

Soil Quality Enhancement Activity – SQL11 –Cover cropping in orchards, vineyards and other woody perennial horticultural crops



Enhancement Description

Grow perennial or annual cover crop mixtures of grass, legumes, native flowering plants and/or other forbs year round to provide soil coverage, organic mulch, beneficial insect habitat, and other conservation benefits in orchards, vineyards or other perennial horticultural crops. Cover crops, once planted, are replanted annually or maintained year after year.

Land Use Applicability

Cropland

Benefits

Maintaining orchard and vineyard floors or row middles of perennial horticultural crops with continuous cover protects the soil resource from erosion, enhances soil quality, reduces compaction and rutting from field operations, and suppresses weeds. Cover crops provide habitat for pollinators and natural enemies of crop pests, fix nitrogen (legumes), and conserve moisture via organic mulch and suppress weeds.

Conditions Where Enhancement Applies

This enhancement only applies to acres of orchards, vineyards, and other woody perennial cropping systems.

Criteria

1. Plant cover crops in the inter-row spaces to be compatible with optimum yield and quality of the fruit crop. Grow cover crops on a minimum of 60% of the field area year annually. When annual cover crops are used, plant each succeeding cover crop within as soon as possible after termination of the preceding cover. Residue from the previous cover crop must be left on the soil surface until immediately before the next cover crop is planted.
2. Areas near crop rows or young, establishing trees that must be kept free from competing vegetations shall be maintained with organic mulch to control erosion, conserve soil moisture, and sustain soil quality. Select mulching material, application rate, and placement compatible with needs of the production crop. Total soil coverage (living cover + mulch) shall be maintained at a minimum of 85% of the field area. Replenish mulch as needed. Exception: In lieu of using mulch to meet the 85% minimum requirement, the area beyond the 60% minimum shall be seeded to a cover crop for systems where the mulching material would hinder harvest operations.
3. Select and seed cover crop mixtures at rates and within planting date ranges as determined or agreed to by the NRCS State Agronomist. Perennial mixtures must consist of at least two



species from different plant families. Annual cover crops must include at least three species from a minimum of two different plant families.

4. Select a mixtures and sequence of cover crop species to accomplish two or more of the following objectives:
 - a. High biomass and root mass to build soil organic matter. Expect at least 2 tons/ac of aboveground biomass annually.
 - b. Biologically fixed nitrogen for the production crop. Choose a mixture that will provide sufficient but not excessive amounts of N to the crop. Schedule mowing or termination of the cover to optimize rate and timing of N release for crop needs. Leave clippings near crop rows for desired N delivery.
 - c. Mulch generation. Plant mixtures which can be cut periodically to generate mulch material for application to crop rows or areas not protected by living cover.
 - d. Weed suppression. Select covers that establish rapidly form a heavy canopy and suppress weeds without competing excessively with the production crop. Schedule mowing of perennial covers to optimize weed control and prevent weed propagation.
 - e. Habitat for beneficial insects. Select a mixture of flowering plants based on the habitat needs of key predators or parasitoids to control the most economically important pests of the crop to be protected.
 - f. Pollinator habitat. Select a mixture of flowering plants to provide food and habitat for desired pollinators. Time mowing and other management operations to minimize competition for pollinators while the fruit crop is blooming.

Adoption Requirements

This enhancement is considered adopted when cover crop mixture are established and total ground coverage (living cover + organic mulch) reaches 85% of the field area.

Documentation Requirements

1. Cover crop species mix, planting dates, mowing dates and (for annual species) termination dates and methods.
2. Pattern and layout of production and cover crops plus mulch used to document how soil coverage criteria were reached.
3. The accomplished items from “Criteria #4.”
4. Photographs of representative fields showing cover crops added to the rotation, timing and method of cover crop establishment, and cover crop management.
5. Seed and legume inoculant tags and receipts.

References

Ames, G. K., G. Kuepper, and A. Baier. 2004. Tree Fruits: Organic Production Overview. National Sustainable Agriculture Information Service. 27TU<http://attra.ncat.org>U27T.

Dufour, R. 2006. Grapes: Organic Production. National Sustainable Agriculture Information Service. pp 44. 27TU<http://attra.ncat.org>U27T

Hinman, T., and G. Ames. 2001. Apples: Organic Production Guide. National Sustainable Agriculture Information Service. pp 40. 27TU<http://attra.ncat.org>U27T



Utah State Supplement 2015 for SOL11

Notes:

1. Annual cover crops will be selected using the “Cover Crop Chart With Plan ID” eFOTG> Section IV>Cover Crop.
2. Mow cover crop at or before anthesis of the first species in the cover crop mix to prevent seeding.
3. Terminate cover crop considering water use and seed set.
4. Perennial cover crops will be selected using Range Planting 550 Specification sheet.
5. Perennial cover crops will be mowed at or before anthesis of the first species in the cover crop mix to prevent seeding. OR cover crop will be allowed to reseed and farm weed management will be adjusted to confine the cover crop.

Enhancement Name	Enhancement Code	Potential Duplicative Practices (code)	Incompatible Enhancements
Cover Cropping in Orchards, Vineyards and Other Woody Perennial Horticultural Crops	SQL11	340 – Cover crop 327 – Conservation cover	ENR10 SQL04 SQL08 WQL10



United States Department of Agriculture
Natural Resources Conservation Service

2015 Ranking Period 1

Operations & Maintenance, Conservation Measures, and Client Acknowledgement

Operation and Maintenance	
Operation:	
Maintenance:	
Conservation Measures	
Actions that must be implemented by the landowner/manager during practice implementation:	
Client's Acknowledgement Statement	
The Client acknowledges that:	
a. They have received a copy of the enhancement and understand the contents and requirements.	
b. It shall be the responsibility of the client to obtain all necessary permits and/or rights, and to comply with all ordinances and laws pertaining to the application of this practice.	
Client:	Date: _____

Planner:	Date:
