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ARTICLE



First electrochemical investigation of organophosphorus pesticide azamethiphos and its quantification using electroanalytical approach

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ABSTRACT

In this work, the electrochemical behaviour and the subsequent development of an analytical procedure for quantification of pesticide azamethiphos, using boron-doped diamond (BDD) electrode are reported for the first time. It was found that azamethiphos electrochemical behaviour is irreversible oxidation at the potential of around 1.70 V, in 1 M nitric acid (pH 0). Also, it was found that potential of this oxidation was not pH dependent which can be attributed to the no proton involvement in electrochemical reaction on the electrode surface. The square wave voltammetric method was most appropriate for azamethiphos quantification. Under optimised experimental conditions, linear working range from 2 to 100 μM was estimated with the detection limit of 0.45 μM . Negligible effect of the possible interfering compound was observed. The obtained results show that the developed analytical methodology can be an adequate replacement for the, up to date, used methods for detection of organophosphorous pesticide.

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