

OMB INFORMATION COLLECTION SUPPORTING STATEMENT
National Program 216 Technology Transfer Project – End Users Inputs

B. Collections of Information Employing Statistical Methods

The agency should be prepared to justify its decision not to use statistical methods in any case where such methods might reduce burden or improve accuracy of results. When Item 17 on the Form OMB 83-I is checked, "Yes," the following documentation should be included in the Supporting Statement to the extent that it applies to the methods proposed:

1. Describe (including a numerical estimate) the potential respondent universe and any sampling or other respondent selection methods 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 had been conducted previously, include the actual response rate achieved during the last collection.

The potential respondent universe of this survey includes the end-users of Agricultural Research Service developed technology in NP216 project implemented 18 states. That includes farmers and agricultural business customers in Alabama, Arkansas, Colorado, Georgia, Iowa, Maryland, Maine, Minnesota, Missouri, Mississippi, Montana, North Dakota, Nebraska, Oklahoma, Oregon, Pennsylvania, South Dakota, and Washington. Farmers in these 18 states who received payments from the USDA Farm Service Agency in 2008 comprised the accessible population. The table below indicates the number of farmers in the FSA database residing in each state. There **are 789,986 farmers in the population frame**. We will use proportionate random sampling procedure to draw our study sample from this population frame. Previous research reveals that response rate to mail surveys by farmers is low. Diekmann and Batte (2009) observed a 41.4% response rate for farmers in Ohio for a mail survey while English, Jensen and Menard (2005) reported 23.3% response rate for farmers in Tennessee for a mail survey. Based on this information we expect a 30% response rate by farmers in this survey. The following table is the total number of farmers by state in the population frame that we plan to draw the study sample.

Distribution of Study Population by State

State	Number of Farmers
AL	30644
AR	36333
CO	22072
GA	40366

IA	139636
ME	2215
MD	7077
MN	89979
MS	35056
MO	93271
MT	23812
NE	81891
ND	44928
OK	50052
OR	9297
PA	22735
SD	43745
WA	16877
Total	789986

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, and any use of periodic (less frequent than annual) data collection cycles to reduce burden.

The study design and sampling scheme is described in more detail below. This is a mail survey conducted with randomly selected 5123 farmers from a population of all farmers receiving Farm Service Agency payments in 2009 and 2010. The database contained 2,252,097 names. We limited the universe of possible farmers to those in the states where NP216 programs exist (see the table above).

The Krejcie and Morgan (1970) sampling table was used for determining the sample size. The degree of accuracy selected is 95% confidence with a 2.5% margin of error for the estimated statistics. The Krejcie and Morgan (1970) table indicates that we need to survey 1,534 farmers from the population of 789,986 farmers for achieving this level of accuracy. Because we expect the farmer response rate to be 30% we need to increase the sample size from 1,534 to 5,113 to achieve the desired level of accuracy.

We use the following calculation for determining the sample needed to accommodate low response rate:

$$\text{Needed sample} = 1,534(100/30) = 5,113$$

Proportionate random sampling was used to draw 5,113 farmers from the population in 18 states. The rationale for the use of proportionate random sampling is to ensure the representation of farmers from all the states where NP216 scientists are located and focus their end-user technology transfer efforts. The SURVEYSELECT procedure of the Statistical Analysis System (SAS) Version 9.2 was used to draw the sample from the above described population frame and defined accuracy. The summary of the proportionate random sample drawn from the 18 states in the population frame is summarized in the following table:

State	Number of Farmers	Proportionate Random Sample
AL	30644	199
AR	36333	236
CO	22072	143
GA	40366	262
IA	139636	904
ME	2215	15
MD	7077	46
MN	89979	583
MS	35056	227
MO	93271	604
MT	23812	155
NE	81891	531
ND	44928	291
OK	50052	324
OR	9297	61
PA	22735	148
SD	43745	284
WA	16877	110
Total	789986	5123

This population frame contains mailing addresses and telephone numbers. The study will be conducted by mail and telephone numbers will be used for conducting a follow-up with nonrespondents.

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.

The study will be conducted only once and we plan to send the survey during the winter when farmers are less busy. This will help increase the response rate. We will mail the survey with a cover letter and stamped return addressed envelope. The cover letter will briefly describe the need for the survey and how the information will be used. One week after the mailing, if we do not receive adequate response rate, we will remind nonrespondents with a follow-up post card. After two weeks of the first mailing, we will send the survey to nonrespondents with a cover letter inviting them to complete the survey. One week after the second mailing of the survey, if we do not receive adequate response rate, we will remind nonrespondents with a follow-up post card. We will not use any other methods for collecting data.

A panel of extension experts was used to review the survey and established the content validity. The most significant factor contributing to the response rate is length of the survey. We limited the survey to six pages maximum. The survey was formatted to enable easy readability and most questions only require the participant to check their preference from a list. We have limited open ended questions to a bare minimum. We will include a cover letter explaining the purpose of the survey to secure the cooperation of respondents.

4. Describe any tests of procedures or methods to be undertaken. Testing is encouraged as an effective means of refining collections of information to minimize burden and improve utility. Tests must be approved if they call for answers to identical questions from 10 or more respondents. A proposed test or set of test may be submitted for approval separately or in combination with the main collection of information.

Because OMB has indicated that this has to be the final form of the survey, no further testing or adjustments will be made to the survey. We will not perform a pilot test of the survey with farmers.

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), grantee(s), or other person(s) who will actually collect and/or analyze the information for the agency.

North Carolina State University Extension Evaluation Specialist, Dr. K. S. U. Jayaratne is responsible for collecting data, designing and conducting statistical analysis of the data. His graduate assistant Lauren Mouton provides needed assistance for this work. Their contact information:

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