

SOIL CONSERVATION SERVICE

WEST VIRGINIA

MULCHING

STANDARD

Definition

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

Purpose

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.

Effects on Water Quantity and Quality

Mulching may improve microbial action in the soil surface, may improve infiltration, and may reduce runoff, erosion, and evaporation. 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.

Planning Considerations

1. On areas subject to critical erosion, install necessary erosion control measures within areas to be mulched.
2. Provide adequate drainage, especially at the toe of slopes, where internal water movement may cause seeps or soil slippage.
3. Carry out construction activities so that erosion and air and water pollution will be minimized, especially off-site. State and local laws concerning pollution abatement shall be followed.

SPECIFICATIONS

Table 1 provides guidance for use of mulching materials. If required for the specific application, see Table 2 for anchoring methods and materials.

TABLE 1  
GUIDE TO MULCH MATERIALS

Mulch Material	Quality Standards	Application Rates		Remarks
		per 1000 Sq. Ft.	per Acre	
Hay or Straw	Air-dried; free of undesirable seeds & coarse materials	90-115 lbs or 2-3 bales	2.0-2.5 tons or 100-125 bales	Use straw where mulch effect is to be maintained for more than 3 months. Subject to wind blowing unless kept moist or tied down. Good for critical area erosion control. Spread uniformly, leave 10-20% of ground exposed. Excellent for seedbed protection until vegetation is established.
Compost or Manure	Well shredded, free of excessive coarse material	400-600 lbs.	8-10 tons	Use strawy manure where erosion control is needed. May create problem with weeds. Excellent moisture conservation. Resistant to wind blowing. Avoid using close to streams or water courses.
Wood Chips or Shavings	Green or air-dried. Free of objectionable coarse materials	460-920 lbs.	10-20 tons	Spread uniformly about 4 inches deep. Often used alone. Protect from washing on steep slopes. Excellent mulch around trees and shrubs. Potential termite problem adjacent to wood structures.
Sawdust, Green or Composted	Free from objectionable coarse material	83 cu. ft. for each 1" depth	--	Effective as a mulch around ornamentals, small fruits, and other nursery stock. Special application rates: fruit trees 5-7"; blueberries 6"; vegetables and flowers 2-3"; blackberries and raspberries 4-7"; strawberries 3". Resistant to wind blowing. Requires 30-35 lbs. n/ton to prevent N deficiency while decaying. One cu. ft. weighs 12-24 lbs.

TABLE 1 (CONTINUED)  
GUIDE TO MULCH MATERIALS

Mulch Material	Quality Standards	Application Rates		Remarks
		per 1000 Sq. Ft.	per Acre	
Peat Moss	Dried, compressed free of coarse materials	200-400 cu. ft.	--	Effective as a mulch around ornamentals. Subject to wind blowing unless kept wet. Excellent moisture holding capacity.
Gravel or Crushed Stone	Washed Size 3B or 3A	9 cu. yds.	--	Excellent permanent mulch often used alone for short slopes or around woody plants and ornamentals. Use 2B where subject to foot traffic.
Wood Fiber Hydro Mulch Fibers	Dyed green. No growth inhibiting factors	--	1000-2000 lbs.	Suited to short steep slopes inaccessible to straw mulching equipment. Used primarily to hold seed in place until germination occurs.
Wood Cellulose Recycled paper products	Dyed green. No growth inhibiting factors	--	1000 lbs.	Use only on short, low-gradient slopes and during optimum seeding dates. Used primarily to hold seed in place until germination occurs.
Excelsior Wood Fiber Mats	Interlocking web of excelsior fibers with mulch net backing on one side only	--	--	Use without additional mulch. Tie down as per manufacturing specifications. Good for establishing seedings on critical slopes, ditches, and waterways.

TABLE 2  
MULCH ANCHORING GUIDE

Anchoring Method or Material	Kind of Mulch to be Anchored	Application and Remarks
Peg and twine	Hay or straw	After mulching, divide areas into blocks approx. 1 sq. yed. in size. Drive 4-6 pegs per block to within 2" to 3" of soil surface. Secure mulch to surface by stretching twine between pegs in criss-cross pattern on each block. Secure around each peg with two or more turns. Drive pegs flush with soil where mowing is planned.
Mulch netting	Hay or straw	Sheet of light-weight paper, fiber or plastic. Use pegs or special staples to anchor netting and prevent blowing, according to manufacturers recommendations.
Asphalt emulsion	Hay or straw	Apply 150-200 gallons per acre. May be environmentally damaging due to its petroleum base. Air temperature must be above 50°F.
Chemical	Hay or straw	Apply according to manufacturer's instructions. Avoid application during rain. A 24 hour curing period is required and soil temperature must be higher than 45°F.
Mulch Anchoring Tool or disk (smooth or notched)	Hay or straw, manure compost	Apply mulch and pull a mulch anchoring tool over mulch. When a disc (smooth) is used, set in straight position and pull across slope with suitable power equipment. Mulch material should be "tucked" into soil surface about 3".