

Practice: 512 - Forage and Biomass Planting

Scenario: #1 - Interseeding Legumes and/or forbs

Scenario Description:

Interseed legumes and/or forbs into an existing grass stand for the purpose of increasing plant diversity, soil quality and fertility, and plant health and enhancing the quality of forage. Scenario is appropriate for conventional production. Payment includes seed, seeding and fertility for interseeding establishment.

Before Situation:

Existing grass stand that needs additional species diversity.

After Situation:

A more diverse grass stand provides improved forage quality and availability, and improved soil condition. Payment scenario is based on red and ladino clover interseeded into a 20 acre cool season grass stand. Inputs are based on medium to low existing fertility.

Scenario Feature Measure: Acres of Forage and Biomass Planting

Scenario Unit: Acre

Scenario Typical Size: 20

Scenario Cost: \$4,316.80

Scenario Cost/Unit: \$215.84

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.52	20	\$130.40
Lime application	953	Lime application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$9.73	20	\$194.60
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$20.46	20	\$409.20
Materials						
Two Species Mix, Cool Season Annual (1 grass and 1 legume)	2314	Cool season annual grass and legume mix. Includes material and shipping only.	Acre	\$54.10	20	\$1,082.00
Phosphorus, P2O5	73	Price per pound of P2O5 supplied by Superphosphate. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.65	700	\$455.00
Potassium, K2O	74	K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.50	2000	\$1,000.00
Lime, ENM	75	Fertilizer: Limestone Spread on field.	Ton	\$26.14	40	\$1,045.60

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Scenario: #2 - Interseed Legumes and/or forbs Organic

Scenario Description:

Interseed legumes and/or forbs into an existing grass stand for the purpose of increasing plant diversity, soil quality and fertility, and plant health and enhancing the quality of forage. Scenario is appropriate for organic production. Payment includes seed, seeding and fertility for interseeding establishment.

Before Situation:

Existing grass stand that needs additional species diversity.

After Situation:

A more diverse grass stand provides improved forage quality and availability, and improved soil condition. Payment scenario is based on red and ladino clover interseeded into a 20 acre cool season grass stand. Inputs are based on medium to low existing fertility.

Scenario Feature Measure: Acres of Forage and Biomass Planting

Scenario Unit: Acre

Scenario Typical Size: 20

Scenario Cost: \$3,982.20

Scenario Cost/Unit: \$199.11

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	\$20.46	20	\$409.20
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.52	20	\$130.40
Lime application	953	Lime application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$9.73	20	\$194.60
Materials						
Lime, ENM	75	Fertilizer: Limestone Spread on field.	Ton	\$26.14	40	\$1,045.60
Phosphorus, Organic	267	ORGANIC Phosphorus	Pound	\$0.30	700	\$210.00
Potassium, Organic	268	ORGANIC Potassium	Pound	\$0.30	2000	\$600.00
Certified Organic, Three Species Mix, Cool Season, Perennial Grasses and Legumes	2340	Certified organic cool season perennial grass and legume mix. Includes material and shipping only.	Acre	\$69.62	20	\$1,392.40

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Scenario: #3 - Introduced Grass Establishment or Renovation

Scenario Description:

Establishing a new stand or renovating a poor stand to introduced grass, or grass with legumes and/or forbs to improve or maintain livestock/wildlife nutrition and health, extend the length of the grazing season, and provide soil cover to reduce erosion. Scenario is appropriate for conventional production. Payment includes site preparation, seed, seeding fertilizer, lime, and foregone income for loss of production during establishment/renovation

Before Situation:

Existing grass stand does not meet the forage demands, particularly during during periods of low forage production. Resource concerns may include undesirable plant productivity and health, inadequate feed and forage for livestock, soil erosion, and soil quality.

After Situation:

Establish introduced grass and legume mix stand to improve livestock nutrition through improved forage quality and availability, and improved soil condition. Payment scenario is based on converting an existing poor condition sod to introduced grass/legume/forb mix using mechanical or chemical activities.

Scenario Feature Measure: Acres of Forage and Biomass Planting

Scenario Unit: Acre

Scenario Typical Size: 20

Scenario Cost: \$5,474.80

Scenario Cost/Unit: \$273.74

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	\$20.46	20	\$409.20
Lime application	953	Lime application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$9.73	20	\$194.60
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.52	20	\$130.40
Chemical, ground application	948	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$5.88	20	\$117.60
Foregone Income						
Fl, Hay, General Grass	2122	General Grass Hay is Primary Land Use	Ton	\$41.38	20	\$827.60
Materials						
Phosphorus, P2O5	73	Price per pound of P2O5 supplied by Superphosphate. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.65	860	\$559.00
Potassium, K2O	74	K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.50	1660	\$830.00
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	20	\$312.60
Four Species Mix, Cool Season, Introduced Perennial (2 grasses, 2 legumes)	2319	Cool season, introduced grass and legume mix. Includes material and shipping only.	Acre	\$21.41	20	\$428.20
Lime, ENM	75	Fertilizer: Limestone Spread on field.	Ton	\$26.14	40	\$1,045.60
Nitrogen (N), Urea	71	Price per pound of N supplied by Urea. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.62	1000	\$620.00

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Scenario: #4 - Introduced Grass Establishment or Renovation Organic

Scenario Description:

Establishing a new stand or renovating a poor stand to introduced grass, or grass with legumes and/or forbs to improve or maintain livestock/wildlife nutrition and health, extend the length of the grazing season, and provide soil cover to reduce erosion. Scenario is appropriate for organic production. Payment includes site preparation, seed, seeding fertilizer, lime, and foregone income for loss of production during establishment/renovation

Before Situation:

Existing grass stand does not meet the forage demands, particularly during during periods of low forage production. Resource concerns may include undesirable plant productivity and health, inadequate feed and forage for livestock, soil erosion, and soil quality.

After Situation:

Establish introduced grass and legume mix stand to improve livestock nutrition through improved forage quality and availability, and improved soil condition. Payment scenario is based on converting an existing poor condition sod to introduced grass/legume/forb mix using mechanical or chemical activities.

Scenario Feature Measure: Acres of Forage and Biomass Planting

Scenario Unit: Acre

Scenario Typical Size: 20

Scenario Cost: \$5,530.40

Scenario Cost/Unit: \$276.52

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Lime application	953	Lime application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$9.73	20	\$194.60
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$20.46	20	\$409.20
Tillage, Light	945	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	\$10.67	40	\$426.80
Foregone Income						
Fl, Hay, General Grass, Organic	2200	Organic general Grass Hay is Primary Land Use	Ton	\$47.59	20	\$951.80
Materials						
Nitrogen, Organic	266	ORGANIC Nitrogen	Pound	\$0.30	1000	\$300.00
Certified Organic, Three Species Mix, Cool Season, Perennial Grasses and Legumes	2340	Certified organic cool season perennial grass and legume mix. Includes material and shipping only.	Acre	\$69.62	20	\$1,392.40
Potassium, Organic	268	ORGANIC Potassium	Pound	\$0.30	2000	\$600.00
Phosphorus, Organic	267	ORGANIC Phosphorus	Pound	\$0.30	700	\$210.00
Lime, ENM	75	Fertilizer: Limestone Spread on field.	Ton	\$26.14	40	\$1,045.60

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Scenario: #5 - Native Grass Establishment or Renovation - no fertility

Scenario Description:

Establishing a new stand or renovating a poor stand to native grass, or grass with legumes and/or forbs to improve or maintain livestock/wildlife nutrition and health, extend the length of the grazing season, and provide soil cover to reduce erosion. Scenario is appropriate for conventional production on sites where fertility for establishment is adequate or it is determined that lime is all that is needed to enhance available nutrients. Payment includes site preparation, seed, seeding, lime, and foregone income for loss of production during establishment/renovation

Before Situation:

Existing grass stand does not meet the forage demands, particularly during during periods of low forage production. Resource concerns may include undesirable plant productivity and health, inadequate feed and forage for livestock, soil erosion, and soil quality.

After Situation:

Establish native grass and legume and/or forbs mix stand to improve livestock nutrition through improved forage quality and availability, and improved soil condition. Payment scenario is based on converting an existing poor condition sod to native grass/legume/forb mix using mechanical or chemical activities.

Scenario Feature Measure: Acres of Forage and Biomass Planting

Scenario Unit: Acre

Scenario Typical Size: 20

Scenario Cost: \$8,154.40

Scenario Cost/Unit: \$407.72

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	\$5.88	20	\$117.60
Lime application	953	Lime application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$9.73	20	\$194.60
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$20.46	20	\$409.20
Foregone Income						
FI, Hay, General Grass	2122	General Grass Hay is Primary Land Use	Ton	\$41.38	40	\$1,655.20
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	20	\$312.60
Three plus Species Mix, Warm Season, Native Perennial	2327	Native, warm season perennial grass. Includes material and shipping only.	Acre	\$220.98	20	\$4,419.60
Lime, ENM	75	Fertilizer: Limestone Spread on field.	Ton	\$26.14	40	\$1,045.60

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Scenario: #6 - Native Grass Establishment or Renovation - no fertility Organic

Scenario Description:

Establishing a new stand or renovating a poor stand to native grass, or grass with legumes and/or forbs to improve or maintain livestock/wildlife nutrition and health, extend the length of the grazing season, and provide soil cover to reduce erosion. Scenario is appropriate for organic production on sites where fertility for establishment is adequate or it is determined that lime is all that is needed to enhance available nutrients. Payment includes site preparation, seed, seeding, lime and foregone income for loss of production during establishment/renovation

Before Situation:

Existing grass stand does not meet the forage demands, particularly during during periods of low forage production. Resource concerns may include undesirable plant productivity and health, inadequate feed and forage for livestock, soil erosion, and soil quality.

After Situation:

Establish native grass and legume and/or forbs mix stand to improve livestock nutrition through improved forage quality and availability, and improved soil condition. Payment scenario is based on converting an existing poor condition sod to native grass/legume/forb mix using mechanical or chemical activities.

Scenario Feature Measure: Acres of Forage and Biomass Planting

Scenario Unit: Acre

Scenario Typical Size: 20

Scenario Cost: \$8,399.40

Scenario Cost/Unit: \$419.97

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Lime application	953	Lime application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$9.73	20	\$194.60
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$20.46	20	\$409.20
Tillage, Light	945	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	\$10.67	40	\$426.80
Foregone Income						
FI, Hay, General Grass, Organic	2200	Organic general Grass Hay is Primary Land Use	Ton	\$47.59	40	\$1,903.60
Materials						
Three plus Species Mix, Warm Season, Native Perennial	2327	Native, warm season perennial grass. Includes material and shipping only.	Acre	\$220.98	20	\$4,419.60
Lime, ENM	75	Fertilizer: Limestone Spread on field.	Ton	\$26.14	40	\$1,045.60

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Scenario: #9 - Pasture Renovation Utilizing Interim Seeding

Scenario Description:

Renovation of an existing pasture where an interim stand is established for one year prior to the perennial stand being established. Scenario is appropriate for renovating an existing stand of endophyte infected fescue using the spray - smother - spray technique (spray existing grass before heading in early spring, plant a smother crop, spray smother crop in the fall, plant new grass stand into the stubble). Scenario is also appropriate for situations where any interim species is established and then the perennial is seeded after. Payment includes chemical operations, interim crop establishment and termination, and seeding of new renovated grass stand, including fertilizer and lime needed for a successful establishment.

Before Situation:

Existing grass stand is primarily endophyte infected fescue or unwanted vegetative cover in decreased animal health and productivity.

After Situation:

Stand is renovated without the loss of production. Annual grass planted as a smother crop would be grazed, extending the grazing season. Stand is renovated to a non-endophyte introduced grass/legume stand using the spray-smother-spray technique.

Scenario Feature Measure: Acres of Forage and Biomass Planting

Scenario Unit: Acre

Scenario Typical Size: 20

Scenario Cost: \$7,396.20

Scenario Cost/Unit: \$369.81

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	\$5.88	40	\$235.20
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.52	20	\$130.40
Lime application	953	Lime application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$9.73	20	\$194.60
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$20.46	40	\$818.40
Foregone Income						
Fl, Hay, General Grass	2122	General Grass Hay is Primary Land Use	Ton	\$41.38	20	\$827.60
Materials						
Phosphorus, P2O5	73	Price per pound of P2O5 supplied by Superphosphate. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.65	860	\$559.00
Nitrogen (N), Urea	71	Price per pound of N supplied by Urea. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.62	1000	\$620.00
Potassium, K2O	74	K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.50	1660	\$830.00
Lime, ENM	75	Fertilizer: Limestone Spread on field.	Ton	\$26.14	40	\$1,045.60
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
Two Species Mix, Cool Season Annual (1 grass and 1 legume)	2314	Cool season annual grass and legume mix. Includes material and shipping only.	Acre	\$54.10	20	\$1,082.00
Four Species Mix, Cool Season, Introduced Perennial (2 grasses, 2 legumes)	2319	Cool season, introduced grass and legume mix. Includes material and shipping only.	Acre	\$21.41	20	\$428.20

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Scenario: #10 - Introduced Perennial & Native Grass Mix, foregone income

Scenario Description:

Establish or reseed adapted introduced grasses and at least one native species to improve or maintain livestock/wildlife nutrition and health extend the length of the grazing season, and provide soil cover to reduce erosion. Used for either conventional or no-till seeding of grasses for pasture, hayland, and wildlife openings. Native grass species which have a significantly greater cost than introduced species comprise one third of the grass mixture. This practice may be utilized for organic or regular production. This scenario assumes seed, equipment and labor for seed bed prep, tillage, seeding. The land being seeded was previously cropland with a typical rotation of corn and soybeans.

Before Situation:

Land currently being cropped. Resource concerns may include undesirable plant productivity and health, inadequate feed and forage for livestock, soil erosion and soil quality.

After Situation:

Suitable species are established to improve forage quality and quantity and reduce soil erosion on cropland, hayland, pasture, and/or biomass production.

Scenario Feature Measure: Acres of Forage and Biomass Planting

Scenario Unit: Acre

Scenario Typical Size: 20

Scenario Cost: \$10,227.90

Scenario Cost/Unit: \$511.40

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Tillage, Light	945	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	\$10.67	20	\$213.40
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$20.46	20	\$409.20
Foregone Income						
FI, Corn Dryland	1959	Dryland Corn is Primary Crop	Acre	\$437.76	10	\$4,377.60
FI, Soybeans Dryland	1961	Dryland Soybeans is Primary Crop	Acre	\$430.43	10	\$4,304.30
Materials						
Four Species Mix, Cool Season, Introduced Perennial (2 grasses, 2 legumes)	2319	Cool season, introduced grass and legume mix. Includes material and shipping only.	Acre	\$21.41	10	\$214.10
One Species, Warm Season, Native Perennial Grass	2322	Native, warm season perennial grass. Includes material and shipping only.	Acre	\$70.93	10	\$709.30