

Practice: 484 - Mulching

Scenario: #1 - Straw or Hay, Manual Application

Scenario Description: Manual application of straw/hay mulch or other other state approved natural material to reduce erosion, moderate soil temperature, conserve soil moisture and/or facilitate the establishment of vegetative cover.

Before Situation: Typical scenario ranges from a 0.1 to 1.0 acre disturbed site around a newly constructed structural practice to a 5-10 acre irrigated orchard/vineyard. Water quantity and soil moisture is a concern. The potential for soil erosion is high and mulch is needed to stabilize the soil, facilitate the establishment of vegetative cover.

After Situation: Straw mulch has been applied to areas needing mulch. Erosion and sedimentation is reduced, water and soil quality is protected, and vegetative cover is established. Soil moisture is conserved, energy use associated with irrigation is decreased.

Scenario Feature Measure: Area Covered by Mulch

Scenario Unit: Acre

Scenario Typical Size: 1

Total Scenario Cost: \$579.61

Scenario Cost/Unit: \$579.61

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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Labor

General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$26.15	10	\$261.52
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Equipment Installation

Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$21.74	0.5	\$10.87
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Materials

Straw	1237	Small grain straw (non organic and certified organic). Includes materials only.	Ton	\$122.89	2.5	\$307.23
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Scenario: #2 - Straw or Hay, Mechanical Application

Scenario Description: Mechanical application of straw/hay mulch using large round hay bales and a bale mulcher/processor. Practice will reduce erosion, moderate soil temperature, conserve soil moisture and/or facilitate the establishment of vegetative cover.

Before Situation: Potatoes or other crops are harvested too late to establish winter cover in northern regions. Harvest churns up soil from digging/harvest and ground is left bare through winter. Fall and spring rains, along with snow melt, cause excessive soil loss.

After Situation: Mulch is applied to fields using large round hay bales and a bale mulcher/processor. Erosion and sedimentation is reduced, water and soil quality is protected, and vegetative cover is established. Soil moisture is conserved, energy use associated with irrigation is decreased.

Scenario Feature Measure: Area Covered by Mulch

Scenario Unit: Acre

Scenario Typical Size: 10

Total Scenario Cost: \$2,346.49

Scenario Cost/Unit: \$234.65

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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Labor

Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$25.96	6	\$155.75
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Equipment Installation

Mulcher, straw blower	1305	Straw bale mulcher/blower to mechanically spread small or large straw bales. Labor not included.	Hour	\$44.62	3	\$133.85
Tractor, agricultural, 60 HP	963	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	\$24.72	6	\$148.33
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$21.74	3	\$65.22

Materials

Straw	1237	Small grain straw (non organic and certified organic). Includes materials only.	Ton	\$122.89	15	\$1,843.35
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Scenario: #3 - Aggregate

Scenario Description: Application of bark, wood chips, peat/sand mix or other state approved aggregate material where mulch is needed. Typically used to prevent erosion, improve vegetative cover, improve soil quality, or conserve soil moisture.

Before Situation: Vegetative cover is poor/declining. The potential for soil erosion is high and mulch is needed to stabilize the soil.

After Situation: Exposed soil is mulched with appropriate materials according to state specifications. Erosion and sedimentation is reduced, water and soil quality is protected.

Scenario Feature Measure: Area mulched

Scenario Unit: 1,000 Square Foot

Scenario Typical Size: 1

Total Scenario Cost: \$218.05

Scenario Cost/Unit: \$218.05

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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Labor

General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$26.15	0.5	\$13.08
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Equipment Installation

Aggregate, Wood Chips	1098	Includes materials, equipment and labor	Cubic Yard	\$24.08	8	\$192.61
Tractor, agricultural, 60 HP	963	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	\$24.72	0.5	\$12.36

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Scenario: #4 - Erosion Control Blanket

Scenario Description: Installation of erosion control blanket on critical areas with steep slopes, grassed waterways or diversions. Blanket is typically made of coconut coir, wood fiber, or straw and is typically covered on both sides with polypropylene netting. Used to help control erosion and establish vegetative cover.

Before Situation: There are areas of concentrated flow and a grassed waterway is being installed. Soil erosion is a concern and there is little to no vegetation.

After Situation: The erosion control blanket is placed on concentrated flow areas and secured with ground staples. Soil erosion is minimized and vegetative cover is established.

Scenario Feature Measure: Area Covered by Mulch

Scenario Unit: 1,000 Square Foot

Scenario Typical Size: 10

Total Scenario Cost: \$1,578.75

Scenario Cost/Unit: \$157.87

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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Labor

General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$26.15	6	\$156.91
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Equipment Installation

Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$21.74	2	\$43.48
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Materials

Erosion Control Blanket, biodegradable	1213	Biodegradable erosion control blanket, typically a composite of natural fibers with reinforcing polymer netting. Materials and shipping only.	Square Yard	\$1.24	1111	\$1,378.36
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Scenario: #5 - Synthetic Material

Scenario Description: Installation of geotextile, biodegradable plastic, polyethylene plastic, or other state approved synthetic mulch to conserve soil moisture, moderate soil temperature and provide erosion control. Payment based based on total acres mulched (not the actual area of the rows that are mulched). Assumes 4 ft wide material with 6 feet between rows providing 7260 ft of material per acre.

Before Situation: Site conditions vary. Typically scenarios include new tree and shrub plantings, irrigated orchards or vineyards, or annual and perennial specialty crops. Water quantity and soil moisture is a concern.

After Situation: Synthetic mulch is applied in rows with a mulch layer or by other mechanized means. Soil moisture is conserved, energy use associated with irrigation is decreased.

Scenario Feature Measure: Acres Mulched

Scenario Unit: Acre

Scenario Typical Size: 1

Total Scenario Cost: \$328.75

Scenario Cost/Unit: \$328.75

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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Materials

Mulch, biodegradable plastic, 0.8 mil	1304	0.8 mil starch-based biodegradable plastic mulch, with anchoring. Includes materials and shipping only.	Square Yard	\$0.31	1075	\$328.75
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Scenario: #6 - Tree and Shrub

Scenario Description: Weed barrier fabric or other suitable natural or synthetic mulch is installed with a new tree and shrub planting. Typically used to prevent erosion and conserve soil moisture during the installation of conservation practices. Rate is per tree/shrub.

Before Situation: Site conditions vary. Typical scenario is an installation of 100 native trees and shrubs to enhance wildlife habitat. Sites are often remote and trees may not be planted in rows, requiring each tree to be mulched individually

After Situation: Weed barrier squares are installed around individual trees and shrubs. Soil moisture is conserved and establishment of trees/shrubs is improved. Erosion is minimized.

Scenario Feature Measure: Number of Trees Mulched

Scenario Unit: Each

Scenario Typical Size: 100

Total Scenario Cost: \$128.82

Scenario Cost/Unit: \$1.29

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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Equipment Installation

Geotextile, woven	42	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	\$2.58	50	\$128.82
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