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Agricultural Experiment Station

Kansas State Agricultural College

Russian Seed Wheat.

The improvement of seed wheat for Kansas has been in progress at the Kansas Station for some years. But to further this work, a Seed-Wheat Bill was passed at the last meeting of the legislature, authorizing the Board of Regents of the Agricultural College to send representatives of the Experiment Station to investigate sources of seed-wheat supply, and to import seed wheat if deemed advisable. In accordance with this act of the legislature, Prof. A. M. TenEyck made a personal investigation in Alberta, the writer in Turkey and Russia, and at the present time Prof. H. F. Roberts is making an investigation in Roumania, Hungary, Germany, and Sweden.

The annual total yield of wheat in Russia averages approximately 625,000,000 bushels — just about the general average of the United States. In our country about three-fifths of the production is winter grown and two-fifths spring grown, while in Russia fully three-fourths of the wheat is spring grown. The spring wheat yield in Russia is also increasing, due to the extension northward into new regions that do not admit of winter crops. As to the yield of these two classes, winter wheat gives the largest per acre, and averages from 25 to 40 per cent more than spring wheat. It may be stated as an invariable rule that winter wheat gives a better yield than spring wheat; and in this connection it may be said, also, that the winter wheat in Russia requires and gets better care than spring wheat.

While the total production of wheat in Russia compares favorably with other countries, when compared as to yield per acre the comparison is far from favorable, as is seen from the following five-year-period averages: 1885-1890, 7.1 bushels; 1890-1895, 7.9 bushels; 1895-1900, 8.6 bushels; 1900-1905, 9.1 bushels. The 1906 average is estimated at less than 8 bushels per acre. If Russia's acre average equalled that of Germany, for instance, the annual production would not be far from 1,500,000,000 bushels. This low yield is not due to the type or the character of the soil, for the soil is relatively good, and many large areas are especially noted for their exceptional fertility.

The climatic conditions are unfavorable during certain years, giving rise to what is known as "Famine Years" that occur once or even twice during a five-year period. A leading cause of poor yield of wheat in Russia, of both winter and spring wheat, is the poor methods in vogue, especially the methods employed by the peasants and the uneducated landowners. Agricultural methods in Russia are very primitive, including the rotation system, the methods of culture, and the style of fertilization.

The common system of rotation in the center of the wheat belt is as follows: First year, fallow; second year, winter crop; and third year, spring

crop. A not altogether uncommon system is that involving continued culture until the land is exhausted. It is given over to non-production, or resting, for 10, 20 or 30 years, or until its production is restored again.

Leguminous crops as a part of the rotation system are, as a rule, never employed, and only on a few large estates. It is on these farms that the best farming is done in Russia, and real progress is now and has been for many years taking place.

Diversification of crops is therefore spreading and will become more popular in time. But it is unlikely that such will be at the expense of the wheat crop. Not only is the land abused in wheat growing, and the general rotation scheme unscientific and hurtful to the soil, but the tools and implements employed are of the most primitive sorts. In the first place, the kinds of farming tools are small in number, they are very poor, and altogether inadequate for doing the work required. The plow, so common and indispensable to us, is a luxury in many parts of Russia. In one district in Russia, less than 20 per cent of the entire tilled land was broken with an iron plow. More than 75 per cent of this work was done by a tool known as the *Sokha*, a forked-stick sort of plow, that scratches the soil from two to four inches deep. A few wooden plows, between 5 and 10 per cent of the total soil-breaking tools, are found in many of the wheat districts.

The reason so many poor tools in the wheat district are found is because of the poverty of the people. While primitive forms are employed by the peasants, on the other hand improved tools of all kinds, including plows, harrows, harvesters, and threshers, are used on the large estates.

The greatest progress in wheat growing is found on the large estates. Here some diversification in crops is practiced, fertilizers are often used, seed is usually selected, and improved methods are generally employed. On one estate near Kharkoff more than 300,000 bushels of wheat were grown last year.

The quality of the red winter wheat of Russia is good, but perhaps no better than the present improved wheat stock of Kansas. Two sections stand out prominently as sources of seed supply: Central Crimea (Taurida Province), especially between Simferopol and Melitopol; and farther to the north, in the Province of Kharkov, in its eastern part where the climate is very dry and cold.

For purposes of comparison and tests at the Kansas Experiment Station and other places in Kansas, samples that have been under improvement have been secured from both of these districts. In all, about 25 varieties and lots were selected during the past summer, all of which are now at the Station and will be seeded this fall. These varieties will be tested in comparison with the improved varieties of the Station, and by another year the Station will have at hand real, positive information of the value of further importation, especially of large quantities for general State supply.

The wheat of Turkey is inferior to Kansas-bred wheat, and it is not advisable to look in that direction for improved seed stock.

The cost of importing the best selected seed wheat from Russia and delivering the same in Kansas will be approximately two dollars and fifty cents per bushel. This means good wheat, somewhat improved by selection, and fairly free from weed seeds.

C. W. BURKETT.

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