

FEED GRAIN MARKET IN KAZAKHSTAN

ҚАЗАҚСТАНДАҒЫ ЖЕМДІК АСТЫҚ НАРЫҒЫ

РЫНОК ФУРАЖНОГО ЗЕРНА В КАЗАХСТАНЕ

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Abstract. Important crops used as feed grains - oats, corn, wheat, millet, barley, fodder beans, soybeans, and cereals - are irreplaceable sources of nutrients for livestock. The country's stable grain supply and export development are directly related to the increase in production and the improvement of its use for feed purposes, since the consumption of grain fodder traditionally makes up more than half of the domestic grain consumption. The authors state that grain for fodder as the basis for production of livestock products and animal feed forms interindustry proportions in agricultural production, determines the development of the entire grain market and has high socio-economic importance. The main criteria for determining the efficiency of grain use for feed purposes are shown. It is noted that as a result of the irrationally formed structure of grain crops, 1.5 times more concentrated feed is spent on livestock production in comparison with the standards. The article analyzes the feed grain market. It is concluded that measures are needed to improve the state of grain production. It requires the development and implementation of scientific approaches, the optimization of production of feed crops in accordance with the needs of livestock industries. The prospects for the growth of the grain fodder market have been justified, making up its capacity, determined not only by the state of the grain industry and feed production, but also by an objective forecast of the development of agro-industrial complex as a whole.

Аңдатпа. Жемдік астық ретінде пайдаланылатын маңызды дақылдар – сұлы, жүгері, бидай, тары, арпа, жемдік бұршақтар, соя, чина – ауыл шаруашылығы малдарына арналған пайдалы заттардың алмастырылмайтын көздері. Елдің астықпен тұрақты қамтамасыз етілуі, экспортты дамыту өндірістің ұлғаюымен және оны жемдік мақсаттарға пайдалануды жақсартумен тікелей байланысты, өйткені астық жемінің шығыны дәстүрлі түрде астықты ішкі тұтынудың жартысынан астамын құрайды. Авторлар мал шаруашылығы өнімі мен құрама жем өндірісінің негізі ретінде жемге арналған астық агроөнеркәсіп өндірісінде салааралық пропорцияларды қалыптастырады, барлық астық нарығының дамуын айқындайды және

Аннотация. Важные культуры, используемые в качестве фуражного зерна – овес, кукуруза, пшеница, просо, ячмень, кормовые бобы, соя, чина – незаменимые источники полезных веществ для сельскохозяйственного скота. Стабильная обеспеченность страны зерном, развитие экспорта напрямую связаны с увеличением производства и улучшением его использования на кормовые цели, поскольку расход зернофуража, традиционно составляет более половины внутреннего потребления зерновых. Авторы констатируют, что зерно на фураж как основа производства животноводческой продукции и комбикормов формирует межотраслевые пропорции в агропромышленном производстве, определяет развитие всего зернового рынка и имеет высокую социально-экономическую значимость. Показаны основные критерии, определяющие эффективность использования зерна на фуражные цели. Отмечается, что в результате нерационально сформированной структуры посевов зернофуражных культур на производство продукции животноводства затрачивается в 1,5 раза больше концентрированных кормов по сравнению с нормативами. В статье дан анализ рынка фуражного зерна. Сделаны выводы, что необходимы меры по улучшению состояния зернового производства. Требуется разработка и внедрение научных подходов, оптимизация производства фуражных зерновых культур в соответствии с потребностями отраслей животноводства. Обоснованы перспективы роста рынка зернофуража, составляющие его емкость, определяемую не только состоянием зерновой отрасли и кормопроизводства, но и объективным прогнозом развития агропромышленного комплекса в целом.

Түйінді сөздер: мал шаруашылығы, жемдік астық, рацион, ресурстар, нарық, табыстылық, тиімділік, баға, ассортимент, сұраныс, тұтыну, азық-түлік қауіпсіздігі.

Introduction. Grain market is a complex economic system that includes a set of economic relations between its entities, which include rural producers, enterprises, procurement, storage, industrial processing companies, as well as various kinds of structures providing services for the movement of grain and its processed products along the entire chain from producers to consumers.

conditions, which are characterized by great difficulties for agricultural producers, concerning all aspects of grain production and sale. On market, grain is the most important and reliable source of income for its producers.

In terms of general economic recession, grain and its processed products are forming the revenue side of the budget to a large extent. The influence of grain market is also seen in resolving issues of market relations not only of an internal, sector nature, but also of agri-food market as a whole [see 1]. Feed grain, being the basis for production of livestock products and animal feed, largely forms inter-sector proportions in agri-industrial production, determines the entire grain market development and has high socio-economic importance.



Material and research methods. The important role of grain market and the scale of its development determine the need to take into account the entire complex of market relation elements in its functioning, which can serve as a kind of standard for developing and improving market relations in other sectors of agro-industrial complex and specific food markets. According to the functional purpose, grain market is divided into markets for food, seed, feed grain and grain for industrial processing. The saturation of agri-food market with grain and processed products is based on its own grain production, which is developing on the basis of mobilization of internal resources of all sectors, and rational use of grain through all its consumption channels. Difficulties in the implementation of these tasks are largely determined by sharply increased prices for fixed and circulating assets, including fuels and lubricants, agricultural machinery and other agricultural inputs [2].

The grain market is one of the largest segments of agri-food market, through which about 40% of AIC production volume is sold. Grain market formation as the most important part of agri-food complex of the republic took place in the conditions of the unfavorable economic situation caused by liberalization of prices for production means and services, privatization process, lack of capital investments in terms of low financial and loan discipline, and a decreased solvent demand of the population.

Results and discussion. The attention of the State to the grain market formation should be noted. World experience shows that grain market formation process has social significance, and significant State participation and control are necessary for its functioning [3].

Constant fluctuations in gross yield of grain crops lead to a shortage or overproduction of feed grain in the region, which results in quite sharp changes in grain prices. The low level of market infrastructure development, the increased number of intermediary structures hinders the creation of a developed feed grain market, the characteristic features of which are as follows:

- stable and saturated demand for feed grain from the consumers and the corresponding steady supply of feed grain of optimal price, assortment and quality;
- the formation of economic relations system between producers and consumers of feed grain based on the comprehensive public support policy for domestic agricultural producers, which guarantees feed grain sales and profitability of processing and use, a

sufficient level of profitability for simple and expanded reproduction. The use of scientific and technological achievements, development of cooperation and agro-industrial integration depends on the public support level. It also determines the sustainable functioning of wholesale feed grain enterprises on district, regional and national markets; development of a network of specialized loan- financial and insurance institutions, information and analytical services, information and advisory centers and grain market monitoring services;

- economic interaction and coordination between business entities of the feed grain market in terms of increasing competition between them depend on the objective formation of market prices for grain and its processed products in a competitive environment that ensure the cost payback of grain producers. All these measures constitute an effective public influence on grain market;

- functioning of the developed inter-sector and sector economic relations, feed grain market regulation with full and active State participation are implemented by a set of targeted programs aimed to support the stability of feed grain market and sustainable development of related industries and grain industry;

- implementation of the non-interference policy of the State in the economic activity of grain market entities and its constant regulation at all levels;

- the availability of developed production infrastructure, especially market infrastructure of feed grain market, which is formed with the active participation of the State, enhances creating equal conditions for all producers and consumers of feed grain to enter the market and ensure control over the products movement by relevant government agencies;

- organized and unimpeded movement of feed grain from producers to final consumers across the country, taking into account the determining of rational territorial and sector proportions that most fully complies with economic interests of grain farming development in the country and the regions, more efficient use of their natural and economic conditions, development of regional and inter-regional grain connections;

- relatively developed level of self-organization of feed grain producers, the existence of numerous associations of market participants at local, regional and national levels that support their economic interests in legislative and executive structures;

- the availability of adequate conditions for market relations, a stable and developed legislative base, which is implemented

through a comprehensive interconnected system of public legal, economic-organizational and administrative measures;

- active response to changes on domestic and global agri-food markets aimed to protect domestic consumers and producers.

Feed grain is a product of grain industry of crop production and is used directly or in processed form as part of mixed feed for livestock and poultry, is directly involved in production of livestock products. At the same time, in agriculture, grain production is the main supplier of raw materials (feed grain) for production of mixed feed both at own facilities and third-party feed mills. Thus, fodder grain, participating in the economic turnover, largely determines the efficiency of livestock industry and the entire agricultural production, as well as storage and processing systems [4].

The high level of production and use of feed grain in livestock and poultry farming is an important direction in ensuring the country's food security.

It should be noted that there is an extremely instable demand for feed grain under the influence of demographic, political, economic, organizational, technical and other factors. Many studies of feed grain market have suggested that the demand for grain increases as the price of grain decreases. But in modern conditions, this pattern often does not justify itself due to the low solvency of feed processing enterprises and livestock farms. We can conclude that the elasticity of domestic feed grain market is low. Agricultural enterprises do not have sufficient financial resources to really participate on grain market and in feed price formation.

The existing disparity in prices and low solvent demand of the population result in a low demand for feed grain and significantly narrows the country's grain market [5]. According to the level of processing for use in livestock feed, feed grain can be differentiated as not processed at all; chopped, but poorly balanced on specific farm; chopped and partially or fully balanced on farm; recycled at local facilities; processed at large specialized feed mills to the state of full ration feed [6].

The specific feature of the feed grain market lies in the fact that production of feed grain and leguminous crops is traditional, sufficient for domestic needs and largely marketable, not so demanding to the level of intensification of production than food grain crops, which is relevant under economic conditions. Like in the pre-reforming period, feed crops are mainly cultivated according to the "residual principle". This is noticeable in

the development level of selection and seed breeding of forage crops, their secondary role in grain rotation and prices on grain market. Even in this state of production development, a high yield of fodder crops is achieved, although the positions, especially of grain legumes, have been lost to some extent. The commodity part of feed crops is formed from the volumes sold by agricultural enterprises, part of grain remains on farms for their own needs (livestock production, wages, insurance fund, etc.).

When determining the country's large commodity grain production zones, the republic can serve as a guideline for production and procurement of the most important grain crops - the main components for mixed fodder production.

Since feed grain production largely determines farm profitability, and the higher the yield (therefore, gross yield), the greater opportunities the producers of feed grain have to improve the quality of arable land, use best seeds, use fertilizers, purchase equipment and update other fixed assets, ensure higher wages.

In solving the grain problem, not only the increased grain production should be the priority, but also its effective use, primarily for fodder, which makes about half of its volume in expenditure part of grain balance. Therefore, the rational use of feed grain is important as well as improving the efficiency of its production. The existing grain consumption structure for feed purposes does not meet the scientifically justified rates of feeding farm animals [7]. The most important condition for poultry farming development is the provision of poultry with complete feed, which share in the structure of poultry production costs is about 70%. In poultry farms of the republic, a difficult situation is observed in terms of feed availability, an acute shortage of grain feed was formed, which is caused by the increased price from 45 thous. tenge in 2018 to 75 thous. tenge and higher per ton in 2019.

A similar situation is in oil crops (sunflower, soybeans) - the main sources of protein. Due to their shortage, many oilseed processing plants stand idle. The situation is aggravated by the fact that in 2018 many poultry farms did not receive full public support in the form of subsidies for final products. Last year the amount of unpaid subsidies to poultry farms amounted to more than three bln. tenge. In 2019, from 12.3 bln tenge which are foreseen for poultry farms for eggs, only 5.4 bln tenge is provided for payment, the shortage is almost 7 bln tenge.

Electricity costs increased by 10%, fuels and lubricants - by 20%, mixed feeds - by 50%, equipment, components and spare parts - by 80%, vitamins and veterinary preparations - twice.

The situation in this industry may lead to a reduction in production volumes, jobs, freezing investment projects, and saturating the domestic market with imported products.

It is necessary to create public fodder fund in the amount of the semi-annual demand of poultry farms for grain components in the volume of 600 thous. tons. To resolve this issue, in order to maintain production pace and volume, 300 thous. tons of feed grain from food reserve at a reduced price are needed, as well as maintaining public subsidies in volumes that ensure stable poultry industry development, payment of subsidiary debts to poultry farms, and allocation of missing funding for subsidies. Improving the use of grain for feed purposes is a complex, multi-faceted and complex problem, including improving the species structure of produced and used grain for feed purposes, ensuring feed grain only in processed form, improving quality and lowering mixed feed cost [8].

High-grade mixed fodders balanced by protein and other nutrients are 25-30% more effective than conventional grain feeds.

The efficiency of using grain for feed purposes is determined by four main aspects: prices for the components of animal feed, in particular grain; mixed feed prices; purchase prices for livestock products and retail prices for animal products.

As a result of the irrationally formed grain crops area structures, concentrated feeds are spent on livestock production are 1.5 times higher in comparison with the standards. This leads to the need of the additional purchase of high-protein grain and additives, which also results in increased cost and makes feed inaccessible.

The analysis of feed grain market and its production shows that urgent organizational, scientific and practical measures are needed at the level of the republic aimed to improve the state of grain production. The development and implementation of scientific approaches aimed to optimize feed crop production in accordance with the needs of livestock industries are needed. At the same time, the capacity of feed grain market will be determined not only by the state of the entire grain industry, the level of feed production at current feed grain costs in animal husbandry, but also by the objective forecast of agro-industrial complex development as a whole [9].

Current trends are expressed in decreased livestock productivity, decreased livestock population of the main herd, deterioration in the volume and quality of vegetable feed, and increased share of feed grain in the feed balance of the whole republic.

The growth prospect for the feed grain market is based on stabilization of livestock population, and productivity growth will be largely provided by the increased feed supply in diets. In order to achieve the required rate of consumption of milk and dairy products, its annual production in the republic should be increased (taking into account population growth) up to 7,350 thous. tons. To obtain such indicator in dairy cows at the quantity of 2 256 685 heads, their milk yield should be 3,263 kg per year (intensive way), the other way (extensive) - is to increase the number of dairy cows to 312,868 thous. heads, and increase in dairy herd by 872 thous. heads.

A significant factor influencing on the situation on grain market is the position of large mixed feed mills and elevators - local monopolists. Grain producers are geographically limited in their choice of feed grain processing method, which is not very effective and undermines the foundations and advantages of specialized production; enterprises are involved into non-profile activities and incur additional losses over an extended period. The situation is aggravated by the increased transportation costs and it becomes practically unprofitable to provide mixed feeds due to tolling grain. Earlier it was considered cost-effective to transport mixed feeds up to 80 km, but when prices for fuels and lubricants increased - up to 50 km.

The situation in which the use of feed grain brings only losses leads to the decrease in demand for feed grain and is reflected in the price level of agricultural production sectors. The profitability of feed grain is lower, since it does not reflect the real wages of the workers in crop and livestock production, compensation payments for accumulated debts, and replenishment of funds. This situation is observed even in conditions when grain yield capacity in the republic is at its maximal level for a long period.

The level of providing farms with feed grain determines the productivity of livestock and poultry, stability of livestock industry. It is not enough to have a sufficient amount of prepared feed per conditional head, the scientifically based approaches to the composition of the used diet are also necessary, in which quality concentrated feeds are important.

In current conditions, problems in the field of feed grain turnover are largely associated with the lack of a scientifically based concept for feed grain market development. In particular the interaction of supply and demand on it determines the level of fodder prices.

The concept of regional feed grain market development involves the implementation of the following measures:

- introduction of stock exchange trading system with a high level of information support, which foresees maximal openness in the course of trading and the increased number of farms and enterprises involved in grain procurement, storage and refinement;

- creation of conditions for the development of market forms of integration of feed grain production, storage and processing enterprises;

- development of State program on financing and support for enterprises producing valuable feed grain and raw materials, participation in the formation of market turnover system, including timely set purchase prices for regional grain funds, creation of favorable conditions for grain sales to agricultural producers;

- State participation in the development of a local storage system aimed at guaranteed provision of rural population with feed grain, expansion of wholesale trade, turnover of grain and its processed products.

It should be noted that there are also the shortcomings of market infrastructure, an important component of which is market system. Therefore, one of the main directions of feed grain market development is the formation of the missing elements of regional market infrastructure and subsequent participation in the work of the specialized regional grain stock exchange, information support, including the creation of a computer network with a grain market database.

Conclusions

1. The successful solution of the problem of the targeted development of grain crop production and the increased yields of high-protein grain to the required level requires, first of all, a system-integrated approach to their comparative evaluation.

2. Unilateral assessment cannot provide sufficiently justified conclusions about the role of each crop in the economy and organization of feed production, increasing the efficiency of livestock production and feed grain market development.

3. One of the main directions of feed grain market development is the formation of the necessary elements of market infrastructure at the regional level, the effective

operation of a specialized regional grain stock exchange, and information support.

4. Current trends are expressed in decreased livestock productivity, reduction in livestock population, decreased volume and deterioration of the quality of plant feed, and increased share of feed grain in the nutrition balance.

5. Prospects for the feed grain market growth are based on stabilization of livestock population, ensuring productivity growth to a large extent due to the increased feed portion in diets.

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