

**Practice: 340 - Cover Crop**

**Scenario # 1 Cover Crop-Chemical Kill**

**Scenario Description:**

**Louisiana**

Typically a small grain or small grain-legume mix (may also use forage sorghum, radishes, turnips, buckwheat, etc) will be planted as a cover crop immediately after harvest of a row crop, and will be followed by a row crop that will utilize the residue as a mulch. This scenario assumes that seed will be planted with a no-till drill. The cover crop should be allowed to generate as much biomass as possible, without delaying planting of the following crop. The cover crop will be terminated using an approved herbicide a minimum of 3 weeks prior to planting the subsequent crop.

**Before Practice Situation:**

Row crops such as corn, soybeans, or cotton are grown and harvested in mid-late fall. Fields are disked immediately following harvest, with rows in some fields being hipped for drainage. Residue amounts after harvest average 30% or less, resulting in bare soil being exposed to wind erosion and/or intense rainfall during the fall, winter, and early spring. Over the winter residue degrades and sediment/nutrient runoff from fields increases. Sheet and rill erosion occurs with visible rills by spring. Runoff from the fields flows into streams, water courses or other water bodies causing degradation to the receiving waters. Soil health (soil organic matter) declines over time as a result of tillage practices, low residue crops, and long periods of bare soil.

**After Practice Situation:**

Typically, within 30 days after harvest of row crop, fields are planted with a small grain-legume mix cover crop, typically rye and clover. The average field size is 40 acres. Typically, the cover crop is seeded with a no-till drill. No additional fertilizer is applied with the cover crop. The cover crop provides soil cover by late fall, throughout the winter, and into the early spring. Runoff and erosion are reduced and no rills are visible on the soil surface in the spring. Wind erosion is reduced by standing residues. The cover crop is terminated with an approved herbicide prior to spring planting as late as feasible to maximize plant biomass production. Over time, soil health is improved due to the additional biomass, ground cover, soil infiltration, and plant diversity introduced to the cropping system. Cover crop residues left on the surface may maximize weed control by increasing allelopathic and mulching effect.

**Scenario Feature Measure:**

Area planted

**Scenario Typical Size:**

40	Acre	Unit Cost	\$75.12
----	------	-----------	---------

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Crimson Clover ( <i>Trifolium incarnatum</i> )	520	Pound	\$2.25	\$1,170.00
Materials	Herbicide, Glyphosate	40	Acre	\$11.04	\$441.60
Materials	Rye, Cereal ( <i>Secale cereale</i> L.)	2400	Pound	\$0.30	\$720.00
Equip./Install.	Chemical, ground application	40	Acre	\$3.93	\$157.20
Equip./Install.	Seeding Operation, No Till/Grass Drill	40	Acre	\$12.90	\$516.00
				Total Cost:	\$3,004.80

**Practice: 340 - Cover Crop**

**Scenario # 2 Legume-N Fixation**

**Scenario Description:**

**Louisiana**

A legume will be planted as a cover crop immediately after harvest of a row crop, and will be followed by a row crop that will utilize fixed nitrogen and cover crop biomass as a mulch. This scenario assumes that seed will be planted with a no-till drill. Legume seeds must be inoculated with the proper inoculant prior to planting. The cover crop should be allowed to reach early to mid-bloom before it is terminated, using an approved herbicide, in order to maximize nitrogen fixation. The legume will promote biological nitrogen fixation and reduce energy use by reducing the need for commercial nitrogen fertilizer in following crops.

**Before Practice Situation:**

Row crops such as corn, soybeans, or cotton are grown and harvested in mid-late fall. Fields are disked immediately following harvest, with some fields being hipped for drainage. Residue amounts after harvest average 30% or less, resulting in bare soil being exposed to intense rainfall during the fall, winter, and early spring. Over the winter residue degrades and sediment/nutrient runoff from fields increases. Sheet and rill erosion occurs with visible rills by spring. Runoff from the fields flows into streams, water courses or other water bodies causing degradation to the receiving waters. Soil health (soil organic matter) declines over time as a result of tillage practices and long periods of bare soil. Only commercial nitrogen fertilizer is used for following crops.

**After Practice Situation:**

Typically, within 30 days after harvest of row crop, fields are planted with a small grain-legume mix cover crop, typically rye and clover. The average field size is 40 acres. Typically, the cover crop is seeded with a no-till drill. No additional fertilizer is applied with the cover crop. The cover crop provides soil cover by late fall, throughout the winter, and into the early spring. Runoff and erosion are reduced and no rills are visible on the soil surface in the spring. Wind erosion is reduced by standing residues. The cover crop is terminated with an approved herbicide prior to spring planting as late as feasible to maximize plant biomass production. Over time, soil health is improved due to the additional biomass, ground cover, soil infiltration, and plant diversity introduced to the cropping system. Cover crop residues left on the surface may maximize weed control by increasing allelopathic and mulching effect.

**Scenario Feature Measure:**

Area planted

**Scenario Typical Size:**

40	Acre	Unit Cost	\$57.12
----	------	-----------	---------

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Crimson Clover ( <i>Trifolium incarnatum</i> )	520	Pound	\$2.25	\$1,170.00
Materials	Herbicide, Glyphosate	40	Acre	\$11.04	\$441.60
Equip./Install.	Chemical, ground application	40	Acre	\$3.93	\$157.20
Equip./Install.	Seeding Operation, No Till/Grass Drill	40	Acre	\$12.90	\$516.00
				Total Cost:	\$2,284.80

**Practice: 340 - Cover Crop**

**Scenario # 3 Orchard/Vineyard Annual Cover Crop**

**Scenario Description:**

**Louisiana**

Orchard or Vineyard annual cover crop is planted which is destroyed by field operations occurring spring through fall. Cover crops are used to reduce erosion from wind and water, increase soil organic matter content, capture and recycle or redistribute nutrients in the soil profile, promote biological nitrogen fixation and reduce energy use, increase biodiversity, suppress weeds, manage soil moisture, and minimize and reduce soil compaction. Planted annually in orchards and vineyards. 60% cover crop per acre.

**Before Practice Situation:**

Orchards or vineyards with bare soil between vine/tree rows. Bare soil is exposed to wind erosion and/or intense rainfall during the fall, winter, and early spring. Over the winter sediment/nutrient runoff from orchards/vineyards increases. Sheet and rill erosion occurs with visible rills by spring. Runoff from the fields flows into streams, water courses or other water bodies causing degradation to the receiving waters. Soil health (soil organic matter) declines over time as a result of long periods of bare soil.

**After Practice Situation:**

Typically, within 30 days after harvest of row crop, fields are planted with a small grain-legume mix cover crop, typically rye and clover. The average field size is 40 acres. Typically, the cover crop is seeded with a no-till drill. No additional fertilizer is applied with the cover crop. The cover crop provides soil cover by late fall, throughout the winter, and into the early spring. Runoff and erosion are reduced and no rills are visible on the soil surface in the spring. Wind erosion is reduced by standing residues. The cover crop is terminated with an approved herbicide prior to spring planting as late as feasible to maximize plant biomass production. Over time, soil health is improved due to the additional biomass, ground cover, soil infiltration, and plant diversity introduced to the cropping system. Cover crop residues left on the surface may maximize weed control by increasing allelopathic and mulching effect.

**Scenario Feature Measure:**

Area planted

<b>Scenario Typical Size:</b>	10	Acre	Unit Cost	\$126.30
-------------------------------	----	------	-----------	----------

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Crimson Clover ( <i>Trifolium incarnatum</i> )	312	Pound	\$2.25	\$702.00
Materials	Rye, Cereal ( <i>Secale cereale</i> L.)	1440	Pound	\$0.30	\$432.00
Equip./Install.	Seeding Operation, No Till/Grass Drill	10	Acre	\$12.90	\$129.00
				Total Cost:	\$1,263.00

**Practice: 340 - Cover Crop**

**Scenario # 4 Organic Cover Crop**

**Scenario Description:**

**Louisiana**

Typically a small grain or small grain-legume mix (may also use forage sorghum, radishes, turnips, buckwheat, etc) will be planted as a cover crop immediately after harvest of an organically grown crop, and will be followed by an organically grown crop that will utilize the residue as a mulch. This scenario assumes that seed will be planted with a no-till drill. The cover crop should be allowed to generate as much biomass as possible, without delaying planting of the following crop. The cover crop will be terminated using a mechanical kill method (mowing, rolling, undercutting, etc.), a minimum of 3 weeks prior to planting the subsequent crop. This scenario **REQUIRES** use of Certified Organic Seed.

**Before Practice Situation:**

Organically grown crops such as various vegetable and fruit crops (along with organically produced row crops) are grown and harvested in mid-late fall. Fields are disked immediately following harvest. Residue amounts after harvest average 30% or less, resulting in bare soil being exposed to wind erosion and/or intense rainfall during the fall, winter, and early spring. Over the winter residue degrades and sediment/nutrient runoff from fields increases. Sheet and rill erosion occurs with visible rills by spring. Runoff from the fields flows into streams, water courses or other water bodies causing degradation to the receiving waters. Soil health (soil organic matter) declines over time as a result of tillage practices, low residue crops, and long periods of bare soil.

**After Practice Situation:**

Typically, within 30 days after harvest of row crop, fields are planted with a small grain-legume mix cover crop, typically rye and clover. The average field size is 40 acres. Typically, the cover crop is seeded with a no-till drill. No additional fertilizer is applied with the cover crop. The cover crop provides soil cover by late fall, throughout the winter, and into the early spring. Runoff and erosion are reduced and no rills are visible on the soil surface in the spring. Wind erosion is reduced by standing residues. The cover crop is terminated with an approved herbicide prior to spring planting as late as feasible to maximize plant biomass production. Over time, soil health is improved due to the additional biomass, ground cover, soil infiltration, and plant diversity introduced to the cropping system. Cover crop residues left on the surface may maximize weed control by increasing allelopathic and mulching effect.

**Scenario Feature Measure:**

Area planted

**Scenario Typical Size:**

25	Acre	Unit Cost	\$135.14
----	------	-----------	----------

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Certified Organic, Crimson Clover ( <i>Trifolium incarnatum</i> )	325	Pound	\$5.35	\$1,738.75
Materials	Certified Organic, Rye, Cereal ( <i>Secale cereale</i> L.)	1500	Pound	\$0.58	\$870.00
Equip./Install.	Mechanical weed control, Vegetation termination	25	Acre	\$17.89	\$447.25
Equip./Install.	Seeding Operation, No Till/Grass Drill	25	Acre	\$12.90	\$322.50
				Total Cost:	\$3,378.50