

Problemy rolnictwa światowego



AKTUALNE TENDENCJE
W MIĘDZYNARODOWYCH
STOSUNKACH GOSPODARCZYCH
W ROLNICTWIE I GOSPODARCE ŻYWNOŚCIOWEJ

PRESENT TRENDS IN THE INTERNATIONAL RELATIONS
IN AGRICULTURE AND FOOD ECONOMY

Tom XII 2004



Wydawnictwo
SGGW

Olga Chureina¹
Chair of Organization and Management
Grodno Agricultural University

THE INFLUENCE OF NATURAL AND CLIMATICAL CONDITION ON THE EFFICIENCY OF AGRICULTURAL PRODUCTION

WPŁYW WARUNKÓW NATURALNYCH I KLIMATYCZNYCH NA EFEKTYWNOŚĆ PRODUKCJI ROLNICZEJ

The deep economical crisis that involved all the branches of national economy of Republic of Belarus considerably influenced the state of the agriculture. The nowadays state of agricultural enterprises in Grodno region is characterized with the worn-out basic production assets, insufficient quantity of the circulating assets, etc.

The agricultural production is in a noticeable way influenced by the natural and climate conditions.

The productive activity of the agricultural enterprises is led in various conditions. The difference in natural-climate factors, soil fertility affects the economy state of the enterprises, the level of their development.

We defined the influence of the natural-climate factors to the results of the agricultural production in collective farms in Grodno region. At first all the resources were transformed to identical energy equivalent.

According to this method we recalculated the factors from natural to energetic. Thus we defined that the ratio of energy of natural-climate factor in production of plant cultivation is in year 1997 – 24.7% and in year 2002 – 23.3%. Consequently, we can say that agro climatologic potential plays an important part and for the $\frac{1}{4}$ determines the volume of derivable production of plant cultivation.

Natural and climate conditions, along with the other factors, guarantee the increase of the agricultural production efficiency.

The land in agriculture is the labor object and the implement. The land is the particular, the only, and the original and irreplaceable means of production.

¹ MA, 28 Tereshkova St., 230008 Grodno, Republic of Belarus

In agriculture the producing is bound exactly with the quality state of soil, with the conditions and character of its use. It is the main productive power and the agricultural production is unthinkable without it.

The agricultural enterprises are to cope a task to use the soil with the maximal efficiency.

The total area of the collective farms in Grodno region in 2002 year is 105356 ha. 87.5% (92151 ha) out of this number are the agricultural grounds. The percentage of the broken grounds is 72.5% which is higher than in 1997 and higher than an average ratio in the district. Besides we have to mention that in 2002 compared to 2001 the ratio of hayfields and pastures increased along with the reduce of the arable land. It is caused with the transform of the arable land of low quality into forage grounds.

Within the period 1997 to 2002 the ratio of improved hayfields and pastures in total amount of land.

We also have to analyze the course and structure of sown area for different crops.

The highest ratio (about 50%) in sown structure has the cereals and grain-crops and leguminous plants. About 40% are the forage crops. Within the period 1997 to 2002 the ratio of cereals reduced in Grodno region as well as in whole district. It caused the increase of leguminous and forage plants. We also should notice that the structure of sowing in district stayed almost the same.

The factor to characterize the quality of soil is its cadastral estimation in points.

In the Republic of Belarus the economical estimation of agricultural grounds with the productivity below 20 points possess 515 agricultural enterprises, or 20% of total number. The area of agrarian grounds with the estimation below 25 points makes 50.7%, 25-35 points – 38.9%, and above 35 points – 10.4%. The same rule we can notice analyzing the arable land. Let's consider the Grodno region: the estimation below 25 points possesses 2 collective farms (or 13%), 25 to 35 – 5 enterprises (31%), above 35 points – 9 collective farms (or 56%).

In Grodno region the results of cadastral estimation show out the existence of wide variety of arable lands and other types of land of different quality. So, in 2002 the highest rank possesses the collective farm im. Denschikova – 45 marks, the lowest – “Rodina” collective farm, thus within the enterprises the difference has the multiplier 3. In the same enterprises we see the highest and the lowest mark of arable land.

To estimate the effect of soil quality upon the results of agricultural production we made statistic grouping of collected farms of Western region of Grodno district by the conditions of production.

Together with the increasing of the mark of agricultural grounds the total production, the ratio of arable land in area of agricultural grounds. The profitability of the production rises too. Thus, in enterprises with the estimation below 25 points the profitability is 5%, while in enterprises with the ground estimation over 35 points – 27%.

So we can see that along with the increasing of the agricultural grounds the other factors taken in grouping. Consequently, the quality of land influences very much upon the results of the agricultural production.

The main parameter of use efficiency of arable land is the productivity of agricultural plants. While analyzing the productivity of main agricultural crops in Grodno region we can notice that in 2002 compared to 2001 the productivity of grain crops and potato increased with 14.9 and 18.4% consequently. Along with this the productivity of beet and forage crops reduced with 26.7% and 36% conseq. But we should notice that the productivity of these crops was pretty high within the last 5 years. Thus we can conclude that the droughty summer of 2002 adversely affected the efficiency of production of plant growing.

On the basis of this analysis we can conclude that the efficiency of agricultural production is gradually influenced with the natural and climate conditions.

Autor opisuje obecną sytuację w rolnictwie Białorusi. Ważnymi czynnikami wpływającymi na produkcję rolniczą są warunki naturalne i klimat. Wpływ ten był szacowany i uzyskane wyniki potwierdzają postawioną tezę. Badano także jakość ziemi w rejonie Grodna, jak i jej wpływ na wielkość produkcji rolniczej. Analizowano także różne czynniki wpływające na wydajność ziemi.