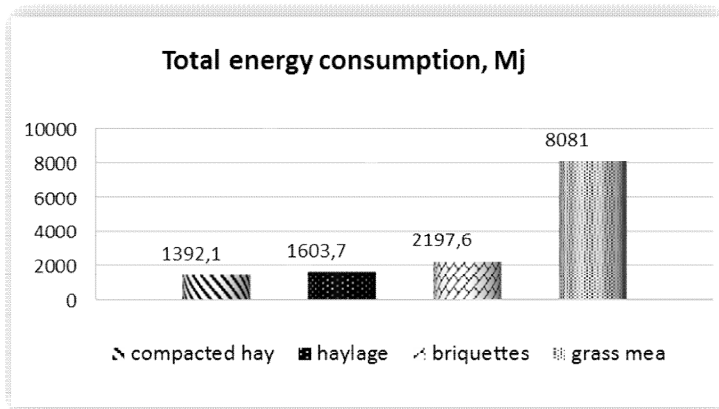


Fig. 1. Total energy consumption in the preparation of feed 1000 tons of green mass

Energy cooking fodder for cattle depends on the composition of current production lines, specific energy consumption, equipment, modes of operation, automation processes and ranges from 3 to 10 kWh/t.

Taking into account the fact that in the technological lines used machines with different performance parameters, the specific energy consumption of feed on many farms above the standard. The total cost of energy per 1000 tonnes of

grain by grinding it on DKM– 5 with the following mixing on H– 0,5 total 1518,5 GJ, while rolling it to PZ– 3 – 3860,5, and in the manufacture of animal feed with the help of CORK–15 – 5375,9 GJ, which is above the 2.5–3.5 times.

Conclusion

Significantly reduce specific energy consumption by selecting the optimum set of equipment preparation center, compliance of the measuring components, application of systems of automatic regulation of the issuance of feed.

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ОСНОВЫ ФОРМИРОВАНИЯ ПОТОЧНЫХ ТЕХНОЛОГИЧЕСКИХ ЛИНИЙ НА ЖИВОТНОВОДЧЕСКОЙ ФЕРМЕ

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Аннотация. В статье рассмотрено формирование системного подхода при разработке и внедрении поточных технологических линий на животноводческой ферме.

Abstract. The article considers the formation of a systematic approach to the development and implementation of production lines on a livestock farm.

Ключевые слова: корма, технологическая линия, животноводство, продукция, логистическая система.

Keywords: feed, production line, animal husbandry, products, logistics system.

Введение

Животноводство является важнейшим звеном агропромышленного комплекса. Эта отрасль даёт человеку ценные продукты питания, а также сырьё для промышленности. Рост производства продукции животноводства, снижение затрат кормов и труда на единицу продукции немислимы