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Boron-doped diamond electrode — A prestigious unmodified carbon electrode for simple and fast determination of bentazone in river water samples

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ABSTRACT

Bentazone (BZ) is selective contact-past herbicide with suspected reproductive toxicity potential for human due to possible contamination of ground and surface waters. This work presents simple, rapid, sensitive and accurate determination of bentazone at unmodified boron-doped diamond electrode, using differential pulse voltammetry in Britton-Robinson buffer (pH 4, oxidation peak at 1.0 V). Under optimized DPV conditions linear calibration curve was obtained for range of 2 to 100 μM, with a detection limit of 0.5 μM. The effect of possible interfering agents is negligible, confirming good selectivity of the method. The method was successfully applied to determination of bentazone in spiked river water samples. This electrochemical determination of bentazone represents a favorable alternative to other used time-consuming and expensive analytical techniques and procedures.

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