

PREVALENCE OF FAMILY CANCER HISTORY IN FARM WORKERS EXPOSED TO PESTICIDES FROM SOUTHERN BRAZIL

Lucas Volnei Augsten*; Shanda Cattani; Simony Costa Beber; Ingrid Flesch; Letícia Campos; Gabriel Pedroso Viçozzi; Fernanda Mocellin Conte; Marcelo Dutra Arbo; Solange Cristina Garcia

Introduction: Agricultural workers are often at the forefront of pesticide application and management, placing them at risk of exposure to a variety of chemical agents known to have carcinogenic properties. **Objectives:** To evaluate the history of cancer in the families of farm workers and their relation to pesticides exposure. **Materials and Methods:** A questionnaire was applied directly to the rural workers via the digital application QEAQs, developed by our group in collaboration with ORNI, on tablets, concerning family cancer history and economic activities, type of pesticide application, existence of aerial pulverization, and distance between their home and the local of pesticide application, in the towns of Ijuí, Canguçu, Bagé, Cerro Largo and Ibiraiaras - RS. **Results and Conclusion:** Ibiraiaras had a higher prevalence of cancer history (78,1% of 96 participants), and while Bagé had 78,8% of family cancer, the sample size was small (33 participants) to be significant, while other cities had between 54 and 62,1% ($p < 0.01$). Ibiraiaras had a higher proportion of aerial application of pesticides on the farmer's property (25%, $p < 0,01$). Bagé had a higher percentage of pesticide application via immersion bath and backpack sprayer (24,2% and 39,4%, $p < 0,01$), Ibiraiaras, Bagé and Cerro Largo had a higher proportion of non-applicants of pesticide (32,3%, 36,4% and 41,2%, respectively), Ijuí had more application via closed cabin tractor (60,9%) and Canguçu via open cabin tractor (42%). Distance between crops and home had didn't show relation to family cancer history ($p = 0,51$), neither did the practice of other economic activities in the family ($p = 0,34$). Analyzing the towns' purchases of pesticides in the years of 2023 and 2024, Ibiraiaras purchased more mancozeb per capita (10,79 ton/inhabitant), a known carcinogen, with the second biggest buyer being Ijuí with 0,81 ton/inhabitant. Bagé had the most total pesticide per inhabitant (88,39 tons/inh) followed

by Ibiraiaras (56,46 tons/inh). The group with family cancer history had a higher median of total pesticide per inhabitant purchased by their city (12,08 tons/inh) than the group without cancer history (7,88 tons/inh, Mann-Whitney test, $p < 0,01$). Thus, the cities with more exposure to pesticides had a higher proportion of cancer in their family history.

Keywords: Pesticides, cancer, exposure, rural workers.