

Per-Unit Cost Analysis Necessary for Profitable Decision Making

by

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Every year about this time, farmers across the country hunker down in their offices, real or make-shift, and begin the task of evaluating the results of the season's work. Yields are calculated, expenses totaled, checkbooks reconciled and appointments with bankers and accountants set. The analysis begins in earnest to measure the effect of new varieties, spacing, fertilizer plans, tillage practices, pest control, feed rations, and so on. All of this work should focus on answering one fundamental question at the enterprise level: Did we increase our gross margin (income after expenses) with the changes we made?

For crops, this analysis requires growers to shift their thinking from costs per acre to cost per-unit of production. All season long, inputs have been measured and quoted on a per-acre basis. This is largely because acres are fixed while yields are unknown until the last field or block is harvested. Fertilizer and chemical rates, custom hire, labor costs, seed and consulting are often applied and quoted on a per-acre basis. Since income is always priced on a per-unit basis, converting costs to a per-unit basis provides the only useful measure of profitability within an enterprise.

For example, consider two farms producing corn for \$230 per acre. Farmer "A" gets a 90-bushel yield and farmer "B" gets a 130-bushel yield. It cost farmer "A" \$2.55 to produce a bushel and "B" \$1.77. If corn was priced at \$2.35, the first farmer lost \$.20 per bushel and the second made \$.58. If farmer "A" thinks he's okay since it cost him the same per acre as farmer "B", then he is in for a big surprise.

To find the economic effect of a new crop fertility program in corn production for example, one needs to consider both yield and cost. A comparison of cost per-bushel of a nutrient program before and after the change may show that although yield declined, cost per-bushel decreased and gross margin increased.

There are problems associated with per-unit cost analysis. First, it is sometimes difficult to figure out if yield changes are due to management practices or due to externalities (economist lingo for things beyond your control) such as weather. Track costs over time or compare management methods between fields during the same growing season to reduce the effect of externalities.

The second problem is that the process is tedious. For example, to calculate herbicide cost in a bushel of corn one needs to look up the invoice and convert the cost from gallons (purchase units) to ounces (application units). Then, from spray records, multiply the number of ounces applied per acre times the cost per ounce. The result is cost per-acre. Divide this by average yield to obtain cost per-bushel. Simply repeat this process for each of input, including fuel, labor and interest, and apply some fixed cost to the enterprise.

Fortunately, there are several very good computerized crop record keeping systems to reduce the time needed to complete a per-unit enterprise analysis. With the right tools and positive attitude, you can make this year's evaluation process more productive and valuable.

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