EFFECT OF DENSITY OF AGROCOENOSIS OF BLUE LUPINE WITH BARE-GRAINED OAT ON WEEDINESS OF PLANTING

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The weediness of the crop is factor which can reduce the effectiveness of measures aimed at improving crop yields. According to A.S. Kononov, T.P.Mironova, I.P. Taconova in lupine planting are created more favorable conditions for the growth and development of weeds, due to the presence symbiotic nitrogen in the soil and available forms of phosphorus through the root excretions of crop and potassium which stimulates the germination of weed seeds resided in the upper soil layer. In the list of legal pesticides included only two authorized for use on lupine the soil herbicides Treflan and Triflurex.

The densifying of lupine sowing by cereal components leads to suppression of weeds, which allow obtaining products without chemical weed and pest killers.

The aim of researches was to develop technology for the joint cultivation of blue lupine and bare-grained oat without use of chemicals to protect crops from weeds.

Purposes and methods of research. Research on compatible cultivation of the above cultures were performed in the experimental fields of Department of adaptive and intensive technologies of legumes, cereals and oilseeds of NSC "Institute of Agriculture NAAS" during 2010-2012 on gray forest soils. The scheme of the experiment included variants of fertilization: without fertilizer, N_{30} and $N_{30}P_{45}K_{45}$. Sowing of blue lupine of variety Peremozhec at the studied variants carried at the normal sowing seeding rate - 1.2 million seeds per ha, of oat of variety Salomon - 1.5, 2.5 and 3.5 million seeds per ha; at the control of monosowing the seeding rate was 4.5 million seeds per ha. Seeding mixtures was carried out by addition of cross-circuit method. Seeds of lupine treated by preparations based on active strain of nitrogen-fixing bacteria of the genus *Rhizobium lupini* №359 and bare-grained oat treated by by Ahrobakteryn preparation based on the active strain of associative bacteria *Agrobacterium radiobacter* on the day of sowing.

The results of the research. Average years of research, the number of weeds in the seedling stage ranged from 123 to 245 p/m^2 for the joint cultivation of blue lupine and oats they depending on the type of fertilizer, the level of densification of planting of bare-grained oat and pre-sowing seed treatment with bacterial preparations. In single crop planting of blue lupine the number of weeds ranged from 191 to 362 p/m^2 and in oats planting - from 127 to 306 p/m^2 depending on the studied factors. Option without making mineral level thickening sowing bare-grained oat a seeding rate of 2.5 million units/ha and conducting pre-sowing treatment of oat seeds with Agrobacterium provided low number of weeds (123 p/m^2).

Crop weediness of planting ranged from 61 to 216 p/m^2 in the combined crops of blue lupine and oats in the phase of full maturity. In one crop planting the number of weeds in this phase were 146 - 286 p/m^2 and 167 - 329 p/m^2 for blue lupine and bare-grained oats respectively. The greatest number of weeds (216 p/m^2) was observed in the variant with making $N_{30}P_{45}K_{45}$ on the density level of bare-grained oat planting with a seeding rate of 3.5 million p/ha and pre-sowing treatment of oat seeds by preparation Agrobacterin.

Air-dry weight of weeds in single crop planting of blue lupine was in the range from 190.1 to 306.7 g/m^2 regardless of fertilizer and seed treatment. In in single crop planting of bare-grained oat air-dry weight of weeds was from 29.1 up 74.6 g/m^2, while in the joint agrocenosis of lupine and oats this index ranged from 10.3 to 74.0 g/m^2.

In variants of joint cultivation of blue lupine with bare-grained oat weeds that have survived to the phase of full ripeness of the crops almost not formed generative organs.

The conclusions. The least air-dry weight of weeds (10.3 g/m^2) and their number (69 p/m^2) was formed on the variant without fertilization for level of densifying of blue lupine planting and bare-grained oat with a seeding rate of 2.5 million un/ha and pre-sowing inoculation of bare-grained oat by agrobacterin. In

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