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The PESTIRISK tool for personal planning of pesticide safe use by field users: concept and development

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Introduction: The professional use of pesticides in agriculture entails exposure for the operator, with possible short- and long-term effects if suitable protection is not adequately employed. Risk Assessment is a compulsory activity of the farmer, however, necessary expert opinion and field measurements can be unavailable or unacceptably expensive. There is a strong need to give farmers a calculation tool to perform their own RA and to plan the safe use of pesticides at their premises.
Material and Methods: The PESTIRISK tool is a model for relating personal exposure to its determinants and for evaluating exposure-related occupational risk. Algorithms are established to calculate the effect of determinants on exposure, based on pesticide use according to the EU-Good Agricultural Practices as applied in real-life scenarios of the Italian agricultural countryside. The determinants of exposure and their influence on exposure levels derive from the results of published studies. Systematic literature search with automated data-mining and expert opinion extracts meaningful quantitative and semi-quantitative information.
Results and Conclusion: The initial data mining in Pubmed and Scopus and retrieved 332 articles, of which 42 were used for data extraction. The starting algorithms use a multi-step contamination-transport model with linear and non-linear coefficients and factors that depend on the different agricultural equipment and protective devices available, while, in the first instance, the chemical properties of the active ingredient will only influence mass-transport coefficients across barriers and safe exposure levels.

Sp16-3

So did I pass the assessment? Following farm safety checklists to understand pesticide risk reduction using an actor-network theory approach

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Introduction: Farmers are responsible for workplace safety which includes family, employees, contactors, visitors and themselves. Tragically farming injuries, illness and fatalities continue to occur in Australia. Despite a plethora of accessible farm safety self-assessment checklists that are designed to support farmers to achieve a safe workplace the rate of on farm fatalities has remained consistently unchanged over the last decade. Little is known about how farm safety checklists are used by farmers and remains allusive to those who create and make them available.
Materials and Methods: Using an actor-network theory informed ethnography, a farm safety self-assessment checklist is traced to a cropping farm where a range of herbicides are used including diquat dibromide and paraquat, and insecticides including chlorpyrifos and fipronil. The purpose is to understand the checklists' role in influencing farm safety culture, specifically around the use of these pesticides and pesticide application, storage and PPE.
Results: Considering the origin of the checklist and how it crosses a university, workplace regulators, farm machinery, and legislation, this method shows where power and authority is held amongst these unrelated groups. Checklists are designed as farm safety culture mediators but this depends on the farmer who holds power until a fatality or severe injury occurs shifting this power to law and legislation.
Conclusions: So did I pass? Maybe, but there's no grade. The checklist mediates safer pesticide practices when it is used by farmers to exert control over the health and safety of every person on the farm.

Sp16-4

Pesticide Risk Perception and Safety Behavior among Adolescent Pesticide Applicators in Egypt

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Introduction: Adolescents working in agriculture frequently apply pesticides and have high exposure to pesticides. Low-cost interventions are needed to reduce exposure. A theoretically-based intervention was developed to increase perceptions of risk and promote behaviors to reduce pesticide exposure. It was evaluated among adolescent and young adult pesticide applicators in Egypt.
Methods: A one-hour educational intervention was administered to adolescent and young adult male pesticide applicators. Questionnaires were used to assess changes in perceived susceptibility and effectiveness prior to and immediately following the intervention and again 8-months postintervention. Field observations, before and after the intervention, were used to assess safety behaviors.
Results: Perception of risk associated with pesticide application increased from pre- to post-intervention (74.7% pre-intervention to 97.9% post-intervention, McNemar test $p < 0.001$) and remained at the 8-month follow-up (90.5%, $p < 0.001$). A similar increase in recognition of hygiene practices to reduce exposure was also found. Field observations found an increase in the use of personal protective equipment (goggles, masks, and shoes) following the intervention.
Conclusion: This theoretically-based intervention led to greater perception of risk and increases in safety behaviors while applying pesticides. This low-cost intervention can be applied in other countries with similar safety culture surrounding pesticide application.

Special Session 17 Is dermatitis the most frequent occupational disease? Epidemiology and prevention

Chair: Swen Malte John

Session introduction

OSD represent up to 35% of notified occupational illnesses. Prolonged absence from work due to OSD jeopardizes competitiveness especially of small and medium sized enterprises, where OSD-incidence peaks. For affected individuals, the chronic course of OD may result in job loss, precarious or unemployment. A joint