Su-P-06
Notification of Pesticide Applications to Minimize Workplace Exposures: A Feasibility Study
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Abstract: Minimization of workplace exposure to off-target movement of agricultural pesticides during applications is a high priority issue for the Washington State Department of Health. The focus of this project was to evaluate the feasibility of a notification system activated by an orchard applying pesticides that would allow work crew supervisors in adjacent orchards to ensure that workers were not located in areas where off-target movement of pesticides might occur. In theory, users would indicate their intention to spray specific farmland and neighboring property owners would be automatically notified through simple, cost-effective smart phone or similar technology. The specific goals of this project were to: (1) interview tree fruit industry personnel responsible for pesticide applications regarding the desirability of a notification system and barriers to the implementation of such a system, (2) examine existing pesticide spray notification systems to determine their strengths and limitations, as well as their relevance to the Washington tree fruit industry, and (3) evaluate the ability of the Washington State University (WSU) Decision Aid System (DAS) to incorporate neighbor-to-neighbor spray notification. Results from 20 interviews, the framework of existing notification systems, and applicability to DAS are reported. Next steps include engaging a variety of stakeholders such as pesticide applicators, farm owners and managers, farmworker groups, research and education communities, and state agencies to determine how to best develop an agricultural spray notification system in the State of Washington.

Keywords: B-pesticides, D-occupational, Prevention

Su-P-07
The Impacts of Exposure Uncertainty on the Reported Association Between Perfluorooctanoate and Preeclampsia
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Abstract: A recent review concluded that there is a weak to moderate association between perfluorooctanoate (PFOA) exposure and the occurrence of pregnancy-induced hypertension and preeclampsia, with an increased strength of association for studies with higher confidence/accuracy exposure estimates (C8 Science Panel, 2011). This review was heavily influenced by data from cross-sectional studies of over 69,000 people who were environmentally exposed to PFOA near a major U.S. fluoropolymer production facility located in West Virginia. These studies relied on a retrospective PFOA exposure assessment, including a PFOA release assessment, integrated fate and transport modeling, and dose reconstruction to predict the annual exposure dose to each individual in the C8 Health Project from 1951 to 2008; exposure predictions were validated using 2005-2006 serum PFOA measurements (Shin et al., 2011a, b). The fate and transport model used to predict the PFOA water concentration in each of six public water districts (PWD) utilizes a number of uncertain physiochemical and hydrogeological parameters. The aim of the present study is to assess the impact of the uncertain PFOA water concentration predictions on the exposure estimates and subsequently, the epidemiological association between PFOA exposure and preeclampsia (Savitz et al., 2012). Using Monte Carlo simulation, we changed the individual PWD-PFOA water concentration for every year by randomly sampling from lognormal (uncertainty) distributions for the total PFOA release rate, the PWD-specific water concentrations, and auto-correlated annual water concentrations within each PWD using the original predicted concentrations as medians and a range of 2, 5 and 10-fold uncertainty. We find that exposure uncertainty (i.e., coefficient of variation of the log odds ranging from 11.3% to 39.2%) may contribute almost as much as the original sampling variability (47.8%) to overall uncertainty in the association between PFOA and preeclampsia.

Keywords: A-exposure models, Uncertainty Analysis, Monte Carlo simulation, Perfluorooctanoate(PFOA), Preeclampsia, Uncertainty Analysis, Monte Carlo simulation, Perfluorooctanoate(PFOA), Preeclampsia, Uncertainty Analysis, Monte Carlo simulation, Perfluorooctanoate(PFOA), Preeclampsia, Uncertainty Analysis, Monte Carlo simulation, Perfluorooctanoate(PFOA), Preeclampsia

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