

Papas, Pests, People, and Power: Addressing Pesticide Concerns through Organization, Training, and Policy Interventions in Carchi, Ecuador

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The Province of Carchi in Northern Ecuador has become Ecuador's most important producer of staple foods, contributing nearly 40 percent of the national potato crop on only 25 percent of the area. Nevertheless, continual cropping has contributed to severe pest problems; in particular the Andean Weevil (*Premnotrypes vorax*), that can decrease yields by as much as 80 percent, and late blight (caused by *Phytophthora infestans*), that can entirely decimate production.

Previous studies found that farmers in Carchi sprayed each potato crop an average of seven times, typically mixing three products of fungicides and insecticides in each application. Eighty percent of these products were World Health Organization Hazard Category I agrochemicals. Overuse and careless management of pesticides has contributed to severe human health effects, including poisonings (171/100,000), dermatitis (48% of applicators), pigmentation disorders (25% of applicators), and numerous neuro-psychological effects (peripheral nerve damage, abnormal deep tendon reflexes and coordination). Mortality due to pesticides was among the highest reported (21/100,000).

We do not fully understand the true cost of pesticide use in terms of health, environmental, and productivity consequences. While ground water effects are

apparently negligible, each poisoning (not to ignore deaths) costs about five worker days, and studies suggest that the use of some products adversely affect farmer decision-making capacity. The cost to quality of life is harder to measure. One thing is clear: there is a need for more responsible agriculture.

Recently, the International Potato Center and the National Autonomous Institute for Agricultural Research (INIAP), in conjunction with the McMaster Institute of Environment & Health (MIEH) and the Programme for Appropriate Technology in Health (PATH) in Canada, have begun collaboration to improve the health and welfare of rural people through enhancing the sustainability of the potato-dairy farming systems. The project, entitled Eco-Salud, aspires to improvement in communities by means of participatory learning and activities with households (children, men, and women). This is accomplished through raising awareness, organization, and capacity-building, while constantly monitoring pesticide use and effects. Eco-Salud is making special effort to engage governmental officials at the provincial level in order to influence public policies. This has posed unique challenges and opportunities for advancing the objectives of pest management and sustainability.

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