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Productivity of winter wheat depending on influence of factors of technique

Goal. To study the influence of predecessors, the timing of sowing, and to evaluate varieties on the yield of winter wheat grains. Methods. Field and statistical-dispersion analysis. Results The results of research of separate elements of the technology of winter wheat cultivation are covered. The dependence of grain yield on predecessor, sowing dates and varieties is proved. Conclusions The yield of wheat grain on a black steam makes up 5.25 t / ha on average, according to the predecessor, perennial bean grass - 4.81 t / ha. Under the second sowing period, the grain yield was 5.20 tons / ha, and the first - 4.86 tons / ha. In the estimation of varieties, on average, the yield of the Bila Tserkva half-carcass variety was greater than that of the Tsarivna variety at 0.32 t / ha.

Key words: winter wheat, grain yield, predecessors, sowing dates, varieties.

By the indicator of wheat grain yield, the degree of economic development of the country is estimated [5, 8]. Depending on the timing of sowing, the plants may fall under the conditions of vegetation factors that differ. It affects growth and development, as a result - it is indicated on the yield of wheat [1, 9]. An important condition for obtaining high yields of winter wheat is the observance of crop rotation, as well as placing it after precursors that provide optimal water and nutrition regimes, successful weed control [2, 6].

The purpose of the research is to study the influence of sowings, dates of sowing, and evaluate varieties on the yield of winter wheat.

Research methodology. The research was conducted on a joint research field of the Vinnytsia National Agrarian University and the Institute of Forages of NAAS during 2009-2011. The following factors were investigated: predecessors (A) - black pairs, perennial bean grasses; sowing time (B) - the second decade of September, the first decade of October; varieties (C) - Bila Tserkva half-carcass, Tsarivna. The repetition of the experiment is 4 times, the area of the plot is 25 m2. The harvesting of wheat grain was carried out by direct sampling of the accounting sections by the Sampo harvester 130 ". Field studies were carried out in accordance with the requirements of scientific agronomy, set forth by B.A. Vospehovy [4].

Research results. Established experimental data show that black pairs compared to predecessor perennial bean grasses are the most effective factor affecting grain yield in winter wheat cultivation technology. Under the condition of the first seeding period after a black pair, the yield of grain of the Bila Tserkva half-carcass variety, on average, amounted to 5.21 t / ha per 3 years, and after the predecessor, the number of legume herbs was less than 4.81 t / ha. The difference is 0.4 t / ha (table).

For the Class of Princess, the pattern remains the same, the black pairs as the successor ensured the increase in yields compared with the predecessor of perennial bean grasses at 0.48 t / ha.

The second half of the sowing of the Bila Tserkva half-carcass yielded a grain yield of 5.59 t / ha after a black pair, and after many years of bean grass yield was 5.14 t / ha. The difference is 0.45 t / ha. Analysis of the data for the variety of Tsarivna under similar comparative conditions also characterizes the advantage of black pairs predecessor, provided that the yield of the grains was 5.25 t / ha, and after long-term legumes - only 4.81 t / ha.

Analysis of the years of research shows that in 2009, during the first sowing period after the fertile couple, the productivity of grain of the Bila Tserkva half-carcass variety was 5.24 t / ha, after many years of legumes - 4.85 t / ha. The difference is 0.39 t / ha with NIR0.05 - 0.23. Similarly, for the variety of Tsarivna - the difference in favor of increasing the yield of grain after a black steam was 0.43 t / ha. Under the 2nd sowing period, black pairs were also the best precursor for both varieties. Significant data differences are established.

In 2010, the increase in the grains of grain of wheat varieties was recorded due to black steam as a precursor. For example, the yield of grain of the Bila Tserkva Nematokrikilka variety was 4.82 t / ha (first seeding period), after the predecessor, perennial legumes - 4.50 t / ha, the difference - 0.32 t / ha NIR0.05 - 0.21 . For the same comparison, higher yields are also worthy for the Tsarivna variety, an increase of 0.47 t / ha. Similar results were obtained in the second term of the session. Significantly more productive wheat grain yield by factor A in favor of a black couple was also in 2011.

The evaluation of the results of Factor B - sowing times - showed that, on average, on the basis of the first stage of sowing, the yield of winter wheat grain was 4 , 86 t / ha, and provided the 2nd term was greater - 5.20 t / ha. The difference was 0.34 t / ha. By varieties - the precursor is black steam, yield of grain of the Bila Tserkva half-carcass variety was 5.21 t / ha, while the 2nd sowing date was 5.59 t / ha, the difference was 0.38 t / ha. A similar pattern with respect to the variety of Tsarivna. Provided that the predecessor perennial legumes, the Bila Tserkva half-carcass variety, when the sowing was carried out in September, provided a yield level of 4.81 t / ha. The sowing of the 2nd seeding period, that is, on the 1st decade of October, was more productive, the average yield in the three years reached 5.14 t / ha, the difference was 0.33 t / ha. As for the Tsarivna variety, at the first sowing date the yield was 4.47 t / ha, while the second - 4.81 t / ha.

In the years of research, this pattern was observed annually, which is confirmed by statistics.

In 2009, the yield of grain of the Bila Tserkva half-carcass variety was 5.24 t / ha, with the 2nd sowing date - 5.61 t / ha (black parstain). In 2010, the rates amounted to 4.82 t / ha and 5.18 t / ha, in 2011 - 5.57 and 5.98 t / ha respectively. The difference between the data is reliable. Regarding the variety of Tsarivna, the same pattern is established.

Under the condition of predecessor perennial legumes, the 2nd line of sowing provided an increase in the level of grain yield of both varieties. For example, in the case of the Bila Tserkva Nascierkivska breed, the yield of grain in 2009, at the 2nd stage of sowing, amounted to 5.21 t / ha, in the first term - 4.85 t / ha. The difference is 0.36 t / ha (NIR0.05 - 0.23). In 2010, the figures were 4.50-4.77 t / ha, and in 2011 - 5.09 - 5.45 t / ha, the difference between the data is reliable. Such preferences for the 2nd year of sowing are also characteristic for the Tsarevna variety.

The comparative characteristic of the two varieties showed that on average, the Bila Tserkva half-carcass variety yielded a yield level of 5.19 t / ha, and the Tsarivna variety was 4.87 t / ha. The difference is 0.32 t / ha. This proves that the factor C used in the study is effective, that is, the Bila Tserkva half-carcass variety is more yield-fed both under the condition of factor A and under condition of factor B.

If we compare the data of the first term of sowing, 2 varieties are determined among - in 3 years it achieved the following results: the black pairs in the Bila Tserkva Nascierkilkova variety - grain yield 5.21 t / ha, in the Tsarivna variety - 4.95 t / ha. The predecessor has long-term bean grasses for similar varieties: the yield of the first of them is 4.81 t / ha, and the second - only 4.47 t / ha. Assuming the 2nd time of sowing, comparing Bila Tserkva half-carcass varieties - Tsarivna, one can conclude that the yields of the two predecessors were higher for the Bila Tserkva half-carcass. For example, the black pairs predecessor - the grain yield for the Bila Tserkva half-carcass variety is 5.59 t / ha, and for the Kardivna variety 5.25 t / ha. For the same comparison, the difference in the data obtained for the cultivation of wheat after the predecessor of perennial legumes is 0.33 t / ha.

Conclusions

The effectiveness of the influence of black pairs in comparison with the predecessor of perennial bean grasses has been established to increase the yield of winter wheat grain. On average, over 3 years, the indicator was, respectively, on the condition of the first sowing date of the Bila Tserkva half-carcass - 5.21 t / ha, with the 2nd sowing date - 5.59 t / ha, after the predecessor, perennial bean grasses, the yield of the variety was characterized by - they have 4.81 t / ha and 5.14 t / ha.

The winter wheat seedlings in the 2nd term (1st decade of October) ensured the increase in the yield of grain of the Bila Tserkva half-carcass variety after the precursor black steam at 0.38 t / ha, after the predecessor, the number of legumes - by 0.33 t / ha.

Of the varieties, the most productive variety was the Bila Tserkva half-carcass. In the first sowing period after a black pair, the yield of winter wheat of the Bila Tserkva half-carcass was 5.21 t / ha, and the Tsarivna

variety was 4.95 t / ha. In the 2nd period of sowing, the indicators were respectively 5.59 and 5.25 t / ha. The best of comparative comparisons was the Bila Tserkva half-carcass variety in perennial crops after perennial bean grasses.

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