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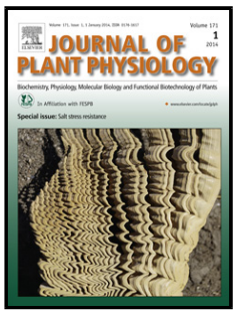


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*Trichoderma harzianum* diminished oxidative stress caused by dichlorophenoxyacetic acid (2,4-D) in wheat, with insights from lipidomics.

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**Abstract**

Dichlorophenoxyacetic acid (2,4-D) is among the most commonly used herbicides applied for weed control during wheat cultivation. However, its application could affect wheat growth. The present study investigates the effect of the ascomycetous fungus *Trichoderma harzianum* on lipid peroxidation, phospholipids, signaling lipids and phospholipase D in the seedlings of wheat (*Triticum aestivum L.*) treated with 2,4-D (2.5 mg $L^{-1}$). In the group of 4-day-old seedlings exposed to the herbicide, increased lipid peroxidation and inhibition of growth were observed in shoots and roots. Moreover, elevated levels of oxylipins were noted. Among them, the amount of 13-HOTrE oxygenated from linolenic acid (18:3) increased the most significantly. Concurrently, in the seedlings inoculated with *T. harzianum*, growth was stimulated when the