Education trumps regulation

August 5 2011, By Aaron Yeo

A University of Alberta study shows that simply educating farmers about the hazards of pesticides can reduce their chance of usage by nine per cent.

Environmentalists are always looking for ways to reduce pesticide use, traditionally through government regulations, but also through education programs, which Sandeep Mohapatra, a rural economy professor in the Department of Resource Economics and Environment, says works just as well.

“Governments and non-profit organizations are very interested in these programs,” Mohapatra said. “But no one [knew] if these education programs work.”

Working with researchers in California, Mohapatra closely studied the effects of an education program on the habits of almond farmers in the state over a 10-year period. The goal of the program was to provide an internal incentive to some of the farmers to make their own decisions about pesticide use, instead of forcing them through regulation like those made by the Environmental Protection Agency.

“Whatever decisions you make is the result of an optimization process,” he said. “If you’re doing something as a farmer, or a student, or an individual, and I regulate that, and say ‘it’s bad, because the total net cost to society is bad,’ it can force you to make sub-optimal decisions.”

By learning more about the harm and pollution that certain pesticides

cause, farmers can internalize that knowledge and integrate it into their decision making, he says.

“With more information, you re-optimize on your own, and you may realize that the best thing, in this specific instance, is not to use the pesticide,” Mohapatra said. “But the impacts of [the programs] cannot be quantified very easily and estimation of the impacts is fraught with statistical challenges.”

He used the California government’s database of almost 30,000 observations of pesticide use by almond farmers. Some of the farmers had gone through the Biologically Integrated Orchard Systems, an outreach program that was initiated by the University of California and a nonprofit organization, the Community Alliance of Family Farmers, aimed at providing technical assistance and education. Those who had gone through the BIOS program showed conscious decisions to reduce pesticide use, but Mohapatra also stressed the value of the social learning component of the education programs, or how the information can spread even after the program is over.

“The idea was that once you leave the program, you go and talk to other farmers,” he added, and said that there was a continued decrease in pesticide use post-program.

Mohapatra explained that the design of the program was very influential in the results they observed, and that other existing programs might not be as effective if they don’t tap into the decision-making process.

“It’s a big challenge on how you intervene and tell them ‘this behavior is better,’ or ‘that behavior is better,’” he said. “You must keep their incentives in mind, so that it’s ultimately for their benefit, because they are not likely to change their behaviour if it’s not.”