Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Appalachian
State	North Carolina
Discipline Group	Agronomy
Practice Code/Name	328 - Conservation Crop Rotation
Scenario ID	7
Scenario Name	HRW Management Strategy
Scenario Description	In this region this practice may be part of a conservation management system to: Manage plant pests (weeds, insects, and diseases). This practice payment is provided to acquire the technical knowledge and skills necessary to effectively implement a conservation crop rotation on a typical 200 cropland farm. Foregone income based on the estimated difference between the typical crop expected income (cotton/soybeans) and projected income from grain sorghum. Introduction of grain sorghum into selected production crop management system for a sufficient period of time to both promote herbicide rotation and lessen condition for invasion of herbicide resistant weeds caused by repeated field production of cotton. Cost represents typical situations for conventional (non-organic) producers. Applicable to all cropland in NC (primarily eastern NC) counties where resistant Palmer Amaranth is confirmed or a threat for spread.
Before Practice Situation	Continuous or nearly continuous cropping system of cotton or full season soybeans, with limited integration of small grain cover crops or other production crops within the rotation. Production crop selections do not allow promotion and implementation of IPM plant pest control methods that may reduce threat from herbicide resistant weeds, thus making production environment favorable for spread of HRWs, specifically Palmer Amaranth prevalent in continous cotton and soybeans. Because of lack of production crop diversity, herbicide rotation frequency is not implemented adequately to lessen condition of resistant weed spread.
After Practice Situation	Integration of a diverse cropping rotation system of 3 years or greater between repeated production of cotton or soybeans. Principles of the IPM Herbicide Resistant Weed CAP have been implemented, including herbicide rotation, scouting to assess need and timing for herbicide application. Production environment for resistant weed types, specifically Palmer Amaranth has been lessened through scenario implementation. Soil organic matter levels have been increased through decreased use of tillage to control HRWs, and erosion levels have been decreased.
Scenario Feature Measure	Area Planted
Scenario Unit	Acre
Scenario Typical Size	200

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$0.00	$0.00
Labor	$885.75	$4.43
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$183.87	$0.92
Foregone Income	$11,908.00	$59.54
Total	$12,977.62	$64.89

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$35.43	25	$885.75
Acquisition of Technical Knowledge	294	Training, Workshops	Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants.	Each	$116.67	1	$116.67
Acquisition of Technical Knowledge	297	Transportation	Mileage to attend a training conference, workshop, or TSP travel associated with developing Conservation Activity Plan.	Mile	$0.56	120	$67.20
Foregone Income	1961	FI, Soybeans Dryland	Dryland Soybeans is Primary Crop	Acre	$182.61	200	$36,522.00
Foregone Income	1971	FI, Sorghum Dryland	Dryland Sorghum is Primary Crop	Acre	$123.07	-200	($24,614.00)

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Appalachian
State	North Carolina
Discipline Group	Agronomy
Practice Code/Name	328 - Conservation Crop Rotation
Scenario ID	2
Scenario Name	Organic agronomic crop farm rotate to perennial
Scenario Description	In this region this practice may be part of a conservation management system to: 1) Reduce sheet and rill erosion 2) Maintain or improve soil organic matter 3) Manage the balance of plant nutrients 4) Improve water use efficiency 5) Manage plant pests (weeds, insects, and diseases). This practice payment is provided to acquire the technical knowledge and skills necessary to effectively implement a conservation crop rotation on a typical 75 acre organic (agronmic crop) cropland farm. Foregone income accrues on land planted to perennial. Cost represents typical situations for organic producers.
Before Practice Situation	The rotation consists primarily of low residue and conventionally produced row crops. Fields range from nearly flat to C and D slopes. Erosion, soil quality, and pest management are the primary concerns.
After Practice Situation	The rotation established transitions the rotation from a conventional system to an organic system with perennials. The rotation is planned that compliments erosion control, nutrient cycling, soil organic matter, and pest management via crop rotation.
Scenario Feature Measure	Area planted
Scenario Unit	Acre
Scenario Typical Size	25

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$0.00	$0.00
Labor	$708.60	$28.34
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$367.74	$14.71
Foregone Income	$2,769.13	$110.77
Total	$3,845.47	$153.82

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$35.43	20	$708.60
Acquisition of Technical Knowledge	294	Training, Workshops	Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants.	Each	$116.67	2	$233.34
Acquisition of Technical Knowledge	297	Transportation	Mileage to attend a training conference, workshop, or TSP travel associated with developing Conservation Activity Plan.	Mile	$0.56	240	$134.40
Foregone Income	2199	FI, Hay, Alfalfa, Organic	Organic Alfalfa Hay is Primary Crop	Ton	$35.79	-62.5	($2,236.88)
Foregone Income	2232	FI, Organic, Corn Dryland	Organic Dryland Corn is Primary Crop	Acre	$191.71	12.5	$2,396.38
Foregone Income	2234	FI, Organic, Soybeans Dryland	Organic Dryland Soybeans is Primary Crop	Acre	$208.77	12.5	$2,609.63

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Appalachian
State	North Carolina
Discipline Group	Agronomy
Practice Code/Name	328 - Conservation Crop Rotation
Scenario ID	1
Scenario Name	Agronomic crop farm rotate to perennial
Scenario Description	In this region this practice may be part of a conservation management system to: 1) Reduce sheet and rill erosion 2) Maintain or improve soil organic matter 3) Manage the balance of plant nutrient 4) Improve water use efficiency 5) Manage plant pests (weeds, insects, and diseases) and 6) Provide food for domestic livestock. This practice payment is provided to acquire the technical knowledge and skills necessary to effectively implement a conservation crop rotation on a typical 300 acre cropland farm. Cost represents typical situations for conventional (non-organic) producers. Practice is for adding perennial crops to rotations which currently (i.e., past 5+ years) have only involved annuals.
Before Practice Situation	The rotation consists primarily of low residue producing row crops. Fields range from nearly flat to C and D slopes. Erosion, soil quality, and pest management are the primary concerns. 200 milking herd confinement dairy on 300 acres and B slopes and steeper. 100 acres owned, 200 acres rented. Labor is owner/operator and 1 employee. Located in region with signficant animal confinement operations, access to litter and manures, and generally high soil test P levels. Primary crops grown are corn for silage,small grain silage, occasional soybeans. Soil compaction is a concern and tillage is used. Tillage and low residue crops make soil erosion and soil quality the major resource concerns. Others include: 1) Managing balance of plant nutrients - due to low frequency of legumes in rotation, implementing P based 590 and reducing manure rates requires purchase of commercial N to offset that found in manure; 2) plant pest management - lack of crop rotation means signficant cost and reduced efficacy of weed and other (e.g., corn rootworm) controls. All hay in the ration is purchased. No hay-making equipment on the farm.
After Practice Situation	A rotation is established that provides additional high residue and/or perennial crops that reduce erosion, improve soil quality, and break pest cycles. Conversion to crop rotation involving 3 or more years of perennial legume/grass mixed hay in rotation with corn silage and other annual crops. 15% additional rented acres are required to offset the net reduction in forage dry matter production. In order to compete for those additional acres, farmer must increase over budget for land rent by net 20% for all acres (from $50 to $60 per acre). The scenario assumes the farmer will commit to implement this practice over an initial 3 year period to test the practice. During this initial period, all aspects of hay making will be custom hired, from mowing to bale wrapping. The ration will be changed to increase percentage of hay. This will trigger need for additional nutritionist consulting services as well as training time for farm employee for adoption of new feeding system. Major cost is liming to increase pH for alfalfa relative to recommended pH for current crops (2 tons/ac lime required), cost of forage establishment. Note that for at least the first three years for perennial forage in rotation, all of these additional costs are not offset by reductions in N fertilizer or pest control costs or yield advantages that will
Scenario Feature Measure	Area planted
Scenario Unit	Acre
Scenario Typical Size	100

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$0.00	$0.00
Labor	$354.30	$3.54
Mobilization	$1,053.30	$10.53
Acquisition of Technical Knowledge	$183.87	$1.84
Foregone Income	$0.00	$0.00
Total	$1,591.47	$15.91

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$35.43	10	$354.30
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$35.11	30	$1,053.30
Acquisition of Technical Knowledge	294	Training, Workshops	Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants.	Each	$116.67	1	$116.67
Acquisition of Technical Knowledge	297	Transportation	Mileage to attend a training conference, workshop, or TSP travel associated with developing Conservation Activity Plan.	Mile	$0.56	120	$67.20
Foregone Income	1959	FI, Corn Dryland	Dryland Corn is Primary Crop	Acre	$167.69	50	$8,384.50
Foregone Income	1963	FI, Wheat Dryland	Dryland Wheat is Primary Crop	Acre	$193.71	50	$9,685.50
Foregone Income	2121	FI, Hay, Alfalfa	Alfalfa Hay is Primary Crop	Ton	$30.82	-600	($18,492.00)