Supporting Statement – Part B

COOPERATOR FUNDED CHEMICAL USE SURVEYS

OMB No. 0535-0273

The information that is provided in this supporting statement serves as an overview of the sampling, statistical methodology, weighting of data for non-response, methods for increasing response rates, measurements for accuracy, testing of instruments, etc.

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.

The respondent universe for the **Maryland Pesticide Usage Survey** will include entities that applied pesticides in the reference crop year. The Pesticide Regulation Section of the Maryland Department of Agriculture maintains lists of certified applicators, businesses, and public agencies. This list of approximately 5,300 pesticide applicators will each receive a survey. To account for applicators who are not certified, an additional 1,500 farmers will be selected using random systematic sampling from the NASS list frame.

The respondent universe for the **Minnesota Pesticide and Fertilizer and Minnesota Best Management Practices Surveys** will include operations that planted one of the target commodities in the reference crop year. The NASS list frame will be used to identify operations based on control data. A sample of approximately 7,600 operators will be selected to provide data for a district and state level summary statistics. Random systematic sampling will be used.

The respondent universe for the **Mississippi State University Extension Service (MSUES) Field Crop Production Practice and Chemical Use Surveys** will include operations that planted one of the target commodities in the reference crop year. The NASS list frame will be used to identify operations based on control data. Random sampling will be used from the NASS list frame. The sample will be selected for estimates by Soil Resource Region defined by Mississippi State University. The sample will be screened in after planting is complete to identify operations with one of the targeted crops. The final sample

will be a subset of the screening sample. The final sample will be by crop so that each operator is assigned one crop to report on.

The respondent universe for the **Illinois Nutrient Loss Reduction Strategy (NLRS)** will include operations with field crops acreage greater than 100 but less than 5,000. The NASS list frame will be used to identify operations based on control data. Random sampling will be used from the NASS list frame. The sample will be selected for variation targets agreed to by NASS and Illinois Nutrient Research Education Council.

Response Rates: Following are average response rates for the most recent survey cycle.

State	Commodity	Sector	Survey Name	Sample Size	Percent Response	Percent Refusal	Percent Inaccessible
Mississippi	Rice	Growers	Cropping Practices - Rice 2023	56	75.0	7.0	13.0
Mississippi	Cotton	Growers	Cropping Practices - Cotton 2022	100	69.0	20.0	8.0
Mississippi	Soybeans	Growers	Cropping Practices - Soybeans 2021	168	67.0	22.0	6.0
Minnesota	Corn, Soybeans, Wheat, Hay	Growers	Best Management Practices - Minnesota 2023	7,600	25.8	4.7	54.9
Maryland	All	Pesticide Applicators	Maryland Pesticide Usage Survey 2022	6,240	32.7	2.5	64.5
Illinois	Cultural Practices	Crops	Nutrient Loss Reduction Strategy - 2023	1,097	64.2	14.4	21.4

** Percentages may not add to 100% due to rounding.

Telephone follow-up is the most common mode of nonresponse follow-up for most of the surveys in this docket. Mississippi's Cropping Practices survey utilizes face-to-face interviews as much as possible. Illinois, Maryland, and Minnesota have limited face-to-face interviews based on knowledge of the respondent and his or her response history. The data collection goal is to obtain a complete response from each of the operations in the sample, staying on time and within budget. Data collection periods for each survey are determined based on the publication date and the necessary post-data collection processing activities (summarization, analysis, preparing the publication, etc.).

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**

The **Maryland Pesticide Usage Survey** will be typically conducted from January through May after the reference year. This survey will collect data from certified

applicators, businesses, and public agencies for the amount of each chemical applied per county. Licensed applicators have this information in records. A questionnaire sample is attached to this submission.

The **Minnesota Pesticide and Fertilizer Survey** will be typically conducted from February through June after the reference year. This survey will collect data from the operator for

- The amount of each chemical and fertilizers applied,
- Management practices for chemicals and fertilizers,
- Integrated pest management practices, and
- Seed treatments

Operators in Minnesota typically have this information in records. Follow-up contacts to custom applicators will be done for operators who custom hire pesticide or fertilizer applications. Interviewing will be done by Computer Assisted Telephone Enumeration only. A questionnaire template is attached to this submission.

The **Minnesota Best Management Practices Survey** will be typically conducted in the summer months of year's when spring data collection calendars are too full for additional survey projects. This survey will collect data from the operator for:

- General corn and soybean management practices,
- Timing of application, and
- Sources of technical information

The screening phase of the **MSUES Field Crop Production Practice and Chemical Use Surveys** will be typically conducted in August of the reference year. The production practice and chemical use survey phase will be typically conducted from October through December of the reference year. This survey will collect data from operators for agricultural production practices (field operations, pest management practices, etc.), resource use (pesticide applications, fertilizer and nutrient application, types of equipment used, etc.), and variable costs of production for specific commodities. Interviewing will be done by personal enumeration. Questionnaire samples for each commodity is attached to this submission.

The second phase of the **MSUES Field Crop Production Practice and Chemical Use Surveys** will be typically conducted in October and November of the reference year. This survey will collect data from operators for agricultural production practices (primarily field operations), resource use (pesticide applications, fertilizer and nutrient application, types of equipment used, etc.), and limited costs for specific commodities. Interviewing will be done by personal enumeration. Questionnaire samples for each commodity is attached to this submission. Additional financial data provided by Mississippi State University will

be incorporated into the practices data collected from this survey for the enterprise budgets.

The **Illinois Nutrient Loss Reduction Strategy (NLRS)** will be typically conducted from February through March after the reference year. This survey will collect data from This survey will collect data from operators on “in field” and “edge of field” practices to reduce nutrient loss. A questionnaire sample is attached to this submission.

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.

Based on previous studies, NASS feels that the best tool for increasing response rates is improving the training of our enumerators. Enumerators who are better prepared to answer questions raised by respondents and to inform respondents of the importance of the data and how it will be used have had the best success rates. These data are very important to both the farming community as well as external data users (politicians, educators, banking industry, farm supply companies, etc.).

The following are the non-response adjustments for Maryland Pesticide Usage Survey.

Unit non-response in the Maryland Pesticide Usage Survey will be accounted for using reweighting. The records will be stratified by county and sector (certified applicators, businesses, and public agencies), and a non-response adjustment will be calculated as the sample size divided by the number of completed reports. This process redistributes the survey weights for the non-respondents to the usable records.
1
Item non-response in Maryland Pesticide Usage Survey will be handled by hand imputation from similar operations.

The following are the non-response adjustments for Minnesota Pesticide and Fertilizer Survey.

Unit non-response in the Minnesota Pesticide and Fertilizer Survey will be accounted for by reweighting. The non-response adjustment will be calculated as the sample size divided by the number of completed reports. This process redistributes the survey weights and positive reports will represent data for non-respondents.

1
Item non-response in Minnesota Pesticide and Fertilizer Survey will be handled by hand imputation from similar operations.

The following are the non-response adjustments for Minnesota Best Management Practices Survey.

Unit non-response in the Minnesota Pesticide and Fertilizer Survey will be accounted for by reweighting. The non-response adjustment will be calculated as the sample size divided by the number of completed reports. This process redistributes the survey weights and positive reports will represent data for non-respondents.
1
Item non-response in Minnesota Pesticide and Fertilizer Survey will be handled by hand imputation from similar operations.

The following are the non-response adjustments for MSUES Field Crop Production Practice and Chemical Use Surveys.

Unit non-response in the MSUES Field Crop Production Practice and Chemical Use Surveys will be accounted for using reweighting. The records will be stratified by soil region and stratum, and a non-response adjustment will be calculated as the sample size divided by the number of completed reports. This process redistributes the survey weights for the non-respondents to the usable records.
1
Item non-response in MSUES Field Crop Production Practice and Chemical Use Surveys will be handled by hand imputation from similar operations.

The following are the non-response adjustments for Illinois Nutrient Loss Reduction Strategy (NLRS) Surveys.

Unit non-response in the Illinois Nutrient Loss Reduction Strategy Surveys will be accounted for using reweighting. The records will be stratified by size, and a non-response adjustment will be calculated as the sample size divided by the number of completed reports. This process redistributes the survey weights for the non-respondents to the usable records.
1
Item non-response in Illinois Nutrient Loss Reduction Strategy Surveys will be handled by hand imputation from similar operations.

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

The sponsoring cooperator will be asked to provide examples of previous research for NASS to consider during the internal methodology review. If cognitive testing is needed and budgeted, NASS has a general clearance for cognitive testing under control number 0535-0248

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.

Survey design and methodology are determined by the Summary, Estimation, and Disclosure Methodology Branch, Methodology Division; Branch Chief is Lindsay Drunasky. Lindsay's email is lindsay.drunasky@usda.gov and phone number is (202) 690-8141.

Sample sizes for each State are determined by the Sampling, Editing, and Imputation Methodology Branch, Methods Division; Branch Chief is Andrew Dau. Andrew's email is andrew.dau@usda.gov and phone number is (202) 690-8141.

Questionnaire design methodology is determined by the Standards and Survey Development Methodology Branch, Methodology Division; Branch Chief is Dan Beckler. Dan's email is daniel.beckler@usda.gov and phone number is (202) 720-8858.

The NASS survey administration, data collection, estimation, and publication are carried out by NASS Regional Field Offices; Western and Acting Eastern Field Operation's Director is King Whetstone. King's email is king.whetstone@usda.gov. His phone number is (202) 720-9567. The survey administrators are responsible for coordination of sampling, questionnaires, documentation, training, and data processing.

February 2025