

Pesticide Research and Monitoring

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Health Canada Santé
Canada Canada

Purpose

- ▶ Overview on health-specific research and monitoring initiatives on pesticides

Canadian Health Measures Survey

- ▶ First ever national bio-monitoring survey 2007-2009
- ▶ Health Canada in partnership with Statistics Canada
- ▶ Statistically valid nationally-representative bio-monitoring data on exposures to specific environmental chemicals (e.g., lead, mercury, phthalates, selected pesticides).
- ▶ Blood and urine specimens from 5000 Canadians (6-79 years).

NHANES - National Health and Nutrition Examination Survey

- ▶ Designed to collect data on health and nutritional status of US population
- ▶ Continuous annual surveys since 1999.
- ▶ Statistically valid biomonitoring data on exposures to specific environmental chemicals (eg., carbamates, organophosphates, pyrethroids and herbicides)
- ▶ Results considered in conjunction with ongoing reevaluation of pesticides

Canadian National Children's Study

- ▶ Proposed longitudinal cohort study
- ▶ In partnership with U.S. National Children's Study
- ▶ Health Canada Working Group
- ▶ External advisory group

U.S. Agricultural Health Study

- ▶ Tracking health of pesticide applicators (including farmers) and spouses (~ 90,000 individuals)
- ▶ Ongoing since mid-1990s
- ▶ Participants interviewed every 4-5 years re: health status & pesticide exposures
- ▶ Results examined as they are released
- ▶ Considered in conjunction with the ongoing re-evaluation of pesticides

U.S. Agricultural Health Study

- ▶ Overall cancer rate same or lower than the population in general.
- ▶ Preliminary indication that certain nervous system effects in applicators, (tiredness/less alert), may be linked to certain classes of pesticides.

Ontario Farm Family Study

- ▶ Health Canada study
- ▶ 2000 Ontario farm families - particular focus on reproductive health.
- ▶ No clear cause-effect relationships between pesticide exposure and reproductive health.
- ▶ Additional analysis still underway - results are considered in conjunction with the ongoing re-evaluation of pesticides.

Exposure Data Development: Pesticide Handlers & Residential

Purpose:

- ▶ Develop and update exposure information for use in regulatory risk assessments for pesticides

Members:

- ▶ PMRA, EPA, California DPR, pesticide manufacturers

Exposure Data Development: Pesticide Handlers & Residential

Process:

- ▶ Design and prioritize exposure studies
- ▶ Evaluate and validate data generated
- ▶ Data used to estimate and characterize exposures and risk to those who handle or come in contact with pesticides
 - ◆ workers, homeowners
 - ◆ children contacting treated turf
 - ◆ workers harvesting treated crops

Exposure Data Development: Pesticide Handlers & Residential

- ▶ Agricultural Re-entry Task Force
(worker post-application)
- ▶ Agricultural Handlers Exposure Task Force
(mixer/loader/applicator)
- ▶ Outdoor Residential Exposure Task Force (during & after residential applications, especially turf)
- ▶ Antimicrobial Exposure Assessment Task Force
(antimicrobial pesticides)
- ▶ Residential Joint Venture
(survey data on use patterns for residential pesticides)

Regulatory Application

- ▶ Improved, updated exposure estimates
 - ◆ Increased accuracy
- ▶ Refined risk assessments
 - ◆ Water monitoring data vs. water modelling
 - ◆ Food residue data (CFIA, PDP)
- ▶ Validation of current regulatory approach
 - ◆ Bio-monitoring results