

Practice: 328 - Conservation Crop Rotation

Scenario: #1 - Crop Rotation

Scenario Description:

In this region this practice may be part of a conservation management system to: 1) Reduce sheet and rill erosion 2) Reduce soil erosion from wind 3) Maintain or improve soil organic matter 4) Manage the balance of plant nutrients 5) Improve water use efficiency 6) Manage plant pests (weeds, insects, and diseases) 7) Provide food for domestic livestock and 8) Provide food and cover for wildlife. This practice payment is provided to acquire the technical knowledge and skills necessary to effectively implement a conservation crop rotation on a typical 160 acre cropland farm. No foregone income is included as the newly added crop will not reduce net crop return in the rotation. Costs represent typical situations for conventional (non-organic) producers. A minimum of one additional crop will be added to an existing crop rotation.

Before Situation:

The rotation consists primarily of a two crop rotation - small grain and row crop or fallow. An additional crop is added to improve soil health and address erosion, soil quality, and pest management resource concerns.

After Situation:

A minimum 3 crop rotation is established that requires a minimum of at least one additional high residue and/or perennial crop. The 3 crop minimum rotation reduces erosion, improves soil quality, breaks pest cycles, and provides for additional wildlife needs.

Scenario Feature Measure: Area planted

Scenario Unit: Acre

Scenario Typical Size: 160

Scenario Cost: \$2,249.40

Scenario Cost/Unit: \$14.06

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<i>Labor</i>						
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$37.49	60	\$2,249.40

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Scenario: #2 - Crop Rotation, high value crop

Scenario Description:

In this region this practice may be part of a conservation management system to: 1) Reduce sheet and rill erosion 2) Reduce soil erosion from wind 3) Maintain or improve soil organic matter 4) Manage the balance of plant nutrients 5) Improve water use efficiency 6) Manage plant pests (weeds, insects, and diseases) 7) Provide food for domestic livestock and 8) Provide food and cover for wildlife. This practice payment is provided to acquire the technical knowledge and skills necessary to effectively implement a conservation crop rotation on a typical 160 acre dryland cropland farm where the predominance of crops in the existing rotation are high value crops (e.g. corn or soybeans). Foregone income is included due to lost crop yield and income by adding an additional lesser value crop into the existing rotation. Cost represents typical situations for conventional (non-organic) producers. A minimum of one additional lesser value crop (e.g. wheat, sorghum, sunflowers) will be added to an existing higher value crop rotation (e.g. soybeans and corn).

Before Situation:

The dryland crop rotation consists primarily of a two crop rotation of high value row crops (e.g. soybeans and corn). An additional lower value crop (e.g. wheat, sorghum, sunflowers) is added to the rotation to improve soil health, reduce erosion, and break pest/disease cycles.

After Situation:

A minimum 3 crop rotation is established that requires at least one additional high residue and/or perennial crops added to an existing crop rotation. The 3 crop minimum rotation reduces erosion, improves soil quality, breaks pest cycles, and provides for additional wildlife needs.

Scenario Feature Measure: Area planted

Scenario Unit: Acre

Scenario Typical Size: 160

Scenario Cost: \$7,219.02

Scenario Cost/Unit: \$45.12

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Foregone Income						
Fl, Corn Dryland	1959	Dryland Corn is Primary Crop	Acre	\$144.36	-53	(\$7,651.08)
Fl, Corn Dryland	1959	Dryland Corn is Primary Crop	Acre	\$144.36	80	\$11,548.80
Fl, Wheat Dryland	1963	Dryland Wheat is Primary Crop	Acre	\$115.67	-54	(\$6,246.18)
Fl, Soybeans Dryland	1961	Dryland Soybeans is Primary Crop	Acre	\$271.04	-53	(\$14,365.12)
Fl, Soybeans Dryland	1961	Dryland Soybeans is Primary Crop	Acre	\$271.04	80	\$21,683.20
Labor						
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$37.49	60	\$2,249.40

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Scenario: #3 - Irrigated to Dryland Rotation, high value crops

Scenario Description:

In this region this practice may be part of a conservation management system to primarily convert from an irrigated cropping system to dryland farming. In addition to improving water use efficiency the rotation may 1) Reduce sheet and rill erosion 2) Reduce soil erosion from wind 3) Maintain or improve soil organic matter 4) Manage the balance of plant nutrients 5) Manage plant pests (weeds, insects, and diseases) 6) Provide food for domestic livestock and 7) Provide food and cover for wildlife. This practice payment is provided to acquire the technical knowledge and skills necessary to effectively implement a conservation crop rotation on a typical 120 acre cropland farm. There is foregone income involved with this conversion from irrigated to dryland farming due to lower yields without irrigation. Cost represents typical situations for conventional (non-organic) producers converting from irrigated cropping to dryland farming. Typical crops grown under irrigation will include one small grain (e.g. wheat) and one row crop (e.g. corn) in rotation.

Before Situation:

The existing rotation consists of growing one row crop and one small grain in rotation that received a significant (more than half) of the required water through irrigation. The existing water demands are impacting the area's groundwater availability. Erosion, soil condition, and future water availability are the major concerns.

After Situation:

The dryland rotation, using the same crops or a rotation that grows crops over different periods, will be part of a management system capable of utilizing available rainfall and soil moisture more efficiently and controlling wind and water erosion. Corn yields will be expected to be reduced from 150 to 80 bu/acre, and wheat yields will be expected to be reduced from 80 to 40 bu/ac.

Scenario Feature Measure: Area planted

Scenario Unit: Acre

Scenario Typical Size: 120

Scenario Cost: \$36,055.40

Scenario Cost/Unit: \$300.46

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Foregone Income						
FI, Wheat Dryland	1963	Dryland Wheat is Primary Crop	Acre	\$115.67	-60	(\$6,940.20)
FI, Corn Irrigated	1960	Irrigated Corn is Primary Crop	Acre	\$536.31	60	\$32,178.60
FI, Wheat Irrigated	1964	Irrigated Wheat is Primary Crop	Acre	\$299.65	60	\$17,979.00
FI, Corn Dryland	1959	Dryland Corn is Primary Crop	Acre	\$144.36	-60	(\$8,661.60)
Labor						
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$37.49	40	\$1,499.60

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Scenario: #4 - Irrigation to Dryland Rotation, high value crop with small grain added

Scenario Description:

In this region this practice may be part of a conservation management system to primarily convert from an irrigated cropping system to dryland farming. In addition to improving water use efficiency the rotation may 1) Reduce sheet and rill erosion 2) Reduce soil erosion from wind 3) Maintain or improve soil organic matter 4) Manage the balance of plant nutrients 5) Manage plant pests (weeds, insects, and diseases) 6) Provide food for domestic livestock and 7) Provide food and cover for wildlife. This practice payment is provided to acquire the technical knowledge and skills necessary to effectively implement a conservation crop rotation on a typical 120 acre irrigated cropland farm. Foregone income is included with the conversion from irrigated to dryland farming due to lower yields and net return. Cost represents typical situations for conventional (non-organic) producers converting from irrigated cropping to dryland farming. Typical crops grown under irrigation will include a predominance of high value row crop(s) (e.g. corn and/or soybeans). The new rotation will include the introduction of a small grain into rotation to reduce the rotations water use requirements.

Before Situation:

The existing rotation consists of growing high value row crops (e.g corn and/or soybeans) that received a significant (more than half) of the required water through irrigation. The water demands are impacting the area's groundwater availability. Erosion, soil condition, and future water availability are the major concerns.

After Situation:

The new dryland rotation will include adding a small grain into a high value rotation grown, or using the same crops, will be part of a management system capable of utilizing available rainfall and soil moisture more efficiently and controlling wind and water erosion, maintain or improve soil quality, break pest/disease cycles. Corn yields will be expected to be reduced from 150 to 80 bu/acre, soybeans yields will be expected to be reduced from 100 to 40 bu/acre, and the newly added wheat yields will be expected to be 40 bu/acre.

Scenario Feature Measure: Area Planted

Scenario Unit: Acre

Scenario Typical Size: 120

Scenario Cost: \$37,703.20

Scenario Cost/Unit: \$314.19

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Foregone Income						
Fl, Corn Dryland	1959	Dryland Corn is Primary Crop	Acre	\$144.36	-40	(\$5,774.40)
Fl, Corn Irrigated	1960	Irrigated Corn is Primary Crop	Acre	\$536.31	60	\$32,178.60
Fl, Wheat Dryland	1963	Dryland Wheat is Primary Crop	Acre	\$115.67	-40	(\$4,626.80)
Fl, Soybeans Irrigated	1962	Irrigated Soybeans is Primary Crop	Acre	\$421.13	60	\$25,267.80
Fl, Soybeans Dryland	1961	Dryland Soybeans is Primary Crop	Acre	\$271.04	-40	(\$10,841.60)
Labor						
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$37.49	40	\$1,499.60