

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.

Land Use Applicability

Cropland.

Benefits

The use of a cover crop mixture that contains two (2) or more plants 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.

Criteria

1. Cover crop mixes must contain a minimum of two (2) different plant species or cultivars of a single species with different maturity dates.
2. Cover crop species will be selected from state specific lists in the NRCS Field Office Technical Guide.
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.

Documentation Requirements

1. Written documentation for each year of this enhancement describing 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
 - d. Crop planted after cover crop and method used
1. A map showing fields where the enhancement is applied
2. Photographs of a representative number of fields showing cover crop mix

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 Fact Sheets (attached/linked here) for precipitation requirements or contact the NRCS State Agronomist for more information.

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

Acceptable cover crop mixes include the following taken from *Oregon & Washington Guide For Conservation Seedings And Planting*, USDA-NRCS, Portland, OR, April 2000.

East Side Oregon

<u>Common Name</u>	<u>Mixtures (lbs/ac)</u>			
	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>
*Birdsfoot trefoil or Red clover	2	2		
*Orchardgrass	4	4		
*Red fescue/Hard fescue	2		3	
*Sheep fescue		2		
*Perennial ryegrass			5	
Turnips				80
Peas				50

* Irrigated or over 18 inches precipitation

West Side Oregon-Non-Irrigated

<u>Common Name</u>	<u>Mixtures (lbs/ac)</u>		
	<u>A</u>	<u>B</u>	<u>C</u>
Hard fescue	6		
Red fescue		6	
Chewings fescue			6
White dutch clover	2	2	2

West-Side Oregon-Irrigated

<u>Common Name</u>	<u>Mixtures (lbs/ac)</u>			
	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>
Orchardgrass	4	4	2	
Hard fescue		2		2
Chewings fescue	2			
Tall fescue (dwarf type)			6	
White clover	2			2
Ladino clover		2	2	
Perennial ryegrass				3

Additionally, cover crop mixes may contain any of the cover crop species listed in Enhancement SQL02, provided they meet the criteria set forth above for this Enhancement. These include:

East Side

Annual ryegrass([EM8691](#))
Barley, Oats, Triticale, Wheat([EM8692](#))
Cereal rye([EM8694](#))
Crimson clover ([EM8696](#))
Field pea (Austrian winter pea) ([EM8698](#))
Hairy vetch ([EM8699](#))
Mountain brome ([BRMA4](#))
Rapeseed (canola, summer turnip) ([EM8700](#))
Red Clover (birdsfoot trefoil) ([EM8701](#))
Slender wheatgrass ([ELTR7](#))
Subterranean clover ([EM8702](#))
Yellow sweet clover ([YWhtSwtClvr](#))

West Side

Annual ryegrass ([EM8691](#))
Barley, Oats, Triticale, Wheat ([EM8692](#))
Buckwheat ([EM8693](#))
Cereal rye ([EM8694](#))
Common vetch ([EM8695](#))
Crimson clover ([EM8696](#))
Fava bean ([EM8697](#))
Field pea ([EM8698](#))
Hairy vetch ([EM8699](#))
Pine lupine ([LUAL3](#))
Rapeseed ([EM8700](#))
Red clover ([EM8701](#))
Subterranean clover ([EM8702](#))
Sudangrass ([EM8703](#))

These publications may be found at:

<http://extension.oregonstate.edu/catalog/details.php?sortnum=0124&name=Cover+Crops>
or in each NRCS Field Office.

Other cover crop mixes are acceptable for this Enhancement but require approval. Contact the Oregon NRCS State Agronomist.

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. Fertilizers Applied
Rate/Ac: _____ Formulation: _____
Method: _____
Within OSU Nutrient Guidelines (if no please explain)? _____
12. Method of Termination: __Tillage __ Chemical __Rolled/Crimped
13. Date and Description of Field Operations for each Crop and Cover Crop (including tillage, nutrient application, planting/seeding, and harvest):

<u>Date</u>	<u>Field Operation</u>	<u>Crop or Cover Crop</u>
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		