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Application of Genetically Engineered Acetylcholinesterases in Screen-Printed Amperometric Biosensor for Detection of Organophosphorus Insecticides

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The inhibition sensitivity of wild and mutant acetylcholinesterases (AChE) towards selected organophosphorus pesticides has been compared with enzymes immobilized in a photocured layer of polyvinylalcohol polymer (PVA-AWP) on a screen-printed graphite electrode. The investigated pesticides included the widely used malaoxon (MO), chlorfenvinphos (CFV), and chlorpyriphos-oxon (CPO). The last two insecticides are in the EC priority list of toxic compounds to be detected in water. The limits of detection (LOD) obtained with each pesticide tested were in accordance with the European regulation.

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