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Health status and pesticide exposure level of terrestrial pesticide applicators in Córdoba, Argentina

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HEALTH STATUS AND PESTICIDE EXPOSURE LEVEL OF TERRESTRIAL PESTICIDE APPLICATORS IN CÓRDOBA, ARGENTINA

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Pesticide exposure in rural areas affects a sector of the population that is highly exposed and very vulnerable. Thus, agricultural workers represent a highly vulnerable population to the toxic effects of pesticide exposure. The rural area of Cordoba dedicated to extensive crops (soybean, corn, sorghum, peanuts, wheat and sunflower) experienced a rapid expansion in the last 20 years, with 7.3 million hectares in 2011/2012. The technological farming model used in the region requires increasing amounts of chemicals, to control pests, leading to a particular setting of sanitary risk to farm workers and rural communities. The study of health impacts of pesticides and the accurate estimation of pesticide exposure is of major concern in public health. This cross sectional study aimed to describe the health conditions of terrestrial pesticide applicators in Córdoba Province, Argentina, in relation to their pesticide exposure level. Methods: A standardized self administered questionnaire was used to collect basic determinants of exposure, health status and other variables of interest (n=2115). Two indexes were created to describe applicator exposure, the Level of pesticide exposure (LPE) and the Cumulative exposure index (CEI). The LPE algorithm includes labor activities with pesticides as well as application methods, weighted by the type of personal protective equipment used; the CEI incorporates the previous LPE information and takes into account average time of exposure. Subjects were classified in three categories: low, medium and high exposure. Associations were found between adverse health outcomes and the highest exposure level for each index. Medical consultation in the last year for reasons related to occupational pesticide use, nervousness or depression and lung diseases were associated with the high category of the LPE ($p<0.05$). Fatigue tiredness, skin irritation, eye irritation and headache were associated with the high category of the CEI ($p<0.05$).

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