on give food item. The CARES probabilistic model generates a temporal exposure pattern assigning co-occurring residues to consumption data. The doses of two age groups (adults and 2 year olds) will be investigated over a single day and multiple days. The results of this pilot project should provide an indication of whether cumulative exposure is primarily driven by a one or two pesticides or the result of the smaller contributions from multiple pesticides. This work will also explore the potential impact of contributions from non-detected values and of grouping exposures based on mechanism of action.

Keywords: A-cumulative exposure, B-pesticides, C-food

Tu-S-A3-04
Community Exposures to Pesticide Drift
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Abstract: The off-target movement of pesticides during and after agricultural pest control treatments is an ongoing public health concern. Worker illnesses associated with pesticide drift continue to be reported, and risks for vulnerable populations such as the elderly, small children and women during pregnancy are not well characterized. This presentation examines the study designs, methods and models used in evaluating pesticide drift in agricultural communities. Air monitoring programs require careful consideration of spatial and temporal aspects of spraying and need to be linked to local meteorological data. Biological monitoring of populations can be useful if sufficient information is available regarding exposure sources. Global positioning system technology can determine time-location patterns for community residents. Two community air monitoring studies were conducted in Washington State agricultural regions to coincide with the use of the organophosphorus insecticides chlorpyrifos and azinphos methyl. Preliminary findings indicated that air concentrations were below regulatory guidelines throughout the sampling periods. However, follow up studies found that the more toxic oxygen analogs of these compounds were present in community air, raising questions as to whether current guidelines are adequate. Results from pesticide drift studies from both airblast orchard spraying and fixed-wing aircraft applications are used to evaluate the accuracy and precision of current exposure assessments.

Keywords: B-pesticides, A-exposure models, C-air, D-community, D-children
Tu-S-A3-05
Applying Comparative Risk Methods to the Changing Occupational Risks of Pesticide Handlers
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Abstract: Product substitution is a common approach to reducing occupational hazards. A chemical substitution in the agricultural workplace normally involves change from a higher to a lower toxicity compound, but it also may lead to changes in the volume of chemical used, application techniques, and the level of personal protection required of workers. This study employs comparative risk methods to evaluate the recent replacement of azinphos methyl as a pest control agent for codling moth in the tree fruit industry. Comparative risk analysis provides a means of integrating changes in exposure, toxicity and other factors to identify risk tradeoffs that result from such chemical substitution. This presentation examines the comparative risks for agricultural pesticide handlers during an azinphos methyl application scenario and scenarios for acetamiprid, chlorantraniliprole, spinetoram, and thiacloprid. Probabilistic exposure assessments for these scenarios were performed using a combination of personal samples collected from pesticide handlers and generic exposure measurements from the Agricultural Handlers Exposure Database (AHED). The potential risks associated with these application scenarios are presented, together with an analysis of strengths and weaknesses of comparative probabilistic health risk assessment methods.

Keywords: B-pesticides, A-risk assessment, D-occupational

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