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Health Risk Indicators for Pesticide Use: Banana in the Atlantic Region of Costa Rica, 2006

Bravo V; Partanen, T; Wesseling, C

Epidemiology. 18:p S153-S154, September 2007.

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Objective:

Pesticide use is a severe agricultural public health problem in developing countries. Surveillance of health risks is difficult. During decades, banana has been one of the crops where pesticides have been most intensively used in Costa Rica. The aim of the study was to establish a basis for surveillance of pesticide use in relation to potential health risks, by means of toxicity indicators, using banana cultivation in Costa Rica as an example.

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Materials and Methods:

We interviewed 38 banana growers using a convenience sample, covering 20% of the production area and 25% of the banana farms of the country. Multinational banana producers did not participate in the survey. Pesticides were classified by acute toxicity (EPA and WHO oral, dermal, and

respiratory DL₅₀s), topical toxicity (potential for dermal and eye irritation, allergenic potency), and chronic toxicity (neurotoxicity, carcinogenicity, teratogenicity, reproductive effects, and endocrine disruption). Indicators were quantities used and different types of toxicity for active ingredients, pesticides grouped by biocidal action, and total use.

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Results:

During 2006, 49 kg/Ha/yr of 27 pesticides were applied in banana cultivation (4% insecticides, 5% herbicides, 23% nematocides y 69% fungicides). Fourteen pesticides, equivalent to 16 kg/Ha/yr, are moderately to severely acutely toxic (terbufos, fenamiphos, carbofuran, etc). Twelve pesticides, equivalent to 40 kg/Ha/yr, have a topical toxicity between moderate and severe, especially fungicides (mancozeb and tridemorph). Fifteen pesticides, equivalent to 40 kg/Ha/yr have chronic toxicity, principally fungicides (mancozeb).

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Conclusions:

Quantities of pesticides grouped by toxicity are indicators of potential health risks for workers. Such indicators can be followed over time and contribute to promote sustainable agricultural policies.

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