

Fungal pathogens cause severe crop losses worldwide. Recently, however, chemical fungicides have become dangerous environmental contaminants affecting non-target organisms. The aim of this study was to investigate the effect of triazole fungicides in the form of penconazole (P), tebuconazole (T) or their combination (PT) on tomato plants *Solanum lycopersicum* L. cv. Cherrola.

No significant change in the activity of a key enzyme of the ascorbate-glutathione cycle, ascorbate peroxidase and activity of cytosolic peroxides, was detected in leaves, roots or fruits at the intervals studied, i.e. after two and five weekly treatments of P, T or PT, either as a foliar or a soil application. While slightly increased guaiacol peroxidase activity was found in roots due to T spraying and PT combination, the activity of this enzyme was reduced in leaves similar to catalase. The greatest changes in leaf antioxidant capacity correlated with increased phenolic and flavonoid content were observed after five treatments of penconazole (P) as a soil application both P alone and in combination as PT. The studied triazoles significantly affected the abundance of isoforms of superoxide dismutase and partially total peroxides in leaves, roots and fruits and of ascorbate peroxidase in leaves. The highest content of HSP70 was found in the roots of plants exposed to fungicides as foliar sprays.