

**PESTICIDE PROTECTION EQUIPMENT PRACTICES AMONG
PENNSYLVANIA FARMS SURVEY**

OMB No. 0535-NEW

B. COLLECTION OF INFORMATION EMPLOYING STATISTICAL METHODS

- 1. Describe (including a numerical estimate) the potential respondent universe and any sampling or other respondent selection method to be used. Data on the number of entities (e.g., establishments, State and local government units, households, or persons) in the universe covered by the collection and in the corresponding sample are to be provided in tabular form for the universe as a whole and for each of the strata in the proposed sample. Indicate expected response rates for the collection as a whole. If the collection has been conducted previously, include the actual response rate achieved during the last collection.**

This cooperative agreement program will be conducted by NASS for the National Institute for Occupational Safety and Health (NIOSH). The survey will consist of two phases. The first phase will be a screening phase. A random sample of 3,000 farm operations will be selected from the approximately 55,000 crop production farms in Pennsylvania and screened. The sample will be proportionate to all crop farmers in Pennsylvania. The 2007 Census of Agriculture identified 54,772 farms in Pennsylvania as having at least one of the following crop categories: grains, oil seeds, fruits, vegetables, floriculture, nursery or hay. The 3,000 farm operators that will be selected for the Phase I survey will be drawn from the 2012 Census of Agriculture.

The population of interest includes all Pennsylvania crop production farm operators who personally apply their own pesticides using methods other than aerial applications or enclosed cab applications. The size of the population of interest is unknown. The study will focus on a subsample of eligibles identified as part of the Phase I screener. The eligible subsample includes those farmers who report having made qualifying applications within the 6 month reference period and who provide specific pesticide product information (name, EPA registration number and approximate purchase date) for at least one qualifying application.

This is a pilot study so there are no historic response rates available. Historically, NASS has always tried to obtain a minimum response rate of 80% on all surveys. During the phase I screening, it is expected that we will get an 80% response rate, resulting in 2,400 completed phase I screeners. It was conservatively estimated that a minimum of 10% will be eligible for participation in phase II according to the

screening eligibility criteria described above. This will provide NIOSH with a minimum of 240 completed Phase II reports. NASS will process reports in the order they are received including up to 300 completed Phase II reports.

The sample size was determined from the goal of 240 useable reports with usual mail (for the screener) and field (for the actual interview) response rates. It is unknown how many farm operators personally applied pesticides outside of an enclosed cab and not aerial applications. The 240 useable reports were determined from survey budget and confidence intervals determined by NIOSH for descriptive statistics. No power analysis is needed for descriptive statistics.

2. Describe the procedures for the collection of information including:

- statistical methodology for stratification and sample selection,
- estimation procedure,
- degree of accuracy needed for the purpose described in the justification,
- unusual problems requiring specialized sampling procedures.

A simple random sample from the population of Pennsylvania crop production farms who report using pesticides in the 2012 U.S. Census of Agriculture will be drawn proportionate to the total population to get the 3,000.

Only summary statistics, involving frequencies and means and standard deviations, of the key individual variables assessed are required for reporting. The same frequencies of key variables may further be presented within strata according to selected applicator and application characteristics, such as whether an applicator being licensed and whether a certain category of application was used. There is no formal estimation procedure, nor degree of accuracy used in reporting the required summary statistics for the reports.

3. Describe methods to maximize response rates and to deal with issues of non-response. The accuracy and reliability of information collected must be shown to be adequate for intended uses. For collections based on sampling a special justification must be provided for any collection that will not yield "reliable" data that can be generalized to the universe studied.

Training in refusal conversion will be given to enumerators. Training workshops for other surveys include sessions devoted to role playing for refusal conversion. Enumerators will be provided information about the value and use of the data being requested. In December 2012, NIOSH contracted the Research Triangle Institute to review and cognitive-test the questionnaire on 6 Pennsylvania crop producers who met the eligibility criteria. The Research Triangle Institute flagged questions that showed any concern for accuracy and/or reliability during their review and cognitive testing and provided the corrections which NIOSH implemented.

To maximize response for a future study with an expanded population, This pilot study has the following objectives:

- 1) To determine whether the expected response rate to phase I questionnaire is 80% or higher, in order to design a more cost-effective and efficient main study with respect to the screening methods.
- 2) To obtain the eligibility rates in the sample, in order to design a more cost-effective and efficient main study with respect to the screening methods.
- 3) To determine the adequacy of completion rates on the phase I questionnaire, in order to assess whether it is a sufficient method for determining respondent eligibility.
- 4) To assess the response rates overall, and those of the barrier and motivator questions on the phase II questionnaire, in order to determine whether this questionnaire and the barrier and motivator items are effective in obtaining the data.

4. Describe any tests of procedures or methods to be undertaken.

Analytic procedures that may be used to supplement the required summary statistics include T-tests, chi square tests, and linear and logistic regression to determine whether the frequencies of practices, barriers and motivators identified varied according to selected applicator and application characteristics.

5. Provide the name and telephone number of individuals consulted on statistical aspects of the design and the name of the agency unit, contractor(s), or other person(s) who will actually collect and/or analyze the information for the agency.

Specifications and survey design were developed by Kim Faulkner of NIOSH/NPPTL (412) 386-6609. Kim Faulkner will also supervise analysis of the data collected.

Data collection is carried out by Pennsylvania Field Office; Director of Eastern Field Operations is Norman Bennett (202) 720-3638.

The NASS survey statistician contact is Richard Hopper of the Survey Development and Support Branch of Census and Survey Division (202)720-2206. Richard Hopper is responsible for coordination of sampling, questionnaires, data collection, data processing, and Field Office support.

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