Soil Quality Enhancement Activity – SQL04 – Use of cover crop mixes

Enhancement Description
This enhancement is for the use of cover crop mixes that contain two (2) or more different species of cover crops or cultivars of a single species.

Land Use Applicability
Cropland

Benefits
The use of a cover crop mixture that contains two (2) or more species is often more effective than a planting of single species cover crop. Cover crop mixtures adapt to variation in soils, increase biomass production, provide broader spectrum of weed control, have better winter survival and ground cover and attract a range of beneficial insects. Nutrients can be trapped or produced depending on existing soil conditions and plants used. Mixes can be a grass/legume, multiple cultivars of a single species, or a mix containing plants with different growth patterns, e.g. fast and slow, tall and short

Conditions Where Enhancement Applies
This enhancement applies to all crop land use acres (excluding permanent hayland).

Criteria
1. Cover crop mixes must contain a minimum of two (2) different plant species or two (2) different cultivars of a single species with differing maturity dates.
2. Cover crop species will be selected from state specific lists. The list of approved cover crops is available at the local NRCS Field Office.
3. Crops planted following cover crop must be no-tilled.
4. Nutrient applications for crops following cover crop should consider nitrogen fixation from leguminous cover crops.

Adoption Requirements
This enhancement is considered adopted when two different plant species or cultivars of a single species are being grown on the land use acre.

Documentation Requirements
1. Written documentation for each year describing, in detail, the following items:
   a. Cover crop species used and dated planted,
   b. Date and amount of fertilizer applied,
   c. Method to kill cover crop and date completed, and
   d. Crop planted after cover crop and method used.
2. A map showing fields where the enhancement is applied.
3. Photographs of a representative number of fields showing cover crop mix.

References

Sainju, U.M., W.F. Whitehead and B.P. Singh. 2005. Biculture Legume–Cereal Cover Crops for Enhanced Biomass Yield and Carbon and Nitrogen. Agron. J. 97:1403–1412.

SOIL QUALITY ENHANCEMENT ACTIVITY

SQL04 – OR Use of Cover Crop Mixes

Planting a cover crop mixture can allow for one species to thrive in an area where a different species may not, thus increasing the chances for a successful cover crop. Planting a mixture of cover crop species can also attract a diversity of soil organisms that may provide pest management benefits (although research shows mixed results). Cover crop mixes that produce large amounts of plant matter can be used to add organic matter to the soil. These additions can enhance the populations of soil microorganisms that help with soil structure and cycling nutrients. There are two types of high biomass mixes: legume mixes and legume/grass mixes. Mixes of strictly legumes are used to maximize nitrogen addition to the soil. Mixtures that contain legumes and grasses like oats or barley provide other benefits: the fibrous roots of grass improve can improve infiltration, grass can scavenge excess nitrogen from the soil, and it provides structural support for the legumes.

Prior to selection of this enhancement, you should determine if a cover crop mix is appropriate for your area. Several areas in Oregon do not receive enough precipitation to make cover cropping feasible. Read over the individual cover crop fact sheets in cited references for precipitation requirements or contact the NRCS State Agronomist for more information.

Approved cover crop mixes include those found in ***Using Cover Crops In Oregon, EM8704, OSU Extension, 1998*** (distributed previously to all field offices), ***Managing Cover Crops Profitably, 3rd Edition, USDA-SARE 2007*** (available on the State Office shared drive), and the ***Oregon and Washington Seeding Guide,*** available at: http://www.or.nrcs.usda.gov/technical/ecs/plants/general_info.html.

This list is not comprehensive. Other species may be practical and feasible for your location. Contact the NRCS State Agronomist for further information.

Documentation Requirements for Use of Cover Crop Mixes

1. **A map or aerial photo showing fields where the Enhancement is applied.**
2. **Photographs of a representative number of fields showing cover crop mix.**
3. **Expected Benefit(s):**

   ___ Erosion Control ___ Soil Quality/Fertility

   ___ Pest Suppression ___ Biodiversity

4. **Crop Rotation: _____**
5. **Rotation Length in Years: _____**

6. **Cover Crop Mix Planted: _____**

7. **Percent Pure Live Seed: _____**

8. **Seeding Rate/Acre: _____**

9. **Date Planted: _____**

10. **Date Cover Crop Terminated: _____**

11. **Method of Termination: ___ Tillage ___ Chemical ___ Rolled/Crimped**

12. **Date and Description of Field Operations for each Crop and Cover Crop (including tillage, nutrient application, planting/seeding, and harvest):**

Date	Field Operation	Crop (or Cover Crop)
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		