Dietary Exposure to Pesticides in Tannia in Pregnant Surinamese Women

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BACKGROUND

• Agriculture is important in Suriname. The use of 8.8 kg of pesticides/ha cropland is among the highest in the region. Pesticide policies are lacking or minimally enforced and pesticide monitoring in crops is absent.

• Screening from the Netherlands (2011-2013) on imported Surinamese produce showed that 21% of samples exceeded Maximum Residue Limits (MRLs) of the European Union (EU).

• Pesticide exposure has been associated with neurobehavioral disorders. Pregnant women and children may be vulnerable.

• The Caribbean Consortium for Research in Environmental and Occupational Health (CCREOH) examines the impact of exposures to neurotoxins on maternal and child health in 1000 mother/child dyads.

• A subset of 696 pregnant women were examined for dietary exposure to pesticides.

METHODS

RESULTS

Table 1. Phase II pesticide residues in crops with positive results (μg/kg)

CONCLUSIONS

REFERENCES


DISCUSSION

• Among the few pesticide residues detected in selected produce items were endosulfan and lindane, prohibited in Suriname and listed under the Stockholm Convention to eliminate and/or control their use.

• Since the value of an MRL is based on Good Agricultural Practices, an investigation of agricultural practices is needed.

• Most women (39.2%) reported Tannia as the top consumed leafy vegetable, which confirmed selecting Tannia in Phases I & II.

• Dietary exposure to endosulfan in tannia does not seem to pose a risk for adverse health effects. Since the current RfDs for endosulfan and lindane are based on non-neurotoxic endpoints, the risk assessment findings must be interpreted cautiously.

The pilot environmental study showed the presence of widely banned POPs in Surinamese produce. The findings emphasize the need to address environmental policy gaps. However, a more comprehensive sampling and analysis of produce from Suriname as well as a cumulative health risk assessment is warranted.