

Practice: 340 - Cover Crop

Scenario: #3 - Mix

Scenario Description:

Typically a grain-legume mix (4 to 5 species - may also use forage sorghum, radishes, turnips, buckwheat, etc) will be planted as a cover crop 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 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 Situation:

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. The cover crop is drilled. 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 Unit: Acre

Scenario Typical Size: 40

Scenario Cost: \$4,045.20

Scenario Cost/Unit: \$101.13

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Chemical, ground application	948	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$5.67	40	\$226.80
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$19.75	40	\$790.00
Materials						
Five Species Mix, Cool Season, Annual Grasses and Legumes	2320	Cool season, introduced grass and legume mix. Includes material and shipping only.	Acre	\$60.08	40	\$2,403.20
Herbicide, Glyphosate	334	A broad-spectrum, non-selective systemic herbicide. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	\$15.63	40	\$625.20

Practice: 340 - Cover Crop

Scenario: #4 - Legume-N Fixation

Scenario Description:

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 drilled. 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 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 Situation:

Within 30 days after harvest fields are planted with a legume cover crop, typically a clover or vetch species. The average field size is 40 acres. The cover crop is drilled. No 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. 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, 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 Unit: Acre

Scenario Typical Size: 40

Scenario Cost: \$3,769.20

Scenario Cost/Unit: \$94.23

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$19.75	40	\$790.00
Chemical, ground application	948	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$5.67	40	\$226.80
Materials						
Herbicide, Glyphosate	334	A broad-spectrum, non-selective systemic herbicide. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	\$15.63	40	\$625.20
One Species, Warm Season, Annual Legume	2321	Native, warm season annual legume. Includes material and shipping only.	Acre	\$53.18	40	\$2,127.20

Practice: 340 - Cover Crop

Scenario: #5 - Organic Cover Crop

Scenario Description:

Typically a small grain (single species) will be planted as a cover crop 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 drilled. 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 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 Situation:

Within 30 days after harvest of organic crop, fields are planted with a small grain-legume mix cover crop, typically rye and clover. The average field size is 25 acres. The cover crop is drilled. 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. The cover crop is terminated with using a mechanical kill method (mowing, rolling, undercutting, etc.), 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, and plant diversity introduced to the cropping system. Wind erosion is reduced by standing residues. Cover crop residues left on the surface may maximize weed control by increasing allelopathic and mulching effect.

Scenario Feature Measure: Area planted

Scenario Unit: Acre

Scenario Typical Size: 25

Scenario Cost: \$2,507.00

Scenario Cost/Unit: \$100.28

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Mechanical weed control, Vegetation termination	957	Mechanical operations, Includes: Roller/crimper, mower, shredder, etc. Includes equipment, power unit and labor costs.	Acre	\$18.99	25	\$474.75
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$19.75	25	\$493.75
Materials						
Certified Organic, One Species, Cool Season, Annual grass	2338	Certified organic cool season annual grass. Includes material and shipping only.	Acre	\$61.54	25	\$1,538.50

Practice: 340 - Cover Crop

Scenario: #6 - Organic Legume

Scenario Description:

Typically a legume will be planted as a cover crop within 30 days of 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 drilled. 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 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 Situation:

Within 30 days after harvest of organic crop, fields are planted with a small grain-legume mix cover crop, typically rye and clover. The average field size is 25 acres. The cover crop is drilled. 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. The cover crop is terminated with using a mechanical kill method (mowing, rolling, undercutting, etc.), 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, and plant diversity introduced to the cropping system. Wind erosion is reduced by standing residues. Cover crop residues left on the surface may maximize weed control by increasing allelopathic and mulching effect.

Scenario Feature Measure: Area planted

Scenario Unit: Acre

Scenario Typical Size: 25

Scenario Cost: \$4,018.75

Scenario Cost/Unit: \$160.75

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Mechanical weed control, Vegetation termination	957	Mechanical operations, Includes: Roller/crimper, mower, shredder, etc. Includes equipment, power unit and labor costs.	Acre	\$18.99	25	\$474.75
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$19.75	25	\$493.75
Materials						
Certified Organic, One Species, Cool Season, Annual Legume	2337	Certified organic cool season annual legume. Includes material and shipping only.	Acre	\$122.01	25	\$3,050.25