

RESIDUE AND BIOMASS FIELD SURVEY OMB No. 0535-0251

Passback questions from OMB and NASS responses.

Supporting Statement A

Item 16. There will not be any publications directly from these surveys.

For the respondents, we measured something in the grower's field and could give him or her the results for that field. For the December questionnaire, we are receiving information from the grower. No publication is intended from the December questionnaire that could be given to the operator.

OMB question: Please clarify. Do you always offer the resulting measurements to the respondents?

NASS response: For this particular survey, ARS and NASS do offer the measurement results of the field(s) for any residue or corn samples that were obtained.

Supporting Statement B

Item 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.

OMB question: The supporting statements do not provide justification for sample sizes (number of fields, size of sampled area within fields, number of plants collected, etc.). Please add some justification or reference any sample design documents that cover those issues.

NASS response: Our objective for sampling physiologically mature corn plants just prior to harvest is to estimate harvest index (HI= grain mass/total plant mass). Harvest index is a relatively conservative variable for modern corn varieties. We use harvest index and grain yields (hopefully, from yield monitor maps) provided by the farmers to estimate corn residue mass for the 40 or so fields. For the 2009 biomass sampling, the CV for grain, stover, and total plant mass

were 17-20%, while the CV for harvest index was about 4%. With our sampling scheme of 2 biomass samples of 6 plants each per field, we should detect 8% differences in harvest index (alpha = 0.05 two tail; power = 0.8).

These biomass fields will provide calibration and validation data for models that use remotely sensed data from the growing season to estimate residue mass produced in each corn field of the watershed. This estimate of corn residue mass represents the maximum amount of crop residue on the soil surface. Residue removal for biofuel or feed, soil tillage, and decomposition reduce crop residue cover after grain harvest. In the following Spring after most of the corn and soybeans are planted, we will measure crop residue cover in selected fields using the line-point transect method. Our selection of fields is not random; rather, we select representative fields to span a wide range of crop residue covers. We will develop statistical models to estimate crop residue cover and soil tillage intensity using a time series of Landsat (and Sentinel-2) data.