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1: [Ann Pharm Fr.](#) 2004 Jan;62(1):29-35.

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[Systemic insecticides: new risk for pollinator insects]

[Article in French]

[Charvet R](#), [Katouzian-Safadi M](#), [Colin ME](#), [Marchand PA](#), [Bonmatin JM](#).

Centre de Biophysique Moléculaire, CNRS et Université Orléans, F45071 Orléans Cedex 02.

Imidacloprid, a new systemic insecticide used as seed-dressing, has been widely used in France since 1994. Its application mode and its efficiency allow a significant reduction in comparison with the usual quantity of chemicals used during pulverising treatment. But the insecticide imidacloprid is suspected to have harmful effects on the pollinators as many bees have died since its introduction. Recent studies have shown that imidacloprid has chronic and sub-lethal toxicities at levels of micro g/kg or less. It was therefore necessary to detect imidacloprid at these levels in soils, plants, flowers, and pollens. With this aim, we characterised the bio-availability of imidacloprid in the environment using a new quantitative analytical method, as a basis for the evaluation of the risk for bees.

PMID: 14747770 [PubMed - indexed for MEDLINE]

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Distribution of [(14)C]imidacloprid in sunflowers (*Helianthus annuus* L.) following seed treatment. [Agric Food Chem. 2003]

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