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HEALTH SYMPTOMS AND DERMAL EXPOSURE IN CASSAVA FARMERS

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10.1136/oemed-2018-ICOHabstracts.1316

In Thailand, information on the extent of pesticide exposure and the health effects of such pesticide exposure among farmers is lacking. In contrast, the agricultural chemical has increased in the worldwide. Data from a pilot study amongst 16 farming families (Hanchenlaksh, *et al.*, 2011) indicated that dermal exposure to pesticides, as assessed using a previously validated structured, semi-quantitative observational method (DREAM) was collected. Showering or washing immediately after spraying greatly reduced potential exposure of family members.

The study was conducted in Suranaree sub-district, Muang district in Nakhonratchasima province, Thailand. 50 Cassava farmers, randomly selected from the agricultural communities, participated. Information on farmers was collected by an interviewer-led questionnaire and a self-completed diary for any health symptoms in the spraying week and a non-spraying reference period from the farmers. Dermal exposure of the farmers during one spraying session was assessed by the DREAM methodology.

Potential dermal exposure estimates indicated considerable dermal exposure for farmers that was, on average. Only 18% of farmers used any form of personal protective equipment (PPE) and such as actual dermal exposure equated potential exposure for the majority of farmers. Almost 90% of farmers showered immediately after using pesticides. During spraying season 92% reported muscle/joint, 68% breathing/heart, 64% reported gastro-intestinal, 62% visual, 42% skin problems and 38% eye problems; compared with the non-spraying season when adverse effects were only reported by 25%, 17%, 15%, 10%, 8%, 5%, respectively.

These data show that farmers experienced significant potential exposure to pesticides by the dermal route while spraying pesticides, and that only a small minority wore PPE. The prevalence of adverse health symptoms self-reported by farmers was much higher during the spraying season compared to non-spraying reference periods.

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CENTRAL NERVOUS SYSTEM TUMOURS AND AGRICULTURAL EXPOSURES IN THE PROSPECTIVE COHORT AGRICAN

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10.1136/oemed-2018-ICOHabstracts.1317

Studies in farmers suggest a possible role of pesticides in the occurrence of Central Nervous System (CNS) tumours but scientific evidence is still insufficient. Using data from the French prospective agricultural cohort AGRICAN (Agriculture and Cancer), we investigated the associations between exposure of farmers and pesticide users to various kinds of crops and animal farming and the incidence of CNS tumours, overall and by subtypes. Over the 2005–2007, 1 81 842 participants completed the enrollment questionnaire that collected a complete job calendar with lifetime history of farming types. Associations were estimated using proportional hazards models with age as underlying timescale. During a 5.2 years average follow-up, 273 incident cases of CNS tumours occurred, including 126 gliomas and 87 meningiomas. Analyses showed several increased risks of CNS tumours in farmers, especially in pesticide users (hazard ratio=1.96; 95% confidence interval: 1.11–3.47). Associations varied with tumour subtypes and kinds of crop and animal farming. The main increases in risk were observed for meningiomas in pig farmers and in farmers growing sunflowers, beets and potatoes and for gliomas in farmers growing grasslands. In most cases, more pronounced risk excesses were observed among pesticide applicators. Even if we cannot completely rule out the contribution of other factors, pesticide exposures could be of primary concern to explain these findings.

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OSH IN AGRICULTURE – WHAT IS THE SECOND EUROPEAN SURVEY OF ENTERPRISES ON NEW AND EMERGING RISKS (ESENER-2) TELLING US?

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10.1136/oemed-2018-ICOHabstracts.1318

Introduction Agriculture plays an important part in Europe's economy. The EU-28's farm labour force in 2013 reached 22.2 million—not all full-time-, most of them in Poland and Romania ('Agriculture, forestry and fishery statistics', Eurostat, 2016). A majority of farms are small businesses, very frequently family run. The sector is highly diverse and so are its OSH challenges, most often leading to higher than average accidents and health problems, both physical and mental. ESENER-2 provides a comparative picture of OSH management in agriculture across Europe.

Methods ESENER-2 is a survey of 49 320 establishments across 36 European countries, covering all size classes and sectors, completed in autumn 2014. It asks 'the person who knows best in the establishment how OSH is managed' about:

1. OSH in general,
2. psychosocial risks,
3. drivers and barriers to OSH management, and
4. worker participation.

Data were analysed using SPSS.

Results Most frequently reported risks are 'risk of accidents with machines or hand tools' (78%) and 'risks of accidents with vehicles in the course of work' (73%), clearly above the average. Agriculture tops the ranking for two of the risk factors considered in ESENER-2: 'heat, cold or draught' (65%) and 'repetitive hand or arm movements' (63%), and is clearly above the average for 'chemical or biological substances' (62%) and 'long or irregular working hours' (35%).