

Annotation

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The oxidoreductases activity in sunflower lines and hybrids during the broomrape infection

The article presents data of the oxidoreductases activity in sunflower lines and hybrids during the broomrape infection. Among them the main are polyphenoloxidase, peroxidase and catalase. They play an important role in developing of sunflower resistance to broomrape, by neutralizing reactive oxygen forms generated during stress.

Considering the lack of information on the enzymes activity in sunflower plants infected with broomrape, the aim of the study was to determine the activity of the oxidoreductases in different sunflower genotypes infected with broomrape and the opportunity of forecasting the sample resistance level to broomrape on these parameters.

The inbred lines and hybrids of Yuriev Plant Production Institute of NAAS were used as a material for the research. The foreign hybrid PR64A71 was used as a resistant standard sample, line Cx 908 A – as a susceptible one. Plants were grown in pots under a greenhouse conditions. To create an artificial infectious background plants were inoculated with broomrape seeds collected on the Kharkiv and Donetsk regions territory of Ukraine. The inoculation was carried out using 1 g broomrape seeds for each 5 kg of soil. The enzyme activity was determined by spectrophotometry.

It was shown that the enzymes activity in the majority of the samples that were inoculated with broomrape increases significantly but the standard susceptible line, which parameters were reduced in during the broomrape infection. The activity of polyphenoloxidase and catalase may be indicative of the potential resistance of sunflower samples to broomrape, though the peroxidase activity is less informative.

Key words: *oxidoreductases, stability, line, hybrid, broomrape.*