INFLUENCE OF DOSES OF MINERAL FERTILIZERS ON PRODUCTIVITY OF BLUISH SPRING MUSTARD UNDER NORTH EASTERN FOREST-STEPPE OF UKRAINE

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Abstract. Recently, increasing attention is paid by scientist and industrialist to non-traditional, so-called niche crops, which are able to significantly diversify the monoculture domination of oilseed rotation in the direction of sunflower seeds and rape. Also in Ukraine, in the context of climate change, droughts are increasing every year, which increases the risk of growing traditional crops and requires the introduction of more crops adapted to such conditions in crop rotation.

One of these crops is mustard, which, along with the possibility of forming guaranteed, stable yields of seeds and raw materials of high quality, is characterized by relative unpretentiousness to the conditions of cultivation.

Yellow Mustard (*Brassica juncea* L.) is very important as an oilseed crop, with oil extracted from its seeds, which in its properties is not inferior to sunflower. Mustard oil has a nutritional and technical value. Mustard powder is a raw material for the production of mustard and dill mustard. In Ukraine, mustard is considered a niche crop. But the experience of traders proves that it deserves more attention. In 2012–2014, when grown, the profitability of mustard was about 20 %. A reserve for increasing economic efficiency is the observance of modern agro technologies of cultivation. The experience of advanced farms confirms that the profitability of cultivating this crop reaches 60 %. In this regard, the rational use of mineral fertilizers and their high efficiency is of particular importance.

It was established that, under the conditions of the north-eastern forest-steppe of Ukraine, the application of mineral fertilizers under mustard cultivars, Prima and Retro, increases the duration of vegetation by an average of 6 days.

Application of fertilizers leads to an increase in the height of plants of mustard seed of Prima variety by 9,4 cm, Retro variety by 8,5 cm, while the number of branches of the first order increased by 0,6 and 0,9 pieces respectively. The addition of fertilizers also increased the number of leaves in the prima variety by 1,9 pieces

per plant, and their weight increased by 0,8 g. In Retro variety, the average number of leaves increased by 1,45 pieces, and weight increased by 0,7 g.

In the Prima variety, for the application of fertilizers $N_{30}P_{30}K_{30}$, the leaf surface area increased by 10,4 thousand m^2/ha, while the chlorophyll content increased by 0,05 mg/g. For the application of fertilizers $N_{60}P_{60}K_{60}$, the area of the leaf surface increased by 16,0 thousand m^2 / ha, and the chlorophyll content by 0,03 mg/g compared with the control. In the Retro variety, for the application of fertilizers, $N_{30}P_{30}K_{30}$ and $N_{60}P_{60}K_{60}$, the leaf surface area increased by 11,0 and 14,7 thousand m^2/ha, and the chlorophyll content in the leaves by 0,01 and 0,05 mg/g, respectively.

The fertilizer $N_{30}P_{30}K_{30,}$ increased the yield of Prima variety by 4,7 c/ha, and the Retro variety by 4,1 c/ha. The increase in fertilizer rates to $N_{60}P_{60}K_{60}$ increased yields by 6,1 c/ha for Prima variety and by 5,3 c/ha for Retro variety, but the difference between the rates of fertilizers is not significant.

Scientific results of experimental studies will be the basis for recommendations on technologies for growing yellow mustard in the area of north-eastern forest-steppes of Ukraine, aimed at the realization of high genetic potential of varieties.

Keywords: yellow mustard, mineral fertilizers, vegetation period, morphological parameters, leaf area, chlorophyll, yield