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Agroresources potential of Central Polissia

Aim To carry out the estimation of agrarian potential of cultures in the conditions of Central Polesye and to define the most perspective directions of development of agrarian production in relation to maximal realization of present agrarian resource potential on sod-podzolic soils. Methods. Field, laboratory, statistical. Results Marketability of agro-resource potential of cultures are shown during simultaneous optimization of nourishing, water-air modes of soil and the factor of crop rotation in different combinations. Conclusions. From the investigated systems of fertilizer the organo-mineral systems of fertilizer appeared most productive. The optimization of the water-air and nourishing modes and the factor of crop rotation comparatively with a natural background contributes to the increase in the productivity of cultures from 1.9 to 10.2 tones per unit / ha, or more than 5 times.

Key words: agro-resource potential, water-air and nourishing modes, rubber zone, factor of crop rotation.

Raising of the problem. On the reclaimed land of the agricultural plant, there are features predefined by the specificity of the ground cover and related to the adjustment of the water-air mode, the application of the corresponding systems of rotations and fertilizers. The analysis of present presently problems in agrarian industry on the reclamated earth of Polesye testifies to the necessity of search of new directions of their decision. It is a scientific ground of the systems of agriculture and input of the effective, improved technologies growing of agricultural cultures, that will provide not only the receipt of high harvests and quality products but also maintenance of fertility of the drained earth, and also ecological equilibrium of environment.

It should be noted that as a result of the drainage of earth mushroom growth, the erosion of soils, especially the wind, bought on Polesye, the water mode of the river became worse, the groundwater level fell down adherent territories, what productivity of agricultural cultures fell down because of [5]. Throwing of peat-marsh soils open resulted in the rapid mineralization of organic mass with the next wedging of soil-forming infertile breeds [7, 9, 10]. The drainage of soil-rich organic matter entails the sharp increase in their acidity [7]. In addition, from data of researches [2-4], the agroecological state of the ground cover of the Polesye zone is significantly deteriorating due to the failure to observe scientifically rational crop rotations, systems of fertilizers, till the soil, diminishing of the population of cattle and parts of long-term herbares in the structure of sowing.

The decision of the problem of increasing the productivity of drained ground consists in optimizing the technological parameters of the basic links of reclamative agriculture. By means of modern technologies of reclamative agriculture it follows to decide a task in relation to the most productive use of drenched earth for receiving high and stable agricultural crops.

Aim of researches - to carry out the complex estimation of agrarian potential of agricultural cultures in the conditions of Central Polesye and to define the most perspective directions of development of agrarian production in relation to maximal realization of present agrorezporal potential on soddy-medium podzolic soils.

Methodology of researches. The research was conducted in the stationary experience, placed on soddy-medium podzolic sandy-loam soil (p. Of Grodno of the Korosten district of the Zhytomyr region, Institute of Agriculture of Polesye NAAS), which has such agrochemical description: maintenance of humus - 0 , 86-0.94%, movable connections of phosphorus - 23-24 mg / kg to soil and potassium - 14-23 mg / kg to soil,

pNsol. - 4,5, Ng - 2,4 mg • of ekv / 100 g of soil. During researches, the most beneficial systems of fertilizer and basic conformities to the law of influence of growing norms of fertilizers and agroclimatic factors most economically studied on the productivity of agricultural cultures.

Sowing plottage - 102 m2, registration - 60 m2, a reiteration is 4-valid for one occasion. Crop rotation: lupine, rye winter-annual, potato, oat + clover, clover, flax, winter wheat, corn on a silo, buckwheat. The agrotechnics of growing agricultural crops is generally accepted for this region.

For the evaluation of the effect of systems of fertilizers on the efficiency of agrotechnologies from the 25 variants of stationary experience, the most widespread variants of the system of fertilizers are taken: mineral, organic and organo-mineral. However, these variants are considered by us as models of specialization in agrarian production or as elementary agroecosystems (Table 1).

Say, control without fertilizers, imitating the most widespread productive practice of growing agricultural crops without carrying out fertilizers and without the conduct of stock-raising. Carrying away only of mineral fertilizers is also peculiar to vegetable specialization. Variants with carrying away 2.2; 6.7 and 8.9 t / a and leave to be blended together with mineral fertilizers. Design the mixed branch structure with the closeness of cattle 22, 67 and 89. head / 100 hectare to plow-land, and systematic application of 4.4 tons / foresee a solely stock-raising specialization with loading 44 minds. head / 100 and to plow-land.

1. Variants of stationary experience, that design different specializations of agrarian production

Results of researches. The informative base of this stationary experience gave an opportunity in number to set efficiency of the systems of fertilizer, that answer different specialization of agrarian production. Yes, on control during 30 years the least productivity of agricultural cultures (rice. 1) was got.

At the mineral system of fertilizer, that imitates plant-grower specialization also, comparatively with control the increase of harvest of agricultural cultures (buckwheats) in middle increased on 0,05 and 7,9 т/and (corn on a silo). This system of fertilizer even something yields before a variant, where brought in only 4,4 т/and leave to rot.

The organo-mineral system of fertilizer (pus, 8,9 т/and + NPK) appeared most effective. An increase of harvest was substantial and presented in middle for the grain-crops (oat, a wheat and rye are winter-annual) of 81-114%, forage (a lupin, potato, corn, is on a silo and long-term herbares) - 105-206, flax and buckwheat - almost 100%. Did not yield after the influence on the productivity and previous organo-mineral system of fertilizer - to the pus, 6,7 т/and + NPK.

Rice. 1. Productivity of agricultural cultures at the different systems of fertilizer

It should be noted that in a 9-crop rotation, the most productive for years researches were a lupine, potato and corn on a silo, that for bringing organo-mineral fertilizers had the productivity of green mass or potato tubers of over 25 tons / and

By means of the informative base of long-term stationary experience, the factors of achieving the productivity of agricultural crops are set. The estimation of productivity gives an opportunity to define what culture is most productive in different agro-measures or factors. The basic index of estimation is the productivity of the basic and side products from the unit of area of the plow-land shown in the feed unit (1 kno equal to a feedvalue of 1 kg of oat).

So the optimization of the water-air mode increases the productivity of agricultural crops from 1.9 to 3.5 tones per hour and / or 1.8 times comparatively with a natural background (rice .2).

Rice. 2. Factors of realization of агропотенціалу of the productivity of agricultural cultures

Optimization of the nourishing mode comparatively with a natural background assists the increase of the productivity of agricultural cultures on 2,6 т к.од., or in 2,4 раза. If to optimize the water-air and nourishing modes, the productivity of cultures will grow on 6,3 т/and (in 4,3 раза), and for optimizations of all factors

(nourishing, water-air, crop rotation) the productivity of agricultural cultures will increase more than in 5 times. It is confirmed and by our previous researches for Polesye Left-bank and Western [1, 6, 8].

In such conditions, a transition from a 9-way crop rotation to the water-air and nourishing modes is optimized in that the 4-way will help to increase the productivity of agricultural crops from 8.2 to 10.2 tons to one ./g or in 1.24 times.

Conclusions

From the investigated systems of fertilizers in the Central Polesye conditions, the most productive are the organo-mineral systems of fertilizer (half, 6.7 t / and + NPK and half, 8.9 t / and + NPK) . Carrying away from the bottom of the 4.4-tonne norm, which is a special stock-raising specialization with loading 44 minds. head / 100 and, insufficient for the significant increase in harvest of cultures. In this case of loading it is necessary to lead to a to 150-200 mind. goal / 100 and.

Taking into account the increase of the level of agrarian potential of cultures, the optimization of the water-air and nourishing modes and the factor of crop rotation comparatively with a natural background contributes to the increase of productivity of the crops from 1.9 to 10.2 tons. units / ha, or more than in 5 times.

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