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SNTC TECHNICAL NOTE 617

SUBJECT: A STRATEGY TO PROMOTE RESIDUE MANAGEMENT

Background

On August 14, 1991, the Chief of the Soil Conservation Service released the "Three-Year Action Plan to Accelerate Adoption of Residue Management." This plan is designed to facilitate the near doubling of current residue management acreages needed for conservation compliance by 1995. An initial step in the plan was to formulate focus groups comprising of agents (SCS, ASCS, SWCD), producers, and farm managers from around the country. As part of their objectives, the focus groups developed some preliminary findings regarding residue management.

- Increase farmer knowledge of residue, residue levels
- Economics - biggest hurdle
- Fear of unknown, change
- Farmer needs to take ownership of plan
- Farmer needs to be aware of SCS flexibility
- Demonstration, farmer to farmer best sales tool
- Equipment availability could be a problem
- Accessibility of data
- Localize, localize, localize

Purpose

The purpose of this technical note is to address as many of the focus groups' findings as possible using simple, available tools and approaches. The information contained in this document is most important at the field level, and should be shared at that level in some form. Specifically, the strategy and information that follows is meant to:

1. allow SCS and our clients to lay out the economics of residue management alternatives,
2. help our clients overcome the fear of the unknown involved in changing the way that they operate,

3. help our clients understand the physical effects they may achieve on resource problems and concerns with proper residue management,

4. facilitate the clients feeling of ownership of the plan,

5. encourage farmer to farmer demonstrations,

6. make residue management data more available to the client who is contemplating a change of operation, and

7. allow for localized aspects of decisionmaking.

Strategy

There are two main ingredients needed to meet the objectives outlined above. They are: 1) localized data on residue management, and 2) a tool to use that data in a customized analysis.

Case Studies* - One of the most effective and cost-efficient methods of collecting localized data on residue management is through the use of case studies. A case study is an organized set of quantitative and qualitative information that describes benchmark and planned condition of the resource and the impacts from installing that treatment. It basically documents how residue management meets cooperator objectives and effectively treats resource problems. (This documentation should be stored in Section V-B-1 (Producer Experiences) of the Field Office Technical Guide.)

A case study can be conducted as part of your ongoing conservation planning work during review of the farm operation and while developing and evaluating alternatives. Additionally, follow-up after the conservation plan has been implemented will serve to verify or reject planning expectations. Planning notes from an existing plan might contain all or most of the information needed to produce a good case study. One purpose of this technical note is to give information on structuring that data to include kinds, amounts, and timing of actions taken to implement residue management.

Typically, actions to implement residue management include changes in inputs and outputs. Therefore, the case studies should attempt to measure or quantify those changes. They should reflect farming operations undertaken, type of equipment used, dates of operations, number of operations to complete work, and the kinds and amounts of inputs such as seed, fertilizer, pesticides, tractor hours, fuel consumption, and labor required.

They should reflect yields, erosion rates, and other observable indicators related to the resources of concern (soil, water, air, plants, and animals).

They should reflect any significant changes in operational and managerial conditions and decisions.

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* More information on case studies can be found in the National Technical Center Technical Note entitled "Guidance for the Development and Use of Case Studies as a Source of Conservation Effects Information."

All available data on changes in the five resources should be recorded as that deals directly with our SCS mission. The degree of detail and selection of input and output factors to collect data for, however, should be guided by common sense and professional judgement. For example, the conservationist can ask the question: "What should I observe in order to gauge results and judge 'success'?" Such efforts will help prioritize and streamline data collection and analysis.

Case studies of residue management can be of three types:

1. a comparison of the "before and after treatment" conditions on a single site,

2. a comparison of two separate, but comparable resources and landuse situations (sites) on different farms or even on the same farm, i.e., one site "with and one without treatment"; or

3. a simple recording of the results a farmer experiences "with treatment" on a single site regardless of the "before" treatment conditions.

The first and second types mentioned above require that data be collected for both the "before treatment" or benchmark situation (without treatment) and the "after treatment" (with treatment) condition arising from the adoption of residue management.

The last alternative represents the simplest, easiest approach, but inherently has the greatest risk for misunderstanding cause and effect relationships because it focuses on "with treatment" conditions only. This may not matter, for the immediate future, as the optional situation with residue management is deemed more desirable than the new cooperator's present situation. However, a more precise understanding of the cause and effect relationships due to conservation is important for our work over the longer term. Indeed, conservation effects information incorporated into Section V over time should result in improvements to Section III.

Exhibits 1* and 2* illustrate one way case study information could be displayed. To start the process, a "Type 3" case study could be completed by recording the results of Farmer A's experiences with residue management, as part of a successfully applied conservation plan, Exhibit 2. This format allows for the recording of actions and effects from Farmer A's successful application of a conservation treatment which includes residue management. (The collection of this type of information was suggested at the FOTG training sessions in 1990 and 1991. Some states are well on the way to obtaining many useful sets.)

Exhibit 2 illustrates how the case study from Farmer A can be used to promote residue management as a viable option for Farmer B.

* Exhibits 1 and 2 were derived from actual case studies developed for use by a Midwest State.

U.S. Department of Agriculture
Soil Conservation Service

Exhibit 2

Conservation Effects Worksheet

Treatment Options

Name	Address	OPID No.	Field or Tract No.
Farmer A	Somewhere, USA		

Treatment Option No. 1

Description of Treatment Option (With treatment management system):
Residue Management - No-Till Corn and Soybeans
Nutrient Management
Pesticide Management

Actions - Proposed Management (Kinds, amounts, and timing):	Effects (Effects of conservation treatment):	Comparison of Effects of Benchmark and Treatment Option	
		Impacts	Decisionmaker Evaluation
- No-Till Corn in Soybean Residue Surface applies herbicides 22nd of March. 28% liquid nitrogen 100 lbs. of Actual N. Bicep (Dual & Atrazine) (2 quart rate) Spray aroad leaf weeds with Bladex and 2,4-D amine	Soil loss 3T/Ac P_2O_5 runoff diminished N runoff decreased Nutrient pollution reduced Machinery	- P205 runoff reduced - N Runoff and contamination reduced - Soil Loss reduced by 7 Ton/Ac - Infiltration increased - Eliminate Row Cultivator + Disk - Chemical use decrease - Need more time for scouting - Slower planting - Fertilizer requirement unchanged but timing of application is closer to when crops need nutrients	+ + + + + + - - +
- No-Till Beans in Corn Stalks Spray preplant herbicides Gramoxone Prowl/Surfact X-77 residual 2,4-DB Apply lime in Spring	75 HP Tractor No-Till Planter Chopper Stalk buster bush hog Sprayer Planter Chemicals: Corn Bladex .3 Gal./AC Beans Gramoxone pt./Ac - Fertilizer: Corn - N40# Starter 8-100# P_2O_5 60 lb/Ac K_2O 90 lb/Ac Soybeans - Lime 2 Tons/Ac - Fuel: Corn - 6.5 Gal/Ac Soybeans 5.0 Gal/Ac - Labor: Corn - 7.4 Hr/Ac Soybeans - 6.0 Hr/Ac - Yields: Corn - 105Bu/Ac Soybeans - 28 Bu/Ac	- Fuel: Corn - Reduced - 2 Gal/Ac Beans - Reduced - 2 Gal/Ac Labor: Corn - Reduced - 2.4 Hr/Ac Beans - Reduced - 2.8 Hr/Ac Yields: Corn - 105 Bu/Ac Beans - 28 Bu/Ac Current yield levels will be maintained as erosion is reduced and may increase through time as residue improves soil characteristics.	+ + +

Comments:

The use of brand names does not constitute an endorsement by the Soil Conservation Service

The left-hand column of Exhibit 1 shows the kinds, amount and timing of actions undertaken by Farmer B in the "before treatment" or benchmark condition. The second column from the left shows the effects of those actions. This data is recorded during elements 4 and 5 of the nine step planning process.

The third column from the left in Exhibit 2 shows the impacts (changes) of adopting the option displayed in Columns 1 and 2. The impacts are the differences between the effects observed in the "before treatment" benchmark condition of Farmer B and those effects realized by Farmer A in the option of "after treatment" condition. The evaluation of impacts essentially constitutes element 9 of the nine step planning process.

Finally, the last or right-hand column of Exhibit 2 shows Farmer B's perception of the value of those impacts. Such a display of the case study information can be especially helpful to assist client in deciding whether or not to develop a conservation plan.

Care and good judgement must be used in deciding whether to use the participating farmer's name when presenting results to others. Ideally, the case study farmer would consent to the public use of the results and also be an esteemed local resident. However, if confidentiality is a concern, case study information can be presented carefully without reference to the particular cooperating farmer.

If this physical information in Exhibit 2 is enough to allow Farmer B to make a decision on applying residue management, then the strategy has succeeded. If, however, Farmer B wants to see how this option will effect his/her bottom line economically, then the strategy must continue.

Quick Budget - The second part of the strategy to promote residue management is to develop a tool that is capable of turning case study data into a customized analysis for the farmer. Fortunately, this tool has been developed by SCS and resides currently in CAMPS 1.6 and a future issue of FOCS. Quick Budget, the field office option of the Cost and Return Estimator (CARE), was developed specifically to analyze conservation options such as residue management.

Quick Budget uses "base crop budgets" developed at the state office as a starting point. Then, information from the farmer is easily incorporated to customize a budget reflecting the current condition for that individual. Now the fun begins as data from appropriate case studies are interjected to answer any "what if" questions the farmer might have about residue management for his own farm.

Data requirements beyond the case studies are not excessive. Over ninety percent of the data comes from base budgets which are developed at the state office. The remaining ten percent or less comes from asking the farmer enough questions to customize a base budget to reflect his or her situation. Quick Budget was designed to make this customization process extremely easy. Also extremely easy is the way it can be used with case studies to analyze residue management options using a "what if" approach.

What makes these processes in Quick Budget so easy? The best way to answer this question is to walk through a demonstration using a state's base budget and the case study described previously in Exhibits 1 and 2.

The MAKE sub-option of Quick Budget pulls a selected base budget to the screen for editing. Exhibit 3 shows how a base budget would appear on the screen in its Quick Budget form. The Quick Budget data screen consists of seven parts entitled:

I. Parameters. - Budget Title, ID, associated field, land and management charges, and number of acres.

II. Revenue. - Total income from the crop (Yield x Price).

III. Machinery Operations. - A base set of machinery operations can be loaded into the Quick Budget form by selecting an appropriate budget to MAKE. Machinery operations can be added with a machinery worksheet or deleted with a few keystrokes.

IV. Materials and Services. - A base set of materials and services can be loaded into the Quick Budget form by selecting an appropriate budget to MAKE. Materials and Services can be added or deleted with a few keystrokes.

V. Other Charges. - Other charges include interest on operating capital, crop drying costs and parameters, settlement month, etc.

VI. Total Costs. - Sum of all costs to produce the crop.

VII. Net Returns. - Revenue minus total costs.

Exhibits 4 and 5 illustrate the editing features available. These features aid in customizing the base budget to match the particular farmer's situation (Farmer B). Overall, Quick Budget functions as a full screen editor, allowing for easy on screen changes. In addition, unique "auto-select" windows can be invoked giving the user a list of selections from which to choose. This feature eliminates the need for typing and greatly speeds up the editing process. Auto-select windows are available for all noncalculated sections of Quick Budget and the data sets for these functions are developed as part of the base budgets by the state office. Many states have completed this task. Exhibit 4 illustrates how this process works for Part IV, Materials and Services. Not only are inputs added, deleted, or replaced; but the costs associated with those inputs are also carried along with the input.

Exhibit 5 illustrates the auto-select windowing available for the Machinery Operations Section. The first window is a machinery calculator which aids in the addition of a new operation, while the second level window gives a list of machines to select for that operation. All operations are sorted chronologically and costs are automatically brought in when a new machinery combination is selected. Again, the data needs for this function are supplied in the program by the state office.

An "auto-recalculation" feature of Quick Budget is extremely useful for the "what if" type analyses.

I. Parameters

Title	: Farmer A Corn Gr Residue	Budget ID	: US-021-0021
Field Name	: Somewhere, USA	Acres	: 1
Land Charge Type	: No Charge	Land Charge	: 0.00
Mgmt Charge Type	: None	Mgmt Charge	: 0.000

II. Revenue Crop Name	Units	Quant -ity	Price /Unit	Value /Acre	Total Revenue
Corn Grain	Bushels	105.00	2.00	210.00	210.00
Total Crop Revenue				210.00	210.00

III. Machinery Operations Date Operation	Acres /Hour	Times Over	Cost /Unit	Cost /Acre	Total Cost
Pre-Harvest Activities					
Mar Sprayer Pull Type	15.36	1.00	0.01	1.42	1.42
Apr Custom Fertilize	24.24	1.00	0.00	0.23	0.23
May Planter No-Till 6R	5.48	1.00	0.08	8.26	8.26
Jun Sprayer Pull Type	15.36	1.00	0.01	1.42	1.42
Pre-Harvest Total			0.11	11.33	11.33
Harvest Activities					
Oct Combine Head Corn 6R	4.58	1.00	0.29	30.36	30.36
Harvest Total			0.29	30.36	30.36
Machinery Operations SubTotal			0.40	41.69	41.69

IV. Materials and Services Date	Material / Service	Units	Quant -ity	Cost /Unit	Cost /Acre	Total Cost
Mar	Herbicide Bicep	Gallons	0.50	21.60	10.80	10.80
Apr	Nitrogen 28% Liquid	Pounds	40.00	0.17	6.80	6.80
Apr	Phosphorous	Pounds	60.00	0.11	6.60	6.60
Apr	Potassium	Pounds	90.00	0.12	10.80	10.80
May	Nitrogen	Pounds	100.00	0.17	17.00	17.00
May	Corn Seed	Bushels	0.25	64.90	16.23	16.23
Jun	Herbicide Bladex	Gallons	0.30	17.50	5.25	5.25
Jun	Herbicide 2,4D amine	Gallons	0.13	8.00	1.04	1.04
Materials and Services SubTotal				0.71	74.52	74.52

V. Other Charges		Cost /Unit	Cost /Acre	Total Cost
Interest On Operating Capital		0.04	4.14	4.14
Settlement Month	Oct			
Interest Rate	11.000			
Crop Drying Costs		0.04	3.75	3.75
Percentage Dried	75.000			
Starting Moisture	20.000			
Ending Moisture	15.000			
Drying Fuel	LP Gas			
Custom Rate	0.00			
Land Charges		0.00	0.00	0.00
Management Charges		0.00	0.00	0.00
Other Charges SubTotal		0.08	7.89	7.89

	Cost /Unit	Cost /Acre	Total Cost
VI. Total Costs	1.18	124.10	124.10
VII. Net Returns	0.82	85.90	85.90

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

User - Scenario 09 On Farm Drying of 75% of yield from 20% moisture to 15% moisture, using LP Gas

Exhibit 3. Quick Budget Report

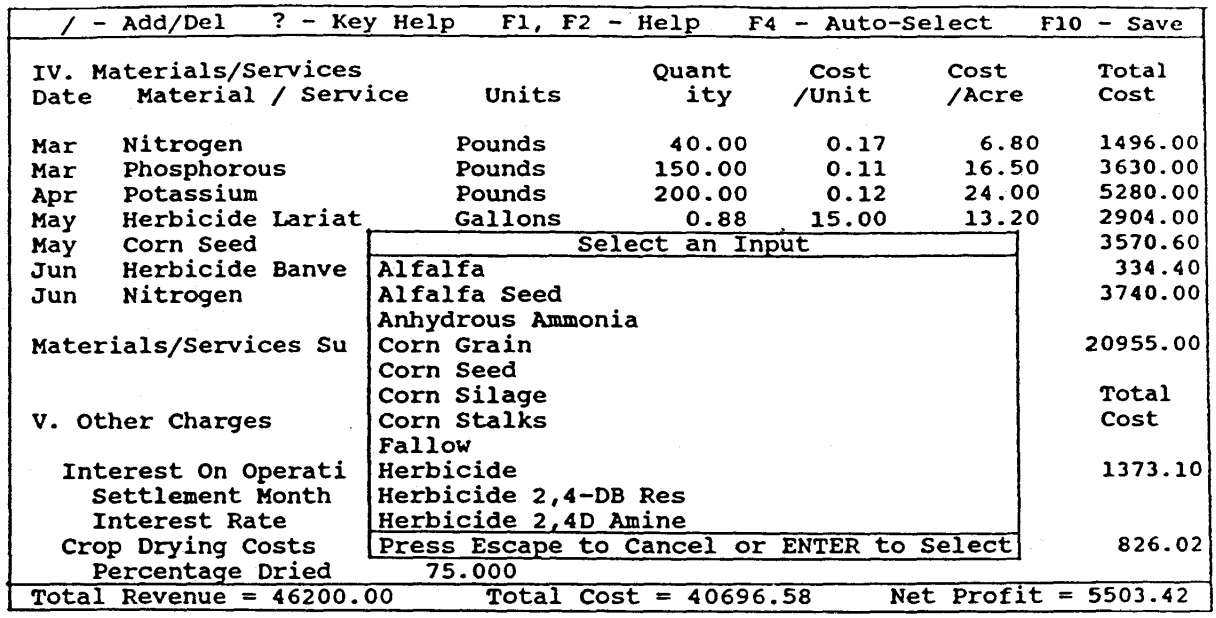

Exhibit 4. Quick Budget Materials and Services Selection

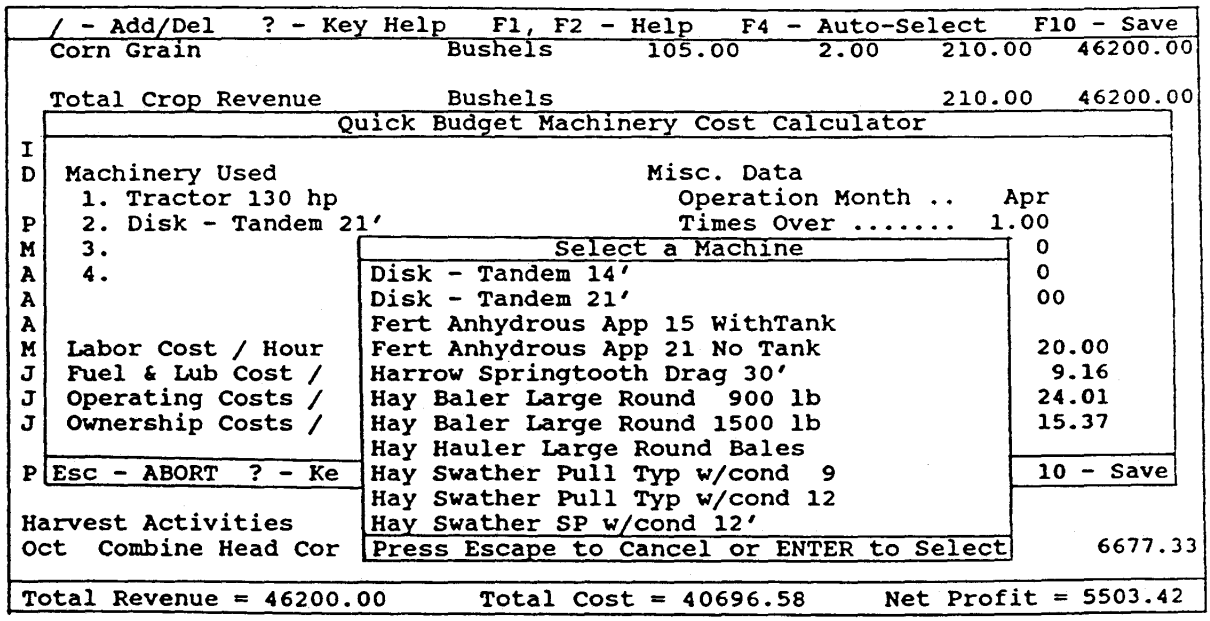

Exhibit 5. Quick Budget Machinery Cost Calculator Selection

Whenever any number is added, deleted, changed, or replaced, based on information from a case study, the total budget recalculates and results are instantaneously seen. A stationary bar at the bottom of the screen gives Total Revenue, Total Costs, and Net Returns. Thus, wherever the user is at in the budget, a change will be reflected on the bar and a new "bottom line" will appear without scrolling. Instant simulations can be produced employing various levels of residue management, customized for Farmer B, based on Farmer A's experiences.

Currently, an option has been added to Quick Budget to specifically address without and with treatment comparisons. This option, called COMPARE, is an additional report available to users. This report (Exhibit 6), allows a user to select two budgets (current condition and with residue management) and have them compared to each other in one report.

This report is a useful study tool for the farmer as he or she makes conservation compliance decisions because the predicted economic effects from moving to residue management are clearly laid out.

In this example, Exhibit 6, Farmer B's current condition for corn (customized by Quick Budget using a state supplied base budget as a starting point) is compared to a residue management alternative (using Farmer A's case study and Quick Budget). The resulting comparison shows that a move to residue management could change Farmer B's corn operation in the following economic* ways:

a) Machinery operation costs decreased by $38.04 per acre.

b) Material useage costs (including fertiizer and pesticides) decreased by $24.06 per acre.

c) Fuel and labor costs decreased by $10.39 per acre.

d) Net returns increased by $64.57 per acre.

In Exhibit 7, the economic effects of Farmer B's move to residue management on the soybean enterprise is examined. This COMPARE report illustrates that a move to residue management could change Farmer B's soybean operation in the following economic ways:

a) Machinery operation costs decreased by $10.86 per acre.

b) Material useage costs (including fertilizer and pesticides) decreased by $4.53 per acre.

c) Fuel and labor costs decreased by $2.71 per acre.

d) Net returns increased by $15.84 per acre.

* Remember that Farmer A's case study supplies the non-economic (5 resources changes that Farmer B might expect. The changes in Exhibit 6, deal specifically with economic changes as computed by CARE.

I. Budget Information	Budget 1	Budget 2
Field Name	Somewhere, USA	Somewhere, USA
Number of Acres	1 Acres	1 Acres
Land Charge Type	No Charge	No Charge
Land Charge Amount	0.00	0.00
Management Type	None	None
Management Charge Amount	0.00	0.00

II. Crop Production		Budget 1			Budget 2			Difference		
Crop Name	Units	Yield / Acre	Price / Unit	Total Revenue	Yield / Acre	Price / Unit	Total Revenue	Yield / Acre	Price / Unit	Total Revenue
Corn Grain	Bushels	105.00	2.00	210.00	105.00	2.00	210.00	0.00	0.00	0.00
Total Revenue				210.00			210.00			0.00

III. Machinery Operations		Budget 1			Budget 2			Difference		
Date	Pre-Harvest Operations	Cost / Acre	Cost / Unit	Total Cost	Cost / Acre	Cost / Unit	Total Cost	Cost / Acre	Cost / Unit	Total Cost
Mar	Custom Fertilize	0.23	0.00	0.23						
Apr	Plow Moldboard 5-16	14.71	0.14	14.71						
Apr	Disk - Tandem 21'	5.07	0.05	5.07						
Apr	Disk - Tandem 21'	4.56	0.04	4.56						
May	Planter 6-30	9.64	0.09	9.64						
Jun	Sprayer Pull Type	2.05	0.02	2.05						
Jun	Fert Anhydrous App 1	7.28	0.07	7.28						
Jun	Cultivator - Row 6R	5.83	0.06	5.83						
Mar	Sprayer Pull Type				1.42	0.01	1.42			
Apr	Custom Fertilize				0.23	0.00	0.23			
May	Planter No-Till 6R				8.26	0.08	8.26			
Jun	Sprayer Pull Type				1.42	0.01	1.42			
Total	Pre-Harvest Operations Costs	49.37	0.47	49.37	11.33	0.11	11.33	-38.04	-0.36	-38.04
	Harvest Operations									
Oct	Combine Head Corn 6R	30.36	0.29	30.36						
Oct	Combine Head Corn 6R				30.36	0.29	30.36			
Total	Harvest Operations Costs	30.36	0.29	30.36	30.36	0.29	30.36	0.00	0.00	0.00
Total	Operations Costs	79.73	0.76	79.73	41.69	0.40	41.69	-38.04	-0.36	-38.04

V. Material Usage		Budget 1			Budget 2			Difference		
Material Name	Units	Quant / Acre	Cost / Unit	Total Cost	Quant / Acre	Cost / Unit	Total Cost	Quant / Acre	Cost / Unit	Total Cost
Corn Seed	Bushels	0.25	64.90	16.23	0.25	64.90	16.23	0.00	0.00	0.00
Herbicide 2,4D amine	Gallons				0.13	8.00	1.04	0.13	8.00	1.04
Herbicide Banvel	Gallons	0.06	50.80	3.05				-0.06	-50.80	-3.05
Herbicide Bicep	Gallons				0.50	21.60	10.80	0.50	21.60	10.80
Herbicide Bladex	Gallons				0.30	17.50	5.25	0.30	17.50	5.25
Herbicide Lariat	Gallons	1.00	15.00	15.00				-1.00	-15.00	-15.00
Nitrogen	Pounds	40.00	0.17	6.80	100.00	0.17	17.00	60.00	0.00	10.20
Nitrogen 28% Liquid	Pounds				40.00	0.17	6.80	40.00	0.17	6.80
Nitrogen side	Pounds	100.00	0.17	17.00				-100.00	-0.17	-17.00
Phosphorous	Pounds	150.00	0.11	16.50	60.00	0.11	6.60	-90.00	0.00	-9.90
Potassium	Pounds	200.00	0.12	24.00	90.00	0.12	10.80	-110.00	0.00	-13.20
Total Material Cost				98.57			74.51			-24.06

VI. Other Charges	Budget 1			Budget 2			Difference		
	Cost / Acre	Cost / Unit	Total Cost	Cost / Acre	Cost / Unit	Total Cost	Cost / Acre	Cost / Unit	Total Cost
Other Charges SubTotal	10.36	0.10	10.36	7.89	0.08	7.89	-2.47	-0.02	-2.47
Total Costs	188.67	1.80	188.67	124.10	1.18	124.10	-64.57	-0.62	-64.57
Net Returns	21.33	0.20	21.33	85.90	0.82	85.90	64.57	0.62	64.57
Total Fuel Cost			14.46			8.97			-5.49
Total Labor Cost			9.70			4.80			-4.90

Exhibit 6. Quick Budget Comparison Report, Corn Grain

I. Budget Information	Budget 1	Budget 2
Field Name	Somewhere, USA	Somewhere, USA
Number of Acres	1 Acres	1 Acres
Land Charge Type	No Charge	No Charge
Land Charge Amount	0.00	0.00
Management Type	None	None
Management Charge Amount	0.00	0.00

II. Crop Production		Budget 1			Budget 2			Difference		
Crop Name	Units	Yield / Acre	Price / Unit	Total Revenue	Yield / Acre	Price / Unit	Total Revenue	Yield / Acre	Price / Unit	Total Revenue
Soybeans	Bushels	28.00	5.10	142.80	28.00	5.10	142.80	0.00	0.00	0.00
Total Revenue				142.80			142.80			0.00

III. Machinery Operations		Budget 1			Budget 2			Difference		
Date	Pre-Harvest Operations	Cost / Acre	Cost / Unit	Total Cost	Cost / Acre	Cost / Unit	Total Cost	Cost / Acre	Cost / Unit	Total Cost
Mar	Custom Fertilize	0.23	0.01	0.23						
Apr	Disk - Tandem 21'	5.07	0.18	5.07						
Apr	Disk - Tandem 21'	5.07	0.18	5.07						
May	Planter 6-30	9.64	0.34	9.64						
Jun	Cultivator - Row 6R	5.83	0.21	5.83						
Mar	Stalk Chopper, 12'				5.07	0.18	5.07			
Mar	Custom Fertilize				0.23	0.01	0.23			
Apr	Sprayer Pull Type				1.42	0.05	1.42			
May	Planter No-Till 6R				8.26	0.30	8.26			
Total	Pre-Harvest Operations Costs	25.84	0.92	25.84	14.98	0.54	14.98	-10.86	-0.38	-10.86
	Harvest Operations									
Sep	Combine Platform w/p	28.44	1.02	28.44						
Oct	Combine Platform w/p				28.44	1.02	28.44			
Total	Harvest Operations Costs	28.44	1.02	28.44	28.44	1.02	28.44	0.00	0.00	0.00
Total	Operations Costs	54.28	1.94	54.28	43.42	1.56	43.42	-10.86	-0.38	-10.86

V. Material Usage		Budget 1			Budget 2			Difference		
Material Name	Units	Quant / Acre	Cost / Unit	Total Cost	Quant / Acre	Cost / Unit	Total Cost	Quant / Acre	Cost / Unit	Total Cost
Herbicide 2,4-DB Res	Gallons				0.13	10.00	1.30	0.13	10.00	1.30
Herbicide Gramoxone	Gallons				0.13	40.00	5.20	0.13	40.00	5.20
Herbicide Lasso	Gallons	0.09	20.00	1.80				-0.09	-20.00	-1.80
Herbicide Prowl/surf	Gallons				0.13	24.00	3.12	0.13	24.00	3.12
Herbicide Sencore	Gallons	0.13	95.00	12.35				-0.13	-95.00	-12.35
Lime Application	Tons	2.00	22.00	44.00	2.00	22.00	44.00	0.00	0.00	0.00
Soybean Seed	Bushels	1.00	13.00	13.00	1.00	13.00	13.00	0.00	0.00	0.00
Total Material Cost				71.15			66.62			-4.53

VI. Other Charges	Budget 1			Budget 2			Difference		
	Cost / Acre	Cost / Unit	Total Cost	Cost / Acre	Cost / Unit	Total Cost	Cost / Acre	Cost / Unit	Total Cost
Other Charges SubTotal	4.92	0.18	4.92	4.47	0.16	4.47	-0.45	-0.02	-0.45
Total Costs	130.35	4.66	130.35	114.51	4.09	114.51	-15.84	-0.57	-15.84
Net Returns	12.45	0.44	12.45	28.29	1.01	28.29	15.84	0.57	15.84
Total Fuel Cost			7.45			5.59			-1.86
Total Labor Cost			6.30			5.45			-0.85

Exhibit 7. Quick Budget Comparison Report, Soybeans

Summary

As SCS continues its promotion of residue management to aid farmers in meeting conservation compliance goals, we must continue to be responsive to the needs of those farmers. Farmers tell us that one of the most needed types of information is economics. They want the residue management alternatives laid out in a logical manner using data from their neighbors who are using residue management. They also want to feel an ownership in the conservation plan and have localized emphasis placed on that plan.

To meet these needs, the use of localized case studies in conjunction with Quick Budget (if needed by the decisionmaker) is recommended. Case studies provide insights on actual localized results experienced by neighbors. They allow SCS to express residue management recommendations in a more credible manner which will be recognized by our clients. Case studies will also help build a permanent record of treatment results that would not disappear as employee retirements and transfers occur. The process of developing a case study is excellent training for our employees to refine their planning skills.

The use of Quick Budget to compare a farmer's actual current operation to an alternative including residue management (with effects obtained from a innovative neighbor) can effectively customize a conservation plan for that particular farmer. His or her ownership of that plan is greatly enhanced when it is customized in such a manner. The customizing process for Farmer B can be summarized in 4 steps:

1. Select a base budget in CARE (supplied to the field by the state office) that most closely approximates Farmer B's current operation.

2. Use the editing features of Quick Budget and input from Farmer B to quickly customize the base budget for Farmer B's current operation.

3. Develop an alternative budget for Farmer B including residue management options based on a case study developed for Farmer A.

4. Produce a "COMPARE" report (using Quick Budget) as a decision tool for Farmer B.

After Farmer B decides to apply residue management, you may want to develop a case study of his or her situation for inclusion in Section V-B-1 of the FOTG.

Remember, part of the benefit of this strategy is the documentation of results for future use. This type of documentation process will greatly enhance our future effectiveness. Think of the possibilities if we in SCS had begun developing case studies of this type 50 years ago.