United States Department of Agriculture
Natural Resources Conservation Service

2011 Ranking Period 1

Water Quality Enhancement Activity – WQL17 - Use of non-chemical methods to kill cover crops

Enhancement Description
This enhancement is for the use of non-chemical methods to kill cover crops prior to planting. These methods include mowing, rolling, undercutting and weather kill.

Land Use Applicability
Cropland

Benefits
The use of non-chemical methods to kill cover crops provides a dense bio-mass that controls erosion, increases soil organic matter, reduces soil water evaporation, suppresses weeds along with other improvements in soil and water quality while eliminating potential water quality problems or other concerns from the use of herbicides.

Criteria

General
- All crops will be killed using one of the methods described below
- Can use different methods within the cropping rotation
- Cash crops must be no-tilled or strip-tilled after cover crop is terminated
- Use of herbicides are prohibited to terminate cover crop

Mowing
- Mowing must be done using a “Flail” or “Sickle Bar” mower
- Time mowing to ensure plant re-growth is minimized, e.g. after flowering in rye or mid-bloom or later in hairy vetch

Roller Crimping
- Delay crimping until after early milk stage in cereal grain cover crops to ensure successful termination
- Manage cover crops for high bio-mass production through proper selection of seed, fertilizer application and timing of planting in the fall
- Cover crop must be crimped not cut

Undercutting
- Use “V” blade cultivators that are run just under the surface of the soil (<2’)
- Most suitable for bed production

Weather Kill
- Select cover crop based on those that are most reliably killed by temperature shifts
- Use both summer or winter kill cover crops based on crop rotation

Documentation Requirements

1. Written documentation for each year of this enhancement describing the following items:
    a. Cover crop used and dated planted
    b. Date and amount of fertilizer applied (if used)
    c. Date on which cover crop was terminated
    d. Cash crop planted and method used
1. A map showing fields where the enhancement is applied
2. Photographs of a representative number of fields showing roller crimping of cover crop

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Document cover crop termination method(s).