SOYBEAN PESTICIDE RISK REDUCTION SURVEY

Final Research Report E2008-39

INTRODUCTION

In 2006 and 2007, farmers in Ontario who included soybean in their crop rotation were surveyed to determine the extent of use and willingness to adopt pesticide risk reduction practices. The survey was part of a broader study to evaluate different weed management strategies in soybean. The objective of this survey was to evaluate the likelihood of a grower to adopt reduced risk weed management practices in soybean production.

THE RESPONDENTS

The current farming method of the 31 respondents and their age group is presented in Table 1. Most respondents identified their crop rotation as soybean-cereal-corn. The majority of farmers identified their current farming method as no-till or minimum till management. Only one person indicated the use of Integrated Pest Management (IPM) practices.

Table 1. Current farming method and age group of survey respondents

Current farming method			
No-till or min till	Conventional	IPM	Total
27	3	1	31
Age group			
41-50	51-60	60+	Unknown
9	11	10	1

SURVEY RESULTS

Pesticide Reduction Practices

Respondents were asked to rank their current use of, or willingness to use, selected weed management practices. These practices included the use of various herbicide application techniques, tillage, mechanical weeding and herbicide resistant cultivars.

The reported use of management practices associated with a reduction of pesticides is presented in Table 2. The responses suggested that the majority of farmers are not interested in adopting strip spraying or the elimination of pesticides from their management program. However, most of them expressed that they were using or may use reduced rates of herbicides. This can be a concern because reduced application rates may encourage resistance in a few weeds while giving the impression of good weed control. Reducing the number of applications may be more beneficial from a risk perspective.

Most farmers also use or have used practices such as increased seeding rate, pre-plant tillage, direct or zero-till planting and plough-down crops. In general, post-emergent tillage was a practice that was either utilized or the farmers were not interested in adopting (i.e. they were strictly no-till and wouldn't consider changing).

Table 2. Reported use of management practices associated with a reduction in pesticide use

Practice	Use or Have used	Might use	Not interested or cannot use
Strip spraying	2	5	20
No herbicide	1	5	19
Reduced rate herbicide	15	8	5
Reduced number applications herbicide	22	7	0
Use precision application equipment	15	11	2
Increased seeding rate	20	6	5
Pre-plant tillage	18	5	7
Tillage between rows	12	2	15
Rotary hoe/tine harrow	14	4	9
Direct/zero-till planting	31	1	0
Plough-down crops	20	7	2

Weed management practices presented in Table 3 are not associated with reduction in pesticide use. For example, a fall applied herbicide allows the grower to start planting earlier in the spring. However, a fall application may not provide the residual control necessary to keep weed pressure down early in the season. As a result, the grower will have to go back and burn that field down again in the spring. A practice that seemed to reduce herbicide use and save time turned out to be more costly for the grower and the environment.

The majority of respondents indicated that they are using or have used weed management practices that are not associated with reduction in pesticide use (Table 3). It is important to differentiate which practices will help reduce risk of pesticides in the long run.

Table 3. Reported use of management practices not associated with a reduction in pesticide use

Practice	Use or have used	Might use	Not interested or cannot use
Spring/fall burnoff with broad herbicide	29	1	0
Soybean with GM resistance to herbicides	22	6	2
Pre-emergent herbicide	30	1	0
Herbicides with different modes of action	30	2	0

CREDITS

Andy Hammermeister and Joanna MacKenzie (Organic Agriculture Centre of Canada), and Darren Robinson (University of Guelph - Ridgetown Campus).

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Constraints to the Adoption of Pesticide Risk Reduction Practices

Weed control appeared to be the major constraint to farmers adopting pesticide risk reduction practices. Lower yield was also identified as a constraint for some producers. Respondents in the 60+ age group were concerned about their need for different equipment in the implementation of new practices. This suggests that education of farmers in alternative methods of weed control may play an important role to encourage reduced risk practices. The majority of respondents ranked cost-benefit analysis, more workshops and field demonstrations, more time to research, better crop prices, subsidy programs, and different equipment as very to somewhat helpful in aiding in the reduction of pesticide risks on the farm. Better crop prices were seen as the biggest incentive to adopting new practices.

Transition to Organic Management

Respondents were asked if organic management would be considered as an alternative strategy on their farms. In total, 29% of respondents suggested that they are considering or might consider organic production.

THE BOTTOM LINE...

The results of the soybean pesticide risk program survey revealed that a majority of producers are interested in adopting techniques to reduce risk related to the application of pesticides on their farm. Some producers are already using such practices. The problem of weed control, yield reduction and need for equipment have been identified as constraints in the adoption of reduced pesticide risk practices. Workshops and field demonstrations are good ways to educate producers about reduced risk practices.

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For more information:
Visit **oacc.info** or contact us at
P.O. Box 550 Truro, NS B2N 5E3
Tel: (902) 893-7256
Fax: (902) 896-7095
Email: oacc@nsac.ca

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