



CONSERVATION ENHANCEMENT ACTIVITY

E484C

**CONSERVATION
STEWARDSHIP
PROGRAM**

Mulching with natural materials in specialty crops for weed control

Conservation Practice 484: Mulching

APPLICABLE LAND USE: Crop (annual & mixed), Crop (perennial)

RESOURCE CONCERN ADDRESSED: Plants

ENHANCEMENT LIFE SPAN: 1 Year

Enhancement Description

Application of straw mulch or other state-approved natural material (such as wood chips, compost, green chop, dry hay, or sawdust) for weed control in specialty crops.

Criteria

Use mulch of sufficient ground cover, thickness, and texture to provide habitat for ground beetles, spiders, and other predators of weed seeds and crop pests. Mulch thickness will be determined by the size of the plant being mulched. Thickness of the mulch shall be adequate to prevent emergence of targeted weeds, but no less than four inches deep for dry mulches.

Grass-based green chop should be applied no greater than three inches deep as it will compact and rot. Add additional layers of green chop as decomposition occurs to maintain weed control. Do not use green chop from areas recently treated with herbicides.

Mulches shall be kept a minimum of three inches away from the stems of plants where disease is likely to occur. Depending on the crop, mulch distance may need to be up to six inches away from the stems.

Mulches applied around growing plants or prior to weed seedling development shall have 100% ground cover.

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Avoid finely divided residues (e.g. sawdust) and those rich in soluble carbohydrates (e.g. fresh chopped corn or other grasses) with a carbon to nitrogen ratio (C:N) greater than 30 that tie up soil nitrogen (N) and necessitate supplemental N applications.

Avoid excessively thick or tightly packed mulches that can interfere with the movement of ground beetles and other beneficial organisms and may result in soggy, anaerobic conditions at the soil surface and increase the incidence of crop pests and diseases.

North Dakota Sideboards:

Guidance on determining specialty crops can be found at:

<https://www.ams.usda.gov/services/grants/scbgp/specialty-crop>

Some NDSU-Extension information on mulching can be found at:

<https://library.ndsu.edu/ir/bitstream/handle/10365/5255/h1312.pdf?sequence=1>

<https://www.ndsu.edu/agriculture/ag-hub/research-extension-centers-recs/dickinson-rec/research/horticulture>

https://www.ndsu.edu/agriculture/sites/default/files/2022-10/Tomato_Variety_Mulch_Evaluation_Study.pdf



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Documentation and Implementation Requirements

Participant will:

- Prior to implementation, provide a map showing location of mulch application.
- Prior to implementation, provide NRCS with the planned mulching information. Select crops to be mulched, mulching materials, and rates of application that will provide weed suppression and do not contribute to pest problems.

Field	Crop	Mulching Material	Planned Rate of application (pounds/acre)	Planned Depth of Mulch (inches)	Planned Application Date

- During implementation, notify NRCS of any planned changes in the cropping system, crop management, or mulching to ensure enhancement criteria are met.
- During implementation, take photos of mulch after application, during the growing season, and at harvest.
- During implementation, use mulch of sufficient ground cover and suitable thickness and texture to provide habitat for ground beetles, spiders, and other predators of weed seeds and crop pests.
- During implementation, maintain all receipts or other records showing the quantity of mulch used.
- After implementation, provide NRCS with the applied mulching information and any additional information related to the mulching impacts on weed control or crop production.

Field	Crop	Mulching Material	Actual Rate of application (pounds/acre)	Actual Application Date



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NRCS will:

- As needed, provide technical assistance to meet the criteria of the enhancement.
- Prior to implementation, verify mulching materials to be used, depth of mulch, and quantity needed, and document on implementation requirements.
- Prior to implementation, use information provided from the participant to calculate the Management Soil Conditioning Index (SCI) value using current NRCS wind and water erosion prediction technologies. **Management SCI Value = _____**
- During implementation, evaluate any planned changes in the cropping system, crop management, or mulching to ensure enhancement criteria are met.
- After implementation, review the applied mulching information and records and recommend adjustments to the mulch specifications for subsequent years based on success of the enhancement.

NRCS Documentation Review:

I have reviewed all required participant documentation and determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature Date