

Herbicide Clomazone Detection Using Electroanalytical Approach Using Boron Doped Diamond Electrode

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In this work, for the first time we proposed electrochemical behavior and development of an analytical procedure for quantification of pesticide clomazone. Electrochemical behavior of clomazone's at boron-doped diamond electrode is characterized with irreversible oxidation at potential of around 1.6 V, in Britton-Robinson buffer solution at pH 2. It was found that potential of this oxidation was not pH dependent excluding presence of proton in the electrochemical reaction. Square wave voltammetry method was the most appropriate for clomazone quantification and proposed procedure was successfully applied for determination of clomazone in river water samples. Obtained parameters, detection limit of 0.21 μM and working linear range from 1 to 100 μM and satisfied selectivity can indicate that presented results open new field in research of this group of pesticides and offer possible replacement to the sophisticated and expensive chromatographic methods.

Keywords: clomazone; electrochemistry; boron doped diamond electrode;