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DEVELOPMENT OF FODDER PRODUCTION IN KAZAKHSTAN

Abstract. Improvement of livestock productivity - is a priority direction in increasing production of competitiveness of products on domestic and foreign markets. The article shows the main factor of increasing economic efficiency of livestock production - the provision of high-quality, nutritionally full value feeds for obtaining highly profitable products. Feed production industry is considered a system of organizational and economic measures aimed at production, harvesting, processing and storage of feed on the basis of field fodder production and pasture management, which are characterized by a systematic mechanization of forage crop production using intensive technologies for harvesting and storing feed, that enhances significant increase of feed volume and improved quality. New varieties of fodder crops and perennial grasses of intensive type are being introduced into production, high-performance forage harvesting machinery and equipment are used, processes of fodder production and processing are mechanized. The authors state that full value feeding is a necessary condition for the intensive use of animals and the most complete realization of their genetic potential. This, in turn, requires the development of mechanisms to improve government support measures in the areas of production and processing of agricultural products based on ecological models of production of forage crops by natural climatic zones and resource rationing.

Keywords: feed production, livestock production, livestock population, productivity, intensive technologies, high-performance forage harvesting technology, feed quality, full value nutrition.

Introduction. World and domestic experience of livestock production development shows that increased productivity and cost return in production depends on full value animal nutrition, and by 25-35% is determined by advances in genetics, 17% - conditions and technology and 50-60 % - scientifically justified nutrition system [1,2]. In Kazakhstan, in the cost structure of dairy products, specific weight of feed is 53.4%, milk yield is 2406 kg, cost price of 1 c of milk is 3,016 tenge, costs of fodder for 1 c of milk- 3210 tenge.

Dry-steppe, semi-desert, desert, foothill-desert-steppe, foothill-desert, mountain-steppe zones are distinguished on the territory of the republic. The production of crops and agricultural products is located in view of zonal features.

The conducted analysis of cultivation of agricultural crops, depending on the zonal characteristics, shows that their efficiency also depends on the application of farming technologies.

In production of crop products, the following crop cultivation technologies are used: simplified, scientifically justified (minimal, zero) and precise. For example, by field fodder crops in the steppe zone, the yield of corn on silage using simplified technology was 110 c/ ha, by science-based technology – 135 c/ ha, cost per 1 c, respectively, 369 tenge and 354 tenge; in the dry-steppe zone, respectively, 100 c /ha, 120 c /ha, 395 and 379 tenge.

Methods. Scientific methods of studying this problem are based on the requirements of the objective and systemic factor analysis of the state of feed production branch. Currently the following issues are important:

- scientifically justified technology - a method with maximal use of innovative technologies, in which agrotechnical techniques are consistently carried out on the basis of zonal features and take into account

the ecological impact on the environment, the use of safe doses of fertilizers and plant protection products against diseases and weeds, optimal rate of irrigation is selected, which ensures the crops' biological need in irrigation water and reduces the possible process of secondary salinization.

- precision farming, providing energy savings in land cultivation, justification of the structure of sown areas, development of crop rotations, the use of organic fertilizers, a differentiated system of tillage, taking into account soil and climatic conditions [3, 4].

- organic farming is a less laborious and costly method compared to traditional farming systems, based on careful soil till, without making harm to the environment and receiving high-quality products (mineral fertilizers and plant protection products are not used). Organic fertilizers are used to improve soil fertility.

The use of the proposed methods will contribute to the development of the effective measures for the formation of the effective feed production mechanism.

Results. Innovative development is a key factor in the development of crop production sector. Problems include the unsatisfactory state of the material and technical base, low investment capital, high financial risks, agricultural land degradation processes, underdeveloped breeding and seed production systems, non- equivalent inter-sectoral exchange, etc.

Agricultural producers do not sufficiently use technological, scientific achievements and advanced experience in genetics. In this regard, there is a need to form a new mechanism of agricultural development, taking into account government support, without which commodity producers will be uncompetitive on agricultural raw materials and food markets.

The long-term experience of the LLP Experimental Farm, Zarechnoye in Kostanay region confirms the indisputable advantages of the integrated systematic approach to the introduction of moisture-saving technology with zero and minimal till in specific soil and climatic conditions. The yield of spring wheat grain in terms of introduction of minimal till technology increases 1.5 times, and introduction of zero technology with the use of plant protection products - more than twice and reaches an average of 28.7 c/ha for crop rotation, the yield capacity increases due to the increased soil fertility.

The analysis shows that in introduction of precision farming, the yield is increased by 30%, in simultaneous mineral fertilizers cost reduction by 28% and fund costs - by 50%.

The introduction of science-based technology allows to increase the efficiency of cultivation of forage crops, the yield of grain waste exceeds the simplified one by 10%, the cost per 1 ha is reduced by 29.1%, production cost - 35%, profitability level increases - by 51.4%.

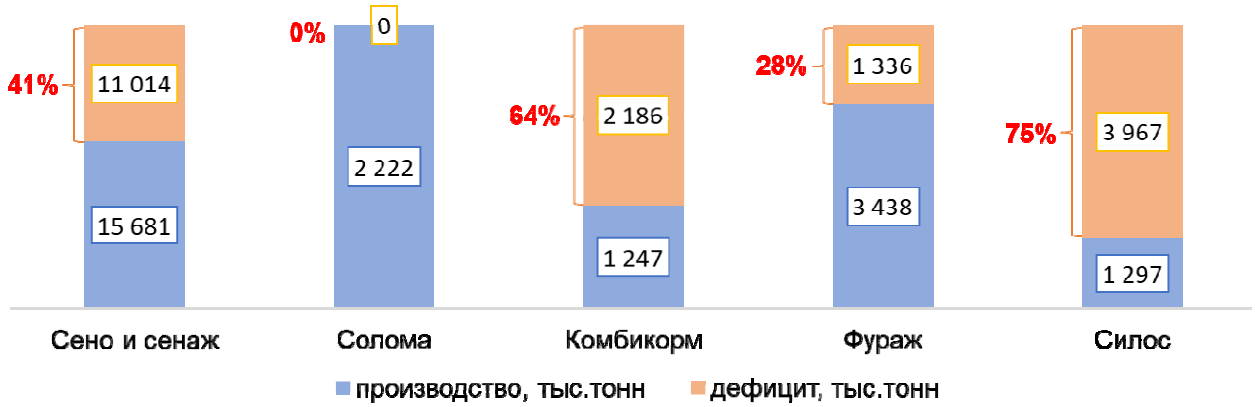
In agricultural production, activities on "natural hayfields and pastures" are conducted, natural forage lands are improved, and irrigated cultivated pastures are created. New varieties of fodder crops and perennial grasses of intensive type are introduced and put into production, methods for preparing hay by active ventilation, artificial dehydration of green fodder, making silage using bacterial ferments, etc., have been developed.

For keeping livestock in the stall period, it is necessary to calculate in advance the need for feed for the entire period, based on the daily nutrition ration of the corresponding type of livestock, taking into account its planned productivity, the expected yield of green mass of fodder crops and the output of final product [5]. The shortage of feed in 8.5 mln. k. units is the cause of the deficit - 14% of the gross product (GDP) for a total amount of 211 billion tenge (figure).

The development and construction of economic models of production and processing of forage crop products contribute to the gradual restoration of the deficit in these types of feed.

In Kazakhstan, there are 189 mln. ha of pastures and more than 5 mln. ha of natural hayfields, where the shortage of hay and haylage can be replenished. Distant pastures serve as a reserve for this purpose, which are currently not fully used and degraded due to the lack of grazing on them. Natural pastures are the main renewable forage resource of the State. The potential productivity of pasture land of the Republic of Kazakhstan, which makes up about 75% of the entire territory, reaches 25 and more mln. tons of fodder units. However, of the available 188 mln. ha of pasture territories, the area of degraded pasture lands is more than 48 mln. ha, of which 27 mln. ha are overgrazed [5].

The interests of the further development of livestock production in Kazakhstan – include the increase in production of meat, milk, wool and other products of agricultural sector and strongly require the fastest



Note: Calculated based on the data of the Committee on Statistics MNE RK.

Figure 1 – «Feed balance» in Kazakhstan

and full involvement of the richest forage resources of the country, such as natural pastures, into the economic turnover.

One of the promising ways of addressing the issue of feed production is the use of the previously used distant pastures. These lands were not used for a long time and restored their partially potential productivity. They can be involved in agricultural production as a significant reserve of pasture forage and hay [6,7].

Important economic indicators of calculating optimal use of fodder in livestock production include feed production cost and the level of their expenditure in production of a unit of animal product. This indicator also allows calculating the cost of rations of each livestock productive group. High feed cost should be conditioned by high livestock productivity. However, at the same time significant increase of feed cost is observed, which reduces the payment for feed by products and increases its value. The increase in feed costs in this case overlaps the effect obtained from productivity growth.

Conclusions.

1. The increase of production efficiency and sales of livestock products in Kazakhstan depends on the level of development of fodder production. Full value nutrition- is a necessary condition for realizing the genetic potential of animals, increasing their productivity, which in turn requires improvement of government financial support measures in the field of production and processing based on construction of economic models by natural climatic zones.

2. The analysis shows that introduction of science-based technology compared with the simplified one provides the increase in the yield of fodder crops by 10%, reduces the cost by 35%, increases the level of profitability by 52.5%. The yield of legumes and perennial grasses is increased by 4.1%, the profitability level - by 7.8%, the yield of silage crops increases by 31.8%, the profitability level - by 35.4%. Feed production per conditional head is 5.2 c. k.units, by livestock technical rate - 9 c.k.u., that is, the shortage of feed is equal to 8.5 mln. tons of feed units, or 42% of their needs, which reduces production of livestock products.

3. The yield capacity of field forage crops and natural forage lands area remains low, which does not allow to provide all kinds of animals and poultry with full value feed in the regions of Kazakhstan, reduce their cost, and, taking into account subsidies, increase cost return in livestock production.

4. Calculations show that the level of provision with rough feeds will reach 112%, with succulent feeds - 168%. The volume of hectare subsidizing of feed crops for 2018-2021 is assumed in the amount of 40.4 bln. tenge, for loading feed mills due to forward grain purchases - 20 bln. tenge. The total amount of subsidies for annual grasses in 2018 will be 6 bln. tenge, perennial grasses - 8.8 bln. tenge and silage crops - 0.8 bln. tenge.

5. The introduction of a scientifically justified technology of growing fodder crops will provide the increased yields, cost reduction, the profitability level for cultivation of perennial grasses in Kazakhstan will be in average 35%, excluding subsidies - 24.2%, and profitability of production of annual grasses and silage crops will increase.

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Қазақ АӨК экономикасы және ауылдық аумақтарды дамыту ҒЗИ, Алматы, Қазақстан

ҚАЗАҚСТАНДА ЖЕМШӨП ӨНДІРІСІН ДАМЫТУ

Аннотация. Мал шаруашылығы өнімділігін арттыру-ішкі және сыртқы нарықтарда өнімнің бәсекелестік қабілетін өндіруді ұлғайтудағы басым бағыт. Мақалада мал шаруашылығының экономикалық тиімділігі н арттырудың - тиімділігі жоғары өнімді алу үшін сапалы, құнарлылығы бойынша толыққанды жемдермен қамтамасыз етудің негізгі факторы көрсетілген. Мал азығын өндіру саласы далалық мал азығын өндіру және жайылымдық шаруашылық негізінде мал азығын өндіру, дайындау, өңдеу және сақтау бойынша азық көлемін айтарлықтай арттыруға және олардың сапасын арттыруға мүмкіндік беретін ұйымдастыру-экономикалық іс-шаралар жүйесі ретінде қарастырылады. Өндіріске жем-шөп дақылдарының және қарқынды түрдегі көпжылдық шөптердің жаңа сорттары енгізілуде, жоғары өнімді жем-шөп жинау техникасы, машиналар мен жабдықтар қолданылуды, механикаландырылған жем-шөп өндіру және өңдеу процестері көрсетілген. Авторлар толыққанды азықтандыру – жануарларды қарқынды пайдаланудың және олардың генетикалық әлеуетін барынша толық іске асырудың қажетті шарты екенін айтады. Осы мақсатта табиғи-климаттық аймақтар бойынша азық дақылдарын өндірудің экологиялық модельдері және ресурстарды нормалау негізінде аграрлық өнімді өндіру және қайта өңдеу салаларында мемлекеттік қолдау шараларын жетілдіру тетіктерін әзірлеу талап етіледі.

Түйін сөздер: жемшөп өндірісі, мал шаруашылығы, мал басы, өнімділігі, қарқынды технологиялар, жоғары өнімді мал азығын жинайтын техника, мал азығының сапасы, толыққанды азықтандыру.

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РАЗВИТИЕ КОРМОПРОИЗВОДСТВА В КАЗАХСТАНЕ

Аннотация. Повышение продуктивности животноводства – приоритетное направление в увеличении производства конкурентоспособности продукции на внутреннем и внешнем рынках. В статье показан основной фактор повышения экономической эффективности животноводства- обеспечение качественными, полноценными по питательности кормами для получения высокорентабельной продукции. Отрасль кормопроизводства рассматривается как систему организационно-экономических мероприятий по производству, заготовке, переработке и хранению кормов на основе полевого кормопроизводства и пастбищного хозяйства, характеризующаяся системностью механизации возделывания кормовых культур, использованием интенсивных технологий заготовки и хранения кормов, позволяющих значительно увеличить объем кормов и повысить их качество. Внедряются в производство новые сорта кормовых культур и многолетних трав интенсивного типа, применяется высокопроизводительная кормоуборочная техника, машины и оборудование, механизированы процессы производства и переработки кормов. Авторы констатируют, что полноценное кормление – необходимое условие интенсивного использования животных и наиболее полной реализации их генетического потенциала. Это, в свою очередь, требует разработки механизмов совершенствования мер государственной поддержки в сферах производства и переработки аграрной продукции на основе экологических моделей производства кормовых культур по природно-климатическим зонам и нормирования ресурсов.

Ключевые слова: кормопроизводство, животноводство, поголовье скота, продуктивность, интенсивные технологии, высокопроизводительная кормоуборочная техника, качество кормов, полноценное кормление.

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