



management

KNOW YOUR COSTS

By Robin Brumfield

In today's challenging economic climate, doing the math — and distinguishing your best sellers from your struggling crops — has never been more critical.

Times are uncertain. The financial markets are in crisis. Competition in the U.S. greenhouse industry has become fierce. Rising energy costs have made energy a much more significant cost for heating and shipping than ever before. Domestic competition, off-shore production, a weakening and stressed economy, and the growth of the mass market add up to produce downward pressure on prices.

How do you, as a producer, make money with shrinking margins, rising costs and demanding customers? With so many crops, you may not know which are making money and which are losers. The first step is to determine your costs.

A Useful Application

The Greenhouse Cost Accounting program, developed in Microsoft Excel and distributed

by Rutgers University, lets you determine the costs and returns of each crop produced. The latest version of this user-friendly cost-accounting software also calculates costs of crops produced outdoors as well as greenhouse crops. The program generates information showing total costs and net returns per unit. It enables growers to easily determine the profitability of each crop. From this information, you can separate the winning crops from the losers. This software also will help you make decisions on pricing, identifying and reducing unprofitable production costs and increasing sales of profitable crops.

New features of the program include calculating key ratios and percentages of each overhead cost, and providing information from the balance sheet. In addition to analyzing your actual costs, you can use the program as a planning tool to analyze the impact of



Crops						
	Petunia flats	Marigold flats	Geranium flats	Geraniums (4-inch pots)	Poinsettias (6-inch pots)	Outdoor cut flowers
Sales	\$388,570	\$343,000	\$574,770	\$157,700	\$653,562	\$99,317
Profit (loss) per crop	\$69,844	\$50,080	\$54,026	\$14,039	\$64,424	\$19,188
Profit (loss) per unit	\$1.43	\$1.02	\$1.10	\$0.15	\$0.54	\$0.77
Profit (loss) per sq. ft.-week	\$0.11	\$0.10	\$0.05	\$0.21	\$0.03	\$0.03
Everything held constant, but energy adjusted to 2008 fuel prices.						
Sales	\$388,570	\$343,000	\$574,770	\$157,700	\$653,562	\$99,317
Profit (loss) per crop	\$30,682	\$20,709	-\$9,612	\$10,098	-\$48,405	\$19,188
Profit (loss) per unit	\$0.63	\$1.42	-\$0.20	\$0.11	-\$0.40	\$0.77
Profit (loss) per sq. ft.-week	\$0.05	\$0.04	-\$0.01	\$0.15	-\$0.03	\$0.03
Everything held constant, but energy adjusted to 2008 fuel prices and sales prices increased 5%.						
Sales	\$407,999	\$360,150	\$603,508	\$165,585	\$686,240	\$104,283
Profit (loss) per crop	\$50,111	\$37,859	\$19,126	\$17,983	-\$15,726	\$24,154
Profit (loss) per unit	\$1.02	\$0.77	\$0.39	\$0.19	-\$0.13	\$0.97
Profit (loss) per sq. ft.-wk	\$0.08	\$0.08	\$0.02	\$0.27	-\$0.01	\$0.04
Price	\$8.33	\$7.35	\$12.32	\$1.74	\$5.73	

Table 1. An example from the Greenhouse Cost Accounting program of output information per units and per crop, using Northeast costs from 2003.

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Values from Income Statement (Schedule F or C)				
	2003 Actual		2008 Fuel Increase	
	\$	% of Sales	\$	% of Sales
Sales	\$2,219,560	100	\$2,219,560	100
Directs costs				
Seeds, cuttings or plants	\$490,863	22.1	\$490,863	22.1
Pots or containers	\$140,984	6.4	\$140,984	6.4
Marketing containers	\$38,567	1.7	\$38,567	1.7
Growing medium	\$4,689	0.2	\$4,689	0.2
Fertilizer and chemicals	\$43,163	1.9	\$43,163	1.9
Tags	\$0	0.0	\$0	0.0
Sales Commissions	\$2,875	0.1	\$2,875	0.1
Other	\$37,468	1.7	\$37,468	1.7
Overhead salaries (including benefits)	\$2,895	0.1	\$2,895	0.1
General wages (including benefits)	\$729,233	32.9	\$729,233	32.9
Utilities				
Heating/machinery fuel	\$77,566	3.5	\$232,698	10.5
Electricity	\$40,352	1.8	\$40,352	1.8
Telephone	\$5,894	0.3	\$5,894	0.3
Water	\$464	0.0	\$464	0.0
Overhead				
Depreciation	\$92,642	4.2	\$92,642	4.2
Interest	\$8,080	0.4	\$8,080	0.4
Repairs	\$43,829	2.0	\$43,829	2.0
Taxes	\$26,131	1.2	\$26,131	1.2
Insurance	\$37,546	1.7	\$37,546	1.7
Advertising	\$11,277	0.5	\$11,277	0.5
Dues and subscriptions	\$100	0.0	\$100	0.0
Travel and entertainment	\$7,431	0.3	\$7,431	0.3
Office expense	\$9,589	0.4	\$9,589	0.4
Professional fees	\$19,444	0.9	\$19,444	0.9
Truck expense and equipment rental	\$46,954	2.1	\$140,762	6.3
Land rental	\$2,112	0.1	\$2,112	0.1
Contributions	\$0	0.0	\$0	0.0
Bad debts	\$0	0.0	\$0	0.0
Miscellaneous	\$87,956	4.1	\$87,956	4.1
Total expenses	\$2,008,104	90.5	\$2,257,044	101.5
Net returns	\$211,152	9.5	(\$27,788)	-1.7
Greenhouse area (square feet)	138,759		138,759	
Greenhouse space used for production (%) (e.g., enter 75% as 75, 125% as 125)	82		82	
Weeks in operation (52 if a full year)	40		40	

Table 2. Income statement data from a survey of Northeast greenhouse growers in 2003 entered into the Rutgers Greenhouse Cost Accounting program.

increased energy costs and prices as well as changes in marketing mixes, or other changes you are considering.

A Real-Life Example

I used figures from a 2003 survey of Northeast greenhouse growers with an average size of 138,759 square feet, sales of \$2.2 million and net returns of \$211,152 or 9.5 percent (Table 2).

Since 2003, the cost of fuel oil has tripled. The cost-accounting program allows you to make changes in the data to see how it affects net returns and financial ratios. I inflated fuel prices to 2008 levels and kept other costs and prices the same. Net losses are \$27,788 or -1.7 percent. Using the program to test hypotheticals shows that if we take these 2008 costs but inflate prices of crops by 5 percent, the net

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Ratio	Actuals, 2003	Fuel increase, 2008	Fuel increase, 2008 5% price increase
Net Income	\$211,152	(\$37,788)	\$73,175
Gross Margin	34.2%	34.2%	32.6%
Profit Margin	9.5%	-1.7%	3.1%

Table 3. Ratios using 2003 data from Northeast greenhouses, changes to ratios by inflating fuel prices to 2008 levels, and inflating fuel prices to 2008 levels and increasing prices by 5 percent.

Input section 2 Crops						
	Petunia flats	Marigold flats	Geranium flats	Geraniums (4-inch pots)	Poinsettias (6-inch pots)	Cut flowers (bunches)
Number of units started	50,000	50,000	50,000	100,000	126,000	26,136
Square feet per unit	1.64	1.64	1.64	0.11	1.00	1 acre
Weeks to grow	8	6	13	6	15	15
Percent sold	0.98	0.98	0.98	0.95	0.95	0.95
Sales price	\$7.93	\$7.00	\$11.73	\$1.20	\$5.00	\$4.00

Table 4. An example of input section 2, which includes information on specific crops, from the Greenhouse Cost Accounting program.

returns become positive (Table 3). While the figures in Tables 2 and 3 are actual results of surveys of Northeast growers, Tables 1 and 4 are hypothetical production schedules constructed to match the actual income from the 2003 surveys. The program allows you to look at "what if." For example, all crops — both greenhouse and outdoors — are profitable in the

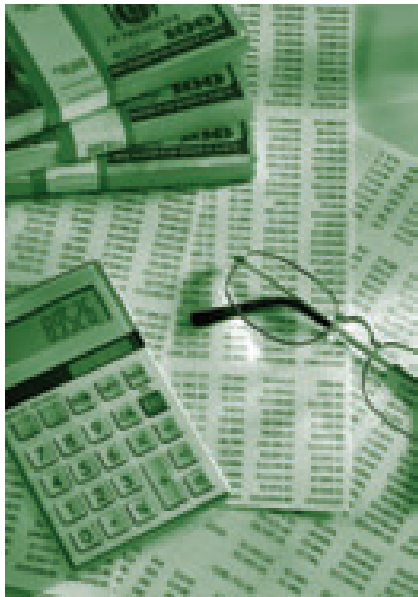
2003 example (Tables 1 and 4). But when we increase energy costs to the 2008 level, geranium flats and poinsettias become unprofitable.

The program gives these results on a per-crop, per-unit and per-square-foot basis. If we then increase prices by 5 percent, the net return becomes positive (Table 3), but poinsettias are slightly unprofitable, losing one cent per square foot a week.

With rising fuel costs and competitive markets, you as the manager need to pay close attention to the bottom line and how changes in costs impact it. The Greenhouse Cost Accounting program will allow you to do "what if" planning on paper instead of making bigger, real mistakes in the greenhouse. **GPN**

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