

# Organizational and economic aspects of selection and seed production of the South of Russia

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**Abstract.** The purpose of this research is to analyze the seed market, selection and seed production in Krasnodar Territory. Effective sales of seed products are becoming a competitive advantage for developing companies. In modern economic conditions, the development of market relations in the grain industry and the seed market has disrupted the selection process, leading to a sharp drop in grain production of individual crops. It was reflected in the increase in the sowing of the grain crop area with low quality seeds and seeds of mass reproductions, reducing the volume of harvested seeds for the state resources, the suspension of seed circulation and violation of the seed renovation, the ordinary transition of farms to provide seeds of their own production. Conclusions are made and forecasts for domestic agricultural producers are determined based on the current market dynamics. The guidelines for state support of the industry are indicated to solve the problems which the Ministry of Agriculture has developed as a Strategy of the development of selection and seed production of major agricultural crops until 2020. The necessity of cooperation between business, educational and scientific institutions of agricultural profile in solving the problem of providing high-quality seeds to agricultural producers is substantiated.

In recent years, certain positive trends have emerged in the agricultural sector of the Russian Federation. At the same time, the country's agricultural sector has not yet overcome the consequences of the systemic and deepening financial crisis, and it is necessary to develop and implement a set of scientifically based measures aimed at ensuring sustainable development. One of the problems in the agricultural sector of the economy remains the seed market.

The development of market relations in the grain industry and the grain market disrupted the selection and seed-growing process, led not only to a sharp drop in grain production, but also to a serious situation in seed production. It resulted in increasing the acreage of grain crops under substandard seeds and seeds of mass reproductions, reducing the volume of harvested seeds for the state resources, the suspension of seed circulation and violation of the seed variety renovation, the transition of ordinary farms to provide seeds of their own production. The material and technical base is outdated and physically worn out,

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which does not allow us to receive fully the high-quality seeds, currently, up to 80% of vegetable and sugar beet seeds, up to 60% of corn seeds, up to 50% of potatoes and sunflowers are imported from abroad [1].

In accordance with the Plan on improving the control and licensing functions and the organization of public services provided by federal executive authorities in the field of agriculture, approved by the Order of the Government of the Russian Federation dated March 9, 2010 No. 299-r, and the law "On technical regulation", state bodies do not provide services in the field of "seed and varietal" expertise. Currently, any interested party can conduct a "seed and varietal" examination in two independent systems of voluntary seed certification "Rosselkhozadzor" and "Semstandart", which were created and operate in accordance with the law "On technical regulation". The number of such systems is not limited, in fact, any organization in compliance with the requirements of the law "On technical regulation" can create its own certification system, it is advisable because such organizations are self-regulating organizations of seed growers, for example, like the French Federation of corn and sorghum seed producers (F. N. P. S. M. S. - only the member of this association can produce corn seeds in France), which for more than 50 years can make expertise to assess the seed quality of corn hybrids and unites all breeders and seed producers of corn, and could undertake examination of the seed quality and thereby solve the problems associated with ensuring food security and development of domestic grain production [2].

The demand of the Russian Federation in corn seeds is 78 thousand tons. From 78 thousand tons 48 thousand tons are domestic seeds. Until 1990, the demand for corn seeds was measured at 120 thousand tons, this decrease is due to a decrease in the number of cattle. Currently, Russia imports about 15 thousand tons of imported corn seed material. These are representatives of Syngenta, Pioneer, etc. The average price of corn seeds of domestic production is 35-40 rub/kg, imported production is 380-400 rub/kg.

Considering the market relations in the corn seed sale as an example may serve agricultural consumer cooperative society, the plant "Kuban" (Krasnodar Territory, Gulkevichsky district, settlement Kuban), which unites more than 20 agricultural seed production enterprises of Krasnodar Territory and originators of corn hybrids - scientists of Krasnodar Scientific Research Institute named after P.P. Lukyanenko and Scientific Production Association "KOS-MAIS", and the Ladoga corn production plant which is one of the most technologically equipped seed production plants not only in Russia but also in Europe [3]. Own high-yielding hybrids "Ladozhskie" will play a major role in the implementation of the strategy of the development of seed production. In 2020, the company plans to increase Ladoga's share in sales to 100%, double its sales (from 2,400 to 5,000 tons), and increase the company's share in the Russian market to 7%.

The Kuban agricultural holding "Kuban" increases the acreage for its own corn hybrids and increases their production volumes as a part of the implementation of this strategy. In addition, the company plans to increase gradually the capacity of the Ladoga corn calibration plant from 5,000 to 10,000 tons per year, which will expand the product line of corn hybrids of its own selection and improve their quality [4].

Control over the technology of growing hybrid corn of the first generation is provided by the agricultural service of the plant, scientists-originators of selection achievements, which guarantees the absolute varietal purity of the offered seeds.

In order to prevent counterfeit seeds, each label bears a holographic mark with the manufacturer's trademark, registered and protected in accordance with the procedure established by law [5].

According to experts' calculations, the use of counterfeit seeds reduces the yield of products from 1 ha of crops based on feed units by 40 %, the absence of milk-wax ripeness

in the silage mass reduces the nutritional value of feed by 35%. In Russia as a whole the counterfeit seeds sown caused 6 billion rubles of economic damage in 2008.

The business of seed falsifiers is determined by the following factors:

- regular feed corn is purchased, processed, and painted over dye and packed in bags.

Documents accompanying the product are obtained when purchasing at least 1 ton of seeds from real ones at manufacturers. Then certificates to any hybrids and in any volume are copied [6].

It is very difficult for the Rosselkhoznadzor and the Rosselkhozcenter to prevent the mass release of counterfeit seeds to the country's seed market.

How to protect the farm from the risk of buying low-quality seeds?

First, we need to purchase seeds from companies that have distribution agreements with seed producers.

Second, when purchasing seeds, it is necessary to determine the manufacturer of seeds and the originator of the hybrid according to the submitted certificates. Contact them by phone to confirm the authenticity of the seeds.

Today in Russia, less than two dozen enterprises produce real seeds, and there are fewer originators of hybrids - those who produce parent forms for the production of first – generation corn hybrids.

Enterprises that produce guaranteed quality seeds: SSPK "Agrosoyuz of Kuban" of Krasnodar Territory; LLC "Kuban corn hybrids" of Krasnodar Territory; LLC "KOS-MAIS" of Krasnodar Territory; LLC JV SSK "Corn" of Stavropol territory, LLC "Leader" of Volgograd region.

Created in the framework of the national project of development of agriculture supply of agricultural consumer cooperative society is comprised of more than 40 agricultural enterprises of Krasnodar Territory, producing seed corn, the originator of hybrids - of Krasnodar Scientific Research Institute named after P.P. Lukyanenko and the corn calibration plant.

In the context of the development of the seed market, one of the problems is filling the market with the second generation of seeds. Heads of agricultural enterprises offer to solve this problem by creating market operators. For this process, it is necessary to conclude agreements with regional administrations, which will publish information about the quality of seeds delivered to the region on the reports sites of seed enterprises.

Traditionally, the United States, the EU, Canada, and Australia are the world's largest importers of grain and food products using grain, including replacement materials, which are strategically important and constantly renewable commodities, the possession of which in abundance, allows them to pursue their policy of economic and political pressure on the world market purposefully, primarily on developing countries. In this regard, the Russian Federation should also have a new concept for developing foreign trade in seeds. The basis should be the use of seed exports as a permanent and powerful incentive to increase the production of high-quality seeds, including conditions of import substitution.

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