

10-1-2004

Are All These Rules Necessary? Extension Pesticide Programming with a Regulatory Purpose

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Recommended Citation

Bricker, J. T., Martin, A. G., Janssen, C. L., & Whitford, F. (2004). Are All These Rules Necessary? Extension Pesticide Programming with a Regulatory Purpose. *The Journal of Extension*, 42(5), Article 12. <https://tigerprints.clemson.edu/joe/vol42/iss5/12>

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Abstract

Indiana's private applicator recertification program includes state-required, pesticide regulatory topics. This article explores the relationship between Indiana private applicators' dual attitudes towards pesticide handling practices and the pesticide regulations that mandate those practices. Newly recertified private applicators in northwest Indiana were surveyed by a mailed questionnaire. Respondents valued responsible pesticide management practices, but were collectively undecided about regulatory oversight of their pesticide handling activities. These results suggest that Extension pesticide safety educators involved in compliance education may improve their training curriculum by including material on the underlying benefits, personal and social, of pesticide regulation.

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Introduction

The United States Environmental Protection Agency (and sometimes state pesticide regulatory agencies) will apply a restricted-use classification to certain pesticide products that, even when used according to label directions, may cause adverse effects on people or the environment. Pesticides can be restricted for human health reasons (e.g., carcinogenicity) or environmental concerns (e.g., fish or bird mortality, water quality concerns, etc.). All federally restricted-use products have a restricted use product statement at the top of the first page of the label. These products are available only to certified and licensed pesticide applicators.

Indiana's pesticide control law is similar to other states. It identifies private applicators--primarily

farmers--as persons who apply restricted-use pesticides to property that they own, rent, or otherwise control by some form of contractual arrangement for purposes of producing an agricultural commodity. Under Indiana law, any private applicator who buys, uses, or supervises the use of restricted-use pesticides must be certified to do so and must have a private applicator permit issued by Indiana's pesticide regulatory agency (Office of the Indiana State Chemist). There were 15,493 private pesticide applicators in Indiana who held permits to purchase and use restricted-use pesticides in 2003.

Indiana private applicators certify by passing a closed-book examination. Certified private applicators are issued a permit valid for 5 years. The private applicator permit carries an identification number that is unique to the permit holder and nontransferable. Persons selling restricted-use pesticides are legally obligated to record the permit number, at point of sale, when a private applicator purchases a restricted-use product.

Prior to 2000, Indiana private applicators could only recertify by retesting. At the end of every 5-year certification period, county Extension educators would conduct half-day training programs and administer the certification exam at the conclusion of each program. Campus-based Extension pesticide specialists determined training content, wrote the training manuals, and provided support materials to the field staff, while Office of the Indiana State Chemist personnel developed the certification test.

In 2000, a procedural change by Office of the Indiana State Chemist permitted private applicator recertification either by retesting at the end of the 5-year certification period or by documented attendance at three approved continuing education programs within the 5-year certification term. Thus, Indiana private applicators who attend the requisite number of continuing education programs no longer have to retest.

Continuing education programs approved for private applicator certification must:

- Be sponsored by a county Extension educator,
- Include pesticide-related topics that total at least 2 hours, and
- Include a pesticide regulatory topic (e.g., restricted-use pesticide recordkeeping, Indiana's supervision requirements, and Indiana's drift enforcement policy) determined annually by Office of the Indiana State Chemist.

The new private applicator certification program is a collaborative effort among Office of the Indiana State Chemist, Purdue Pesticide Programs, and Purdue University Cooperative Extension Service educators. The program is flexible, allowing county Extension educators to offer pesticide programs of local interest and/or that address emerging pesticide issues. And continuing education programs serve as a vehicle for the communication of pesticide regulations to growers.

Research Objectives

Extension specialists have investigated the importance of the pesticide label to the private applicator (Prochaska & Norlund, 1998), where private applicators access pesticide safety information (Shern, Slocum, & Olsen, 1990), how to successfully convey pesticide safety information to private applicators (Coffman & Watkins, 1991; Hogan & Simeral, 2001), and how to encourage private applicators to comply with pesticide regulations (Hogan & Simeral, 1994). The research discussed here, part of a larger program evaluation, builds on this body of knowledge. In the study we examine the linkage between Indiana's private pesticide applicator recertification program and farmers' attitudes towards pesticide regulations as they relate to 1) restricted-use pesticide recordkeeping and 2) property rights and farm management decisions.

Methodology

There were 227 Indiana private pesticide applicators in Purdue University Cooperative Extension Service Area IX (Benton, Fountain, Jasper, Montgomery, Pulaski, Tippecanoe, Warren, and White counties) who had recertified by attending three continuing certification programs prior to March 2003. These individuals constituted the target population for the research project. A census, rather than a randomized sample, of all 227 persons was pursued because of the small size of the population. Their names and addresses were obtained from a database maintained by Office of the Indiana State Chemist.

The survey instrument used in the evaluation was developed via application of a logic model (Barkman, Machtmes, Mason, Gordon, & Sandbury, 2000). Extension pesticide safety education specialists reviewed it to establish content-relevance. That portion of the instrument reported here, which addresses farmer's attitudes about pesticide regulations, was a nine-item, Likert-type scale. The five item anchor points were 1 = strongly agree, 2 = agree, 3 = undecided, 4 = disagree, and 5 = strongly disagree. Items included a mix of positively and negatively worded statements to minimize the possibility of encouraging socially desirable responses.

A cover letter, survey, and self-addressed stamped envelope were mailed to all 227 farmers in Area IX who had completed their private applicator recertification requirements. A reminder letter followed 2 weeks later. Ninety-eight surveys were returned for a response rate of 43%. The low

response rate precludes generalizing findings to the larger population. However, the results are descriptive of the attitudes of almost half of the population and warrant consideration on an exploratory basis.

Following data collection, negatively worded items were reverse scored and a Cronbach's alpha test was run to determine instrument reliability. An alpha value of 0.73 was obtained, sufficient for basic research purposes (Nunnally, 1978). Descriptive statistics, including frequencies, means, and standard deviations were determined for purposes of data interpretation.

Results

Restricted Use Pesticide Recordkeeping

Private pesticide applicators are obligated under the Food, Agriculture, Conservation, and Trade Act of 1990 (commonly referred to as the 1990 Farm Bill)--or by specific state regulations--to maintain records of restricted use product applications for at least 2 years. Indiana's record keeping regulation specifies that private applicators must record 11 items, including the:

- Applicator's name and certification number;
- Month, day, and year of application;
- Crop, commodity, or site to which the pesticide was applied;
- Product name and EPA registration number;
- Total amount applied;
- Size of treatment area; and
- Application location.

State pesticide regulatory personnel, USDA representatives, and health professionals may access these records. The fundamental reasons for the record keeping regulations are 1.) to provide specific data in the event of a misuse complaint, 2.) to provide medical personnel with treatment information in the event of a poisoning by a restricted-use product, and 3.) to generate real-world use data in support of pesticide policy decisions.

Survey respondents agreed with the statement that information on a restricted-use pesticide label is important to their family. They disagreed with the notion that restricted-use pesticide label information is of interest only to the EPA. Respondents agreed also that information kept in their pesticide records might possibly save a life. However, when asked if farmers are over-regulated--where record keeping requirements were offered as a specific example--respondents were collectively ambivalent. They were undecided also when queried about the need for entering 11 separate pieces of information into record to meet their record keeping obligations (Table 1.).

Table 1.
Farmers' Attitudes About Restricted-Use Pesticide Record Keeping

Statement	Responses					N	Mean	S.D.
	1	2	3	4	5			
Pesticide safety information on a restricted-use pesticide label is important to my family.	41	52	2	0	1	96	1.63	.64
The information on a restricted-use pesticide label is only there to satisfy the EPA.	3	2	5	62	26	98	4.08	.82
The information I keep in my pesticide records could possibly save a life.	22	54	12	6	2	96	2.08	.89
I think that farmers are over-regulated by government and the pesticide record keeping requirements are just another example of this.	4	23	30	36	5	98	3.11	.98
There doesn't seem to be any good reason to	1	28	15	46	6	96	3.29	.99

record 11 pieces of information every time I spray.

Scale: 1= strongly agree, 2 = agree, 3 = undecided, 4 = disagree, 5 = strongly disagree

Property Rights and Farm Management Decisions

Minimization of pesticide spray drift is another regulatory component of the Indiana private pesticide applicator recertification program. The state of Indiana has a pesticide drift enforcement policy that embodies the concepts of due care and non-negligent use of pesticides. The policy seeks to minimize off-target pesticide spray drift while recognizing individual concerns, pesticide product labeling statements, and environmental and property protection needs. The importance of this policy grows as more farmers find themselves applying pesticides to fields next to urban neighbors.

Survey respondents agreed that their non-farming neighbors possessed the same property rights as themselves. They agreed also that, in the event of a damage problem resulting from spray drift, the neighbor is justified in lodging a complaint. Yet, when presented with the statement that Right-to-Farm legislation permits farmers to operate in any fashion that suits their production needs, survey respondents only mildly disagreed. Note that all 50 states have Right-to Farm laws protecting farmers--who are in compliance with state and local regulations--from lawsuits by neighbors who claim that the farm is a nuisance. While Indiana's Right-to-Farm law was not a mandatory topic at private applicator recertification meetings, the researchers felt that the law was sufficiently understood as one which grants some protection to farmers without trampling on rights of non-farming neighbors (Table 2.).

Table 2.
Farmers' Attitudes About Property Rights and Farm Management Decisions

Statement	Responses					N	Mean	S.D.
	1	2	3	4	5			
I believe that my non-farming neighbor has the same property rights that I do.	32	54	5	6	1	98	1.88	.84
It is acceptable/appropriate for my neighbor to complain if my spraying damages plants/vegetation on his property.	29	68	1	0	0	98	1.71	.48
The Right-to-Farm legislation gives me the right to carry on my business any way I want.	4	4	15	55	18	96	3.83	.94
Direct supervision requirements are so stringent that I may as well spray myself as supervise my non-licensed staff.	5	20	31	38	2	96	3.13	.94

Scale: 1= strongly agree, 2 = agree, 3 = undecided, 4 = disagree, 5 = strongly disagree

A summary question (Table 2.) addressed private applicator attitudes towards Indiana's direct supervision requirement for non-certified applicators. In Indiana, non-certified farm workers may apply restricted-use pesticides under the supervision of a private pesticide applicator if the private applicator is physically on site or in voice contact (e.g., radio, telephone, etc.) if the farm worker is less than 30 miles away. The supervision requirement affords protection to the community and environment by ensuring that everyone using restricted-use pesticides has documented the competency to do so or is working under the close supervision of a certified, properly credentialed applicator.

This requirement is a cornerstone of Indiana's regulatory effort to make certain that responsibility for the use of restricted-use products resides only with persons who have been tested with regards to their proper use. Nonetheless, survey respondents were undecided about whether the requirement was onerous to the extent that it might change their pesticide spraying activities.

Conclusions and Implications

The results of this study were somewhat surprising. It is apparent that Indiana private pesticide applicators who completed their recertification program requirements and participated in the survey believe that restricted-use pesticide labels bear important user-related information and that restricted-use records have value with respect to protecting human health. But these same applicators evidence no real support for the regulation that requires them to keep restricted-use product records.

Respondents recognized too that their non-farming neighbors should not have to expect to deal with pesticide spray drift. And they agreed that their neighbors should be able to lodge a complaint against them in the event that drift damages the neighbor's property. However, when presented with the statement that Right-to-Farm legislation grants them greater property rights than their neighbors, these same farmers expressed only modest disagreement.

Finally, respondents were asked about their attitude toward a state-imposed applicator supervision requirement. This requirement ensures that only competent or otherwise carefully supervised persons use restricted-use pesticides. It relates directly to the primary purpose of the private pesticide applicator certification program--to limit access to restricted-use products to trained and tested persons. Farmers were uncertain as to whether the requirement was too burdensome.

This seeming dichotomy between farmers' respect for careful management of restricted-use pesticides and their lukewarm support for regulations that mandate careful management presents a challenge to Extension educators involved in pesticide safety education. Farmers' suspicions about government intrusion into their farming activities may be cultural and deeply ingrained.

Therefore, successful regulatory programming has to address not just the mechanical issues pertaining to regulatory compliance, (i.e., how to comply) but also the context within which rules are deemed necessary. In order to encourage compliance, a discussion of the underlying regulatory rationale (e.g., promoting public health, enhancing environmental quality) assumes a vital role in any Extension program that successfully informs its audience about pesticide regulations.

The authors recommend that Extension educators who conduct private pesticide applicator training programs include material in their training curriculum about how regulations are beneficial. By articulating the personal and social benefits of government regulations, educators can increase the odds that applicators will abide by, not just the letter, but also the spirit of the law.

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