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The Responses of the Antioxidant Defence System of a Legume Green Bean Phaseolus, Vulgaris, cv. Djedida Exposed to a Xenobiotic Hexaconazole

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Abstract

Today, the systematic use of phytosanitary products is questioned, with the awareness of the risks they can generate for the environment and human health. Indeed, the use of high concentrations of these chemical solutions can cause considerable damage to crops and can cause simple marks visible to the naked eye (chlorotic and necrotic lesions) until the premature death of plants through a slowdown in growth and a drop in yield. Otherwise, many organic xenobiotics, among which pesticides cause a disruption of cellular metabolism and oxidative stress that, result in overproduction of ROS (Reactive oxygen species). This scientific contribution aims to verify the effect of a fungicide Hexaconazole on the agronomic parameters, yield components and biochemical indicators of oxidative stress of a legume green bean Phaseolus vulgaris L. CV. Djedida. Four doses of treatment were chosen with control, namely Dose1 (0.4ml / l), Dose2 (0.8ml / l), Dose3 (1.2ml / l) and Dose4 (1.6ml / l). The results obtained show that all the variables studied note higher yields and a stable antioxidant response for the plants treated by the low doses D1 and D2, by against lots treated with high doses the D3et D4 recorded a lower yield and a higher antioxidant stress. The dose effect is decisive and proportional to the applied level. The analysis of these mechanisms of response to oxidative stress or of the fungicide-oxidative stress interactions Can, therefore, lead to a better understanding of the processes of response to xenobiotics.

Keywords

Agronomic;
Biochemical;
Legume-fungicide;
Oxidative Stress;
Yield components.

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