GROWERTALKS

Features

5/29/2015

Costing at Your Fingertips

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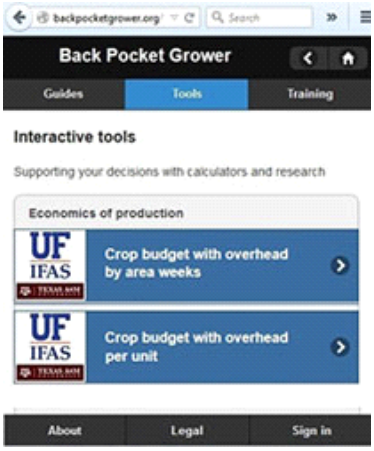

Can you imagine making pricing and product mix decisions without knowing how much it costs to grow your products? Direct costs—such as the plant material, growing substrate, container and label—should be simple to estimate. Allocating overhead and labor to individual units produced can be a challenge, but there are several approaches to choose from.

To help simplify calculation of the cost and profitability of individual crops, we've developed two apps in BackPocketGrower.org (Figure 1) that can be operated from a smartphone, tablet or desktop computer. Last month, we discussed the "Crop budget with overhead by area weeks" app for those of you who use square foot weeks (production area * production time) to allocate overhead. For growers who use other budgeting approaches, these can be accommodated in our "Crop budget with overhead per unit" app in Back Pocket Grower.

Divide up your overhead between profit centers

In other industries, companies that have multiple profit centers (such as an automobile dealer with separate departments for parts, service, new vehicle sales and used vehicle sales) use a variety of alternative approaches for allocating overhead. For a discussion of these approaches, we recommend the article by Putra (2008 http://accounting-financial-tax.com/2008/08/overhead-allocation/), which describes how companies allocate overhead to different profit centers based on the percentage of sales, percentage of gross margin (sales minus direct costs), percentage of labor or calculating overhead specific to each profit center, in addition to square footage. Other industries choose between several overhead allocation models because all have pros and cons.

In many greenhouse operations, there are also multiple operations that can be considered as separate profit centers. For example, you might have some combination of wholesale greenhouse, landscape, retail garden center, hydroponic vegetable production and young plant or tissue culture operations.

We suggest dividing up your annual overhead between profit centers and then decide on an approach that makes sense for your business on how to allocate overhead to products and services. In most cases, we recommend you divide between profit centers based on their percent of total business gross margin. That

way, the most revenue-generating products and services are allocating the most overhead. For example, if the wholesale greenhouse bench crop brings in 80% of the gross margin, then these crops need to cover 80% of the overhead.

Whatever approach you take, make sure that you consider overhead when calculating the cost of products or services within that profit center. If your approach is too complicated, it probably won't be workable and you'll under- or over-estimate costs. If your approach is too simplistic, you might make incorrect pricing and strategic decisions. For example, if you don't consider overhead, you might underprice your product and lose money on every unit sold. Believe it or not, we've seen this scenario played out in multiple greenhouse operations through the years!

Once you allocate overhead among profit centers, decide on the most appropriate way to allocate overhead to units in each profit center. The most common ways to allocate overhead cost to each unit of plant product produced include:

1. Area Weeks: This is most commonly referred to as "the square foot week concept." Simply add up the area (square feet or square meters) each week filled with plants to obtain the total area weeks filled with plants over the year. Divide total annual overhead (including labor) by the annual area weeks filled with plant products to obtain an overhead cost per area week. Now, multiply by the space * time per unit of each product you grow.

For example, if cost per square foot week is $0.40 and a 4-in.-diameter potted crop takes 6 weeks to grow at a spacing of 4 plants per square foot (0.5 sq. ft. per unit), then overhead cost equals $0.40 * 6 * 0.5 = $0.60 per container.

Area weeks are generally the most accurate approach to allocate overhead for crops grown on the greenhouse bench or floor.

2. Area: Divide total overhead (including labor) by the area (square meters or square feet) filled with plant products. Divide annual overhead by the square feet filled with crops to get an overhead cost per square foot. Multiply by the area per unit of product.

For example, if the cost per square foot is $2, and a product requires 2 sq. ft. of space, the overhead equals $2 * 2 = $4. This is simple for businesses where there's only one crop cycle per year. However, this approach doesn't take into account production time if you have multiple crop turns in the same space.

3. Equivalent Units: Divide total overhead (including labor) by the number of units produced to calculate an overhead cost per unit. This approach is simple, so long as all units require a similar production space and time. You can adjust the overhead allocation between product type by considering a standard unit (such as a 1-gal. equivalent unit [EU]) and adjusting for different product sizes.

For example, a 1-gal. container that takes six months to finish could be your standard 1 EU at $1 per container. However, a 3-gal. container might require 12 months and 2 sq. ft. and be assigned 4 EU and $4 per container based on space and time compared with your standard 1-gal. container. Define all your product

size categories (for example, 1-qt., 1-gal. and 3-gal.) and set an EU conversion factor per unit for each size category. Calculate total EU by multiplying the number of units of each size category by the EU per unit and adding these together. Divide annual overhead by the total EU to get an overhead cost per EU.

4. Multiplier of Direct Costs: Multiply the direct costs (plant material, container, growing substrate, labels, etc.) per unit by a fixed value. For example, some growers have roughly a third of the costs in their income statement as direct materials, a third as labor and a third as fixed costs. In that case, a very rough estimate for overhead (including labor) would be twice the direct costs.

For example, if direct costs add up to $1, and you have a multiplier of 2, then overhead equals $1 * 2 = $2. This doesn't take into account time or space required by different product types. It's quick and dirty, and unlikely to be accurate.

> For cost estimates using the area weeks approach, use the "Crop budget by area weeks" app. For other approaches, use the "Crop budget per unit produced" app. We've developed an overall costing model for greenhouse businesses that takes these details into account, but this is beyond the scope of the simple apps in Back Pocket Grower. We're planning on providing an online training course in 2016 to help growers cover basic and detailed approaches to greenhouse cost accounting. Contact the authors if you're interested.

Beyond a simple app …

Don't let complexity in overhead allocation stop you from calculating the profitability of your products using a simple overhead cost per square foot week or cost per unit. You can add more detail as you dedicate time to analyze your business. As the saying goes, "You can't do everything at once, but you can do something at once."

Regardless of the approach you use, you can use one of our apps and enter overhead as an input into the cost calculation.

If you want to get very detailed in overhead allocation, within the category of wholesale plants, you might consider greenhouse bench crops, hanging baskets and field crops as separate profit centers. If you have a highly seasonal business, you can even consider further dividing up the greenhouse bench crops as two profit centers for peak season (typically January to June) and off-season (typically July to December) seasons.

Why might you allocate overhead separately for these crop types? Because (a) not all crops generate enough gross margin to cover the same square foot week cost (you can think of this as "rent" from the business); and (b) overhead differs between growing structures and seasons. For example, how do you decide a "fair" amount of space to assign to hanging baskets for square foot week calculations, compared with bench

crops? In the off-season, when spacing isn't limiting, how much does overhead cost really go up if you provide crops with more bench space that would otherwise be empty? Should chrysanthemums grown on drip tape and landscape fabric outdoors have the same overhead cost per square foot week as bedding plants in heated greenhouses in the spring? **GT**

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