Annotation

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Weediness of spring barley crops depending on the main cultivation under the conditions of Southern Forest-Steppe of Ukraine

The studies were conducted in 2014–2016 as a stationary experiment of Department of General Agriculture of Uman NUH. Weediness of spring barley crops depending on the ways of the basic soil cultivation-plowing and nonmouldboard cultivation is studied. They were made to different depths: 15–17, 20–22 and 25–27 cm. The check variant was plowing of 20–22 cm. The soil of the experimental plot is podzolized heavy loamy chernozem.

Determination of the potential weediness of crops was carried out before barley sowing. Soil samples were taken by five-time replication with Kalentiev sampler with further washing of weed seeds over sieves with the diameter of 0,25 mm. The actual weediness of crops was defined by a quantitative method with determining the species composition of weeds.

An increasing trend in the number of weed seeds while reducing the depth of types of tillage was observed during all the years of study. On average, in 2014–2016 after increasing the depth of plowing from15–17 to 25–27 cm the number of weed seeds in the layer of 0–10 cm decreased from 269 to 259 million seeds/ha and at the same deepening of nonmouldboard cultivation it decreased from 316 to 266 million seeds/ha. The use of moldboard plowing was more effective in order to reduce the potential weediness of spring barley because comparing with nonmouldboard cultivation the number of weed seeds in the layer of 0–5 and 0–10 cm before sowing was more than on average over the years and taking into account all types of tillage depth, respectively, at 34 and 31 million seeds/ha.

Years of research on barley weediness at the beginning of the growing season differed from each other both in the total number of weeds and their species composition. The only general thing was that during all the years of the research annual weeds were predominant and the specific weight of perennials presented by canada thistle and creeping thistle was between 0,3-0,7 percent in different years.

Barley crops were less weeded in 2014 and they were more weeded the next two years when the spring period was characterized by heavy rainfall. In most cases, the replacement of plowing with nonmouldboard cultivation, as well as the use of not deep tillage were accompanied by a marked increase in the total weediness of barley crops.

Speaking about annual weeds, most of all there were millet weeds, scarlet pimpernel and annual woundwort in different years. Their number increased with decreasing the depth of tillage and replacement of plowing with nonmouldboard cultivation.

Key words*: plowing, nonmouldboard cultivation, tillage depth, spring barley, potential and actual weediness of crops.*