

Annotation

Alieksieiev O. O., Patyka V. P.

The yield of soybean cultivars Horlytsya and KyVin for the actions of inoculum and pesticidal burden in Right-Bank Forest-steppe Ukraine conditions

The problem of intensification of agricultural production and environmental protection increasingly kindles worldwide interest to biological nitrogen. Nitrogen-fixing microorganisms are an important reserve for improvement of nitrogen balance in the soil and increasing of crop yields. The effective use of the nodule bacteria activity, which fixes nitrogen from the air, improves soil fertility and saves a significant amount of mineral nitrogen and phosphate fertilizers.

The objective of the article is to study the effect of bacteria inoculum strains *Bradyrhizobium japonicum* M8 on the growth and development of cultivars Horlytsya and KyVin in combination with pesticides for establishing the existence of dependence between these components and yield formation of seeds in Right-Bank Forest-steppe Ukraine conditions.

The possibility of simultaneous use of pesticides and microbial preparations was established as a result of preliminary studies, however, these results were only possible when using *Bradyrhizobium japonicum* M-8, which is highly active and highly virulent strain, which is characterized by a wide range of variability with different soybean cultivars.

In this article, the influence of inoculation and pesticide on field germination and preservation of plants of soybean cultivars on average for 2013-2015 is examined. It is determined that higher field germination was characterized by the variants of the experiment, where was used inoculant M-8, and the inoculum M-8 in combination with the fungicide Maxim XL, regardless of the cultivar. It is shown that the highest percentage of intact plants during the vegetation period was observed in the use of the specimen M-8 together with soil herbicide Harnes.

In the article it is analyzed the yield of soybean depending on variety, inoculation and pesticide. The authors noted that soybean is a demanding culture to soil and agronomic requirements. It is shown that productivity of both soybean cultivars increased under the influence of inoculation of seeds with nitrogen fixing bacteria. It is revealed that the highest yield of soybean was formed in the variant with the placement of soil herbicide Harnes together with the inoculum of *Bradyrhizobium japonicum* M-8.

The article ends with the conclusions where it is noted that the highest yield of soybean cultivars is directly caused of the destruction and control of the vast amount of weeds in the variant of combined specimen of inoculum M-8 and soil herbicide Harnes. However, it is noted that the effect of the insurance herbicide Basagran suppressed a significant number of young minor weeds unlike annual grass.

Key words: inoculum, herbicide, soybean, nitrogen fixation, pesticide.