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## EFFECTS OF PHARMACEUTICALS AND PERSONAL CARE PRODUCTS (PPCPs) IN WATER ON WHEAT (*Triticum aestivum* L.)

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### Abstract

The present research attempts to fill data gaps in our knowledge of the potential negative impacts of pharmaceuticals and personal care products (PPCPs) in water on plants. Ciprofloxacin, doxylamine succinate, and ibuprofen were used as model PPCPs in trials assessing their impact on wheat (*Triticum aestivum*). Seed germination and growth, electrolyte leakage, and several other plant physiology markers were used as endpoints to assess plant stress over time and at varying PPCPs exposure scenarios/concentrations. Nearly all of the physiological parameters and antioxidant enzyme activities measured were lowest in control (untreated) plants. It was also observed that PPCPs applied at different concentrations to soil increased H<sub>2</sub>O<sub>2</sub>, peroxidase (POX), catalase (CAT), and superoxide dismutase (SOD) in plants depending on the exposure concentration as well as time.

**Key words:** antioxidant enzymes, mineral elements, PPCPs, pollution, wheat

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