NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD

MULCHING

(acre)
CODE 484

DEFINITION

Applying plant residues or other suitable materials not produced on the site to the soil surface.

PURPOSES

To conserve moisture; prevent surface compaction or crusting; reduce runoff and erosion; control weeds; and help establish plant cover.

CONDITIONS WHERE PRACTICE APPLIES

On soils subject to erosion on which low-residue-producing crops, such as grapes and small fruits, are grown; on critical areas; and on soils that have a low infiltration rate.

When mulch materials are used to protect a new seeding or planting of vegetative materials except for orchards and vineyards, all the work is considered to be Critical Area Planting (342). When mulch materials are used alone and not in conjunction with a seeding or planting, the practice is called Mulching.

CRITERIA

Erosion Control on Critical Areas

When mulching with straw, use at least 4,000 pounds of cereal grain straw or grass hay per acre to be evenly distributed over the area to be treated and anchored sufficiently to hold it on the site.

When mulching with wood fiber, use at least 2,000 pounds of wood fiber mulch per acre.

When mulching with other wood products (chips, bark, shavings) or other material, they must be applied in an amount that will provide at least 80 percent ground cover.

When mulching with gravel or other inorganic material for permanent erosion control, they must be applied in sufficient amounts to provide 100 percent ground cover.

Protection or Soil Improvement

The mulch material used will be evenly applied in sufficient amounts to achieve the results contemplated when used alone or in combination with other practices.

When waste materials with potential for polluting surface waters are used for mulching (animal manures, sewage sludge, wastes from food processing, other similar materials) care will be taken to assure that runoff from the area will not enter streams, lakes, ponds, or reservoirs and that nitrate leaching will not be a problem.

CONSIDERATIONS

The most common mulch material available will be bales of barley and wheat straw. Rice straw persists longer but may not be easily available. Most hay will decompose faster than barley or wheat.

Citrus and avocado growers often "winterize" their steep farm roads with straw at the beginning of the rainy season and then restrict any vehicle traffic. Some strawberry growers mulch alternate, up and down hill farm roads.

Disturbed construction sites and new housing projects often need to use mulches to comply with their conditional use permit to control sediments.

Barley and wheat straw usually contains 10 to 15 pounds/acre of seed. The resulting green growth does not interfere with most intended uses or future landscaping.

Demand for mulching as a method of protecting steep areas disturbed by construction (road sides, ditch banks, building sites, dams, etc.) has led to development of equipment for applying mulches along with a number of manufactured products to use as mulches and hold mulching materials in place.

Mulching equipment includes blowers, hydro applicators and disk-type straw punchers. Manufactured mulches include wood-fiber mulch and various types of matting. Netting to anchor mulches

are made from plastics, paper and burlap. Several liquid "tackifiers" that can be mixed with water and sprayed on straw and wood fiber mulches to bind them together are available.

Many waste materials suitable for use as mulches on agricultural land are produced by various enterprises. These materials include wood bark, chips, shavings, and sawdust; animal manures; rice hulls; and some other materials from food processing plants. Where conservation benefits can be derived by mulching on adjacent agricultural land, the practice can provide an environmentally acceptable and economically sound method of waste disposal.

Endangered Species Considerations

Determine if installation of this practice with any others proposed will have any effect on any federal or state listed Rare, Threatened or Endangered species or their habitat. NRCS's objective is to benefit these species and others of concern or at least not have any adverse effect on a listed species. If the Environmental Evaluation indicates the action may adversely affect a listed species or result in adverse modification of habitat of listed species which has been determined to be critical habitat, NRCS will advise the land user of the requirements of the Endangered Species Act and recommend alternative conservation treatments that avoid the adverse effects. Further assistance will be provided only if the landowner selects one of the alternative conservation treatments for installation; or at the request of the landowners, NRCS may initiate consultation with the Fish and Wildlife Service, National Marine Fisheries Service and/or California Department of Fish and Game. If the Environmental Evaluation indicates the action will not affect a listed species or result in adverse modification of critical habitat, consultation generally will not apply and usually would not be initiated. Document any special considerations for endangered species in the Practice Requirements Worksheet.

Some species are year-round residents in some streams, such as, freshwater shrimp. Other species, such as steelhead and salmon, utilize streams during various seasons. Be aware that during critical periods, such as spawning, eggs in gravels, and rearing of young may preclude activities in the stream that may directly affect the stream habitat during those periods. For example there should be no disturbance of stream gravel beds that may have eggs in them. That could include any equipment in the stream or even walking in the stream or work upstream that may result in sediment depositing in the gravel beds. Document any special considerations for endangered species in the Practice Requirements Worksheet.

Water Quantity

Mulching is the application of some material around plants and crops, and on areas which have been disturbed and require temporary protection. Mulching is used to control weeds, surface temperatures, erosion, and to retain moisture.

Mulching may improve microbial action in the soil surface, may improve infiltration, and may reduce runoff, erosion, and evaporation. Increased infiltration may result in soluble chemicals moving below the root zone.

1. Effects on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, and transpiration.
2. Variability of the practice's effects caused by seasonal weather variations.
3. Effects of increased cover on soil moisture.
4. Potential for changes in plant growth and transpiration because of changes in the soil water volume.

Water Quality

This practice may reduce the delivery of sediment and related chemicals to surface water by reducing runoff and erosion. The temperature of the surface runoff may be lowered.

1. Effects on erosion and the movement of sediment and soluble and sediment-attached substances carried by runoff.
2. Effects on the visual quality of downstream water resources.

PLANS AND SPECIFICATIONS

Plans and Specifications shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose.

Include the amount and type of mulch needed on the Practice Requirement Sheet along with all details needed for proper application.

OPERATION AND MAINTENANCE

The owner or operator will be responsible for operating all equipment safety and maintaining this practice. Planned mulching cover will be replaced as needed to maintain the amount of mulch during the required period.