

**Practice: 512 - Forage and Biomass Planting**

**Scenario: #1 - Native Perennial Grass (1 sp)**

**Scenario Description:**

Establish or reseed adapted perennial native grasses 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 native grasses for pasture, hayland, and wildlife openings. This practice may be utilized for organic or regular production. This scenario assumes fertilizer, seed, equipment and labor for seed bed prep, tillage, seeding, and spreading.

**Before Situation:**

Poorly managed/degraded pasture land or cropland being converted to pasture and/or hay.

**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: 30**

**Scenario Cost: \$10,252.99**

**Scenario Cost/Unit: \$341.77**

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$18.24	30	\$547.20
Lime application	953	Lime application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$8.67	30	\$260.10
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$5.80	30	\$174.00
Chemical, ground application	948	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$5.24	30	\$157.20
<b>Labor</b>						
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	\$17.54	8	\$140.32
<b>Materials</b>						
One Species, Warm Season, Native Perennial Grass	2322	Native, warm season perennial grass. Includes material and shipping only.	Acre	\$65.98	30	\$1,979.40
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	\$15.83	30	\$474.90
Test, Soil Test, Standard	299	Includes materials, shipping, labor, and equipment costs.	Each	\$9.36	1	\$9.36
Potassium, K2O	74	K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.29	1500	\$435.00
Lime, ENM	75	Fertilizer: Limestone Spread on field.	Ton	\$90.38	60	\$5,422.80
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	\$0.28	1500	\$420.00
<b>Mobilization</b>						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$232.71	1	\$232.71

**Practice: 512 - Forage and Biomass Planting**

**Scenario: #2 - Native Perennial 2 or more species**

**Scenario Description:**

Establish or reseed with 2 or more adapted perennial native warm season grasses 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 perennial native warm season grasses for pasture, hayland, and wildlife openings. This practice may be utilized for organic or regular production. This scenario assumes fertilizer, seed, equipment and labor for seed bed prep, tillage, seeding, and spreading.

**Before Situation:**

Existing stand of perennial grasses or monoculture or no grasses present. Resource concerns may include undesirable plant productivity and health, inadequate feed and forage for livestock, soil erosion and soil quality.

**After Situation:**

Suitable NWSG 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: 30**

**Scenario Cost: \$14,551.99**

**Scenario Cost/Unit: \$485.07**

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
	341				30	
<b>Equipment/Installation</b>						
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$18.24	30	\$547.20
Tillage, Light	945	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	\$9.52	30	\$285.60
Lime application	953	Lime application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$8.67	30	\$260.10
Chemical, ground application	948	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$5.24	30	\$157.20
<b>Labor</b>						
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	\$17.54	8	\$140.32
<b>Materials</b>						
Three plus Species Mix, Warm Season, Native Perennial	2327	Native, warm season perennial grass. Includes material and shipping only.	Acre	\$205.56	30	\$6,166.80
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	\$15.83	30	\$474.90
Test, Soil Test, Standard	299	Includes materials, shipping, labor, and equipment costs.	Each	\$9.36	1	\$9.36
Lime, ENM	75	Fertilizer: Limestone Spread on field.	Ton	\$90.38	60	\$5,422.80
Potassium, K2O	74	K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.29	1500	\$435.00
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	\$0.28	1500	\$420.00
<b>Mobilization</b>						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$232.71	1	\$232.71

**Practice: 512 - Forage and Biomass Planting**

**Scenario: #3 - Introduced Cool Season Grasses**

**Scenario Description:**

Establish or reseed adapted perennial introduced cool season grasses and legumes 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 perennial introduced cool season grasses for pasture, hayland, and wildlife openings. This practice may be utilized for organic or regular production. This scenario assumes fertilizer, seed, equipment and labor for seed bed prep, tillage, seeding, and spreading.

**Before Situation:**

Poor or nonexistent stand of grass species. 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:** 30

**Scenario Cost:** \$9,460.69

**Scenario Cost/Unit:** \$315.36

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$18.24	30	\$547.20
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$5.80	30	\$174.00
Chemical, ground application	948	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$5.24	30	\$157.20
Tillage, Light	945	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	\$9.52	30	\$285.60
<b>Labor</b>						
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	\$17.54	8	\$140.32
<b>Materials</b>						
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	\$0.28	1500	\$420.00
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	\$19.92	30	\$597.60
Nitrogen (N), Ammonium Nitrate	69	Price per pound of N supplied by Ammonium Nitrate. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.47	1200	\$564.00
Lime, ENM	75	Fertilizer: Limestone Spread on field.	Ton	\$90.38	60	\$5,422.80
Test, Soil Test, Standard	299	Includes materials, shipping, labor, and equipment costs.	Each	\$9.36	1	\$9.36
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	\$15.83	30	\$474.90

**Materials**

Potassium, K2O	74	K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.29	1500	\$435.00
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**Mobilization**

Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$232.71	1	\$232.71
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**Practice: 512 - Forage and Biomass Planting**

**Scenario: #4 - Introduced Warm Season Grasses**

**Scenario Description:**

Establish or reseed adapted introduced warm season grasses 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 perennial introduced warm season grasses for pasture, hayland, and wildlife openings. This practice may be utilized for organic or regular production. This scenario assumes fertilizer, seed, equipment and labor for seed bed prep, tillage, seeding, and spreading.

**Before Situation:**

Existing stand of perennial grasses or monoculture or no grasses present. 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:** 30

**Scenario Cost:** \$10,651.69

**Scenario Cost/Unit:** \$355.06

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Tillage, Light	945	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	\$9.52	30	\$285.60
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$18.24	30	\$547.20
Chemical, ground application	948	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$5.24	30	\$157.20
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$5.80	30	\$174.00
<b>Labor</b>						
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	\$17.54	8	\$140.32
<b>Materials</b>						
One Species, Warm Season, Introduced Perennial Grass (seed or sprigs)	2323	Native, warm season perennial grass seed or sprig. Includes material and shipping only.	Acre	\$59.62	30	\$1,788.60
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	\$15.83	30	\$474.90
Test, Soil Test, Standard	299	Includes materials, shipping, labor, and equipment costs.	Each	\$9.36	1	\$9.36
Potassium, K2O	74	K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.29	1500	\$435.00
Lime, ENM	75	Fertilizer: Limestone Spread on field.	Ton	\$90.38	60	\$5,422.80
Nitrogen (N), Ammonium Nitrate	69	Price per pound of N supplied by Ammonium Nitrate. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.47	1200	\$564.00
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	\$0.28	1500	\$420.00
<b>Mobilization</b>						

**Mobilization**

Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$232.71	1	\$232.71
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**Practice: 512 - Forage and Biomass Planting**

**Scenario: #5 - Sprigging**

**Scenario Description:**

Sprigging new grasses with sprigging application for the purpose of providing forage, increasing plant diversity, soil quality and fertility, and plant health. This practice may be utilized for organic or regular production. This scenario assumes fertilizer, sprigs, equipment and labor for seed bed prep, tillage, sprigging ,and spreading.

**Before Situation:**

Poor or nonexistent stand of grass species. 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:** 30

**Scenario Cost:** \$12,874.39

**Scenario Cost/Unit:** \$429.15

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Ground sprigging	1101	Includes costs for equipment, power unit and labor.	Acre	\$85.97	30	\$2,579.10
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$5.80	30	\$174.00
Chemical, ground application	948	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$5.24	30	\$157.20
Tillage, Light	945	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	\$9.52	30	\$285.60
<b>Labor</b>						
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	\$17.54	8	\$140.32
<b>Materials</b>						
One Species, Warm Season, Native Perennial Grass	2322	Native, warm season perennial grass. Includes material and shipping only.	Acre	\$65.98	30	\$1,979.40
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	\$0.28	1500	\$420.00
Potassium, K2O	74	K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.29	1500	\$435.00
Lime, ENM	75	Fertilizer: Limestone Spread on field.	Ton	\$90.38	60	\$5,422.80
Nitrogen (N), Ammonium Nitrate	69	Price per pound of N supplied by Ammonium Nitrate. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.47	1200	\$564.00

**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	\$15.83	30	\$474.90
Test, Soil Test, Standard	299	Includes materials, shipping, labor, and equipment costs.	Each	\$9.36	1	\$9.36

**Mobilization**

Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$232.71	1	\$232.71
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**Practice: 512 - Forage and Biomass Planting**

**Scenario: #6 - Overseeding Legumes**

**Scenario Description:**

Establishment of legumes for the purpose of increasing plant diversity, soil quality and fertility, and plant health and enhancing the quality of forage. This practice may be utilized for organic or regular production. This scenario assumes fertilizer, seed, equipment and labor for seed bed prep, tillage, seeding, and spreading.

**Before Situation:**

Existing stand of perennial grasses or monoculture with no legumes present .

**After Situation:**

Legumes will be maintained through proper grazing management and improve plant diversity and soil quality.

**Scenario Feature Measure:** Acres of Forage and Biomass Planting

**Scenario Unit:** Acre

**Scenario Typical Size:** 30

**Scenario Cost:** \$7,824.19

**Scenario Cost/Unit:** \$260.81

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$18.24	30	\$547.20
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$5.80	30	\$174.00
Tillage, Light	945	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	\$9.52	30	\$285.60
Chemical, ground application	948	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$5.24	30	\$157.20
<b>Labor</b>						
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	\$17.54	8	\$140.32
<b>Materials</b>						
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	\$0.28	1500	\$420.00
Potassium, K2O	74	K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.29	1500	\$435.00
Test, Soil Test, Standard	299	Includes materials, shipping, labor, and equipment costs.	Each	\$9.36	1	\$9.36
Lime, ENM	75	Fertilizer: Limestone Spread on field.	Ton	\$90.38	60	\$5,422.80
<b>Mobilization</b>						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$232.71	1	\$232.71