

Appendix X: Technical Requirements for Reporting and Simulating Cover Crops in the Phase 6 Watershed Model

Background: In June, 2013 the Water Quality Goal Implementation Team (WQGIT) agreed that each BMP expert panel would work with CBPO staff and the Watershed Technical Workgroup (WTWG) to develop a technical appendix for each expert report. The purpose of the technical appendix is to describe how the expert panel's recommendations will be integrated into the modeling tools including NEIEN, Scenario Builder and the Watershed Model.

Q1. What are the definitions of the cover crop practice types?

A1. The panel recommended three types of cover crop practices for credit in the Phase 6 Model. Definitions for each type are included below.

Traditional Cover Crop – A short-term crop grown after the main cropping season to reduce nutrient losses to ground and surface water by sequestering nutrients. This type of cover crop may not receive nutrients in the fall, and may not be harvested in the spring.

Traditional Cover Crop with Fall Nutrient Applications – A short-term crop grown after the main cropping season to reduce nutrient losses to ground and surface water by sequestering nutrients. This type of cover crop is planted upon cropland where manure is applied following the harvest of a summer crop and prior to cover crop planting. The crop may not be harvested in the spring.

Commodity Cover Crop – A winter cereal crop planted for harvest in the spring which does not receive nutrient applications in the fall. Any winter cereal crop which did receive applications in the fall is not eligible for nutrient reductions.

Q2. What are the nutrient and sediment reductions associated with each practice?

A2. Answer pending recommendation from WTWG and Ag Workgroup.

Q3. Which land uses can receive nutrient and sediment reductions for each cover crop practice type?

A3. Traditional Cover Crops and Traditional Cover Crops with Fall Nutrient Applications may be submitted upon any of the following row crop land uses:

- Silage with Manure
- Silage without Manure
- Specialty Crop High
- Specialty Crop Low
- Other Agronomic Crops
- Full Season Soybeans
- Grain with Manure
- Grain without Manure
- Small Grains
- Double-Cropped
- Specialty Crop Low

Commodity Cover Crops represent winter cereal production and thus, may only be applied to the Small Grains and the Double Cropped land uses.

Q4. Are the cover crop practices considered annual practices for NEIEN reporting purposes?

A4. Yes. States should submit acres which qualify under each practice each year.

Q5. Can cover crops be combined with other practices to treat runoff from agricultural land uses?

A5. Yes. For example, a single acre of cropland could be eligible for reduction credits from conservation tillage, manure injection, nutrient management, cover crops and upslope reductions from buffers.

Q6. How did the panel isolate the benefits of cover crops to reducing soil runoff from the benefits of residue management (conservation tillage) practices?

A6. The panel provided phosphorus and sediment reductions only for those land uses which are most likely to remain in a low residue (high tillage) category. Those are: Silage with Manure, Silage without Manure, Specialty Crop High and Other Agronomic Crops. The panel assumed that phosphorus and sediment reductions from cover crops were inherently considered in the residue management practices. Additionally, traditional spring transect residue surveys should indicate whether a field had cover crops or not, and the resulting residue cover, allowing states to report both practices on the same field.

Q7. What information should a state report to NEIEN in order to receive credit for cover crop practices?

A7. States should report the following information to NEIEN.

- *BMP Name:* Please consult Phase 6 NEIEN Appendix for extensive listing.
- *Measurement Name:* Please consult Phase 6 NEIEN Appendix for extensive listing.
- *Land Use:* Approved NEIEN agricultural land use classes; if none are reported, the default will be CROP
- *Geographic Location:* Approved NEIEN geographies: County; County (CBW Only); Hydrologic Unit Code (HUC12, HUC10, HUC8, HUC6, HUC4); State (CBW Only)
- *Date of Implementation:* Year cover crop was planted.