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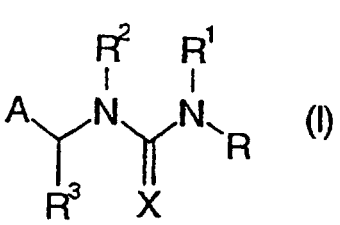
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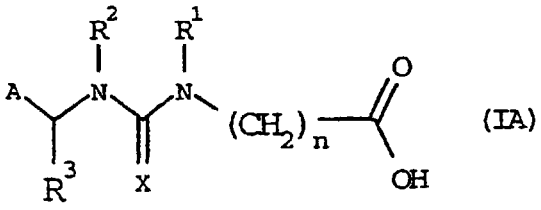
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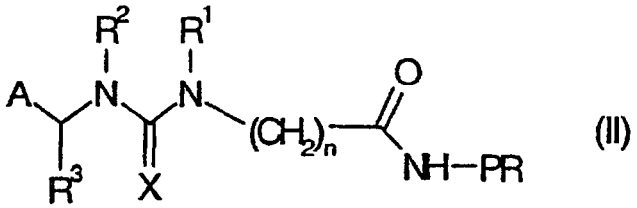
(54) Title: IMMUNOASSAY FOR NEONICOTINYL INSECTICIDES



(I)



(IA)



(II)

(57) Abstract: The present invention provides immunogens for generating anti-neonicotinoid antibodies as well as antibodies, methods, reagents, and kits for determining the presence of one or more neonicotinoid insecticides in a sample by immunoassay. The present invention has particular application to determination of the concentration of neonicotinoid insecticides applied to a plant propagation materials such as seed, said antibody is selective for a compound of formula (I) wherein A is 2-chloropyrid-5-yl or 2-chlorothiazol-5-yl; R and R^3 independently are hydrogen or C_1-C_4alkyl; R^1 and R^2 independently are hydrogen or C_1-C_4alkyl or R^1 and R^2 are taken together with the nitrogen atoms to which they are attached to form an imidazoline or an oxadiazine ring; and X is N-NO_2 or N-CN. Also claimed is a compound of formula (IA) and protein conjugate of formula (II) in which PR is a protein residue of a carrier molecule selected from the group consisting of a purified protein derivative (PPD, Tuberculin) from *Diptheria* virus, bovine serum albumin, cationized bovine serum albumin, human serum albumin, ovalbumin and keyhole limpet hemocyanin; or an enzyme residue selected from the group consisting of alkaline phosphatase, horseradish peroxidase, and β-galactosidase.

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