

COSTING VARIABLES IN PROPAGATION TECHNIQUES

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Probably one of the most difficult areas in nursery work is the area of accounting. We would rather be out in the nursery or greenhouse doing something productive than sitting at a desk making notes or filling out record forms. Of course, all of us have perfect memories and remember the context in which a decision was made several years after the fact. It is with this sarcasm in mind that I approach the subject of record keeping and costing variables.

I look back over the years at Zelenka Nursery and see how propagation has evolved. Think for a moment about your experiences. Some are pleasurable memories that give you great satisfaction, while others still give you a twinge in the pit of your stomach over how a project turned sour. What did you learn from those experiences? I was told when I first started propagating that I would learn propagation by killing cuttings. However, I also understood that when I did kill cuttings, I would not do it again the same way!

Setting up a propagation record of all the variables I had control over insured uniformity from year to year and made it easier to identify the problem variables that might be changed to improve the crop. The variables I keep track of now include:

- Source of cutting wood
- Quantity and date stuck
- Flat, bed, or container size planted and location
- Medium
- Density (spacing of cuttings)
- Hormone
- Stripped or unstripped
- Terminal or basal cutting and length (inches or nodes)
- Quantity and date pulled and/or potted
- Graded sizes
- Customer or department shipped to

These are records you would expect propagators to keep. But how do you, as decision makers, determine what is the best method of propagation.

Cost is one aspect that is often overlooked by everyone except the bean counters. It is easy, especially in a large organization, to be disassociated from the cost of a procedure, or more importantly, the cost of changing a procedure. Knowing what labor costs is

difficult enough with all the insurances, taxes, and the time it takes you to fill out the government forms. But, do you allocate maintenance costs, grounds upkeep, depreciation, etc. into your formula for costing the variable options you're considering? At Zelenka Nursery our costing is based on loaded labor rates (see chart). The expenses of the corporation officers and the grounds maintenance costs are allocated by the percentage of direct hours worked in the propagation department to the total direct hours of the nursery. The migrant expenses are added by the percentage of migrant payroll used in the department. The maintenance departments are allocated by the depreciation percentage of the department to the nursery total. All of these allocated expenses are added to the general ledger expenses of the department for a total expense. This is divided by total direct hours to give a rate per hour that we can use in projecting costs. Since expenses change annually with production, the loaded labor rate changes as well.

In the mid 70's we instituted a reasonable expectancy (RE) program for most production activities. We timed procedures, figured crew averages, and developed rates per man hour. These rates are used daily in assessing a crew's performance, monthly in budget reviews, and annually in projecting labor requirements. Labor is the single most expensive item in our budget so we pivot all of our costing on labor hours.

Now that we have established our costing basis and can figure the cost of a procedure, what do we compare it to? The value of the crop being produced. That value can be the price you have set, if you sell the crop, or as in the case of Zelenka Nursery, the cost of buying the crop if we did not produce it in-house.

There comes a time when you have to answer some tough questions about the standard operational procedures you employ. That came for us in the winter of 1986-87. We enlisted the aid of Dr. William H. Carlson, Department of Horticulture, Michigan State University. He had developed a system of self analysis with bedding plant and holiday plant crop growers. He was anxious to work with us and implement his system of action plan/cost benefit analysis in a woody ornamental nursery. At the onset we established parameters by stating our mission and beliefs. We also identified our strengths and weaknesses, both internally and in the nursery community. Finally, we focused in on six of our most critical weaknesses. Dr. Carlson acted as the catalyst by posing provocative questions and steering our answers to stay within our stated mission and beliefs. The planning process used by this system is called an action plan. It states the goal and is a step-by-step procedure for producing a crop. With each step, it identifies the person responsible, due date, and completion date. It forces the person

doing the planning to think out the details in great depth. Coupled with the action plan is the cost-benefit analysis. We projected three years in the future and valued our crops at the price we would pay to have them contract-propagated. Using our RE's and loaded labor rates (Figure 1) we projected costs, figured revenue, and calculated fixed assets required. This was all performed by the propagation department in greater detail than our accounting department does. When the exercise was completed, we verified the results with our cost accountant. Armed with all this data, we were able to more analytically assess our six most critical weaknesses and write action plans to improve each situation.

We now have a system established that is accepted as a critical tool in assessing change. Several basic procedures have undergone scrutiny with this thinking. Examples include:

- Stripping versus not stripping cuttings
- Medium selection (sand versus perlite)
- Preventative pesticide usage (targeted sensitive crops)
- Direct sticking in cells or containers

We did not necessarily make changes across the board, but employing this process made us more aware of the options, risks, and limits as well as costs. We also identified some dangerous assumptions. The use of percentages can be very misleading and using real numbers always paints a clearer picture. In our situation, if two items have different rooting percentages, it does not necessarily follow that the lower rooting percentage costs more to produce. Quickness of handling (labor) is a more expensive factor than rooting percentage and is a real cost drain to be dealt with.

Another dangerous assumption is making comparisons outside the parameters of our costing system. It is interesting to visit other nurseries and view the procedures. It is quite another matter to impose our costing values on their situation. We found it difficult enough for a group of Zelenka Nursery managers to agree on definitions and formulas within our circumstances. When we do identify areas needing improvement, or want to try a different procedure, it is written up as a research and development (R&D) project. It is followed through for three years with evaluations made at pre-determined intervals. Quantities and slight procedural changes can be made annually to refine and hopefully develop a more profitable means of producing our crops. After the third year a decision is made to cancel, continue, or adopt the project being considered. The span of time may seem quite long; however, the change that is made is quite predictable and cost effective.

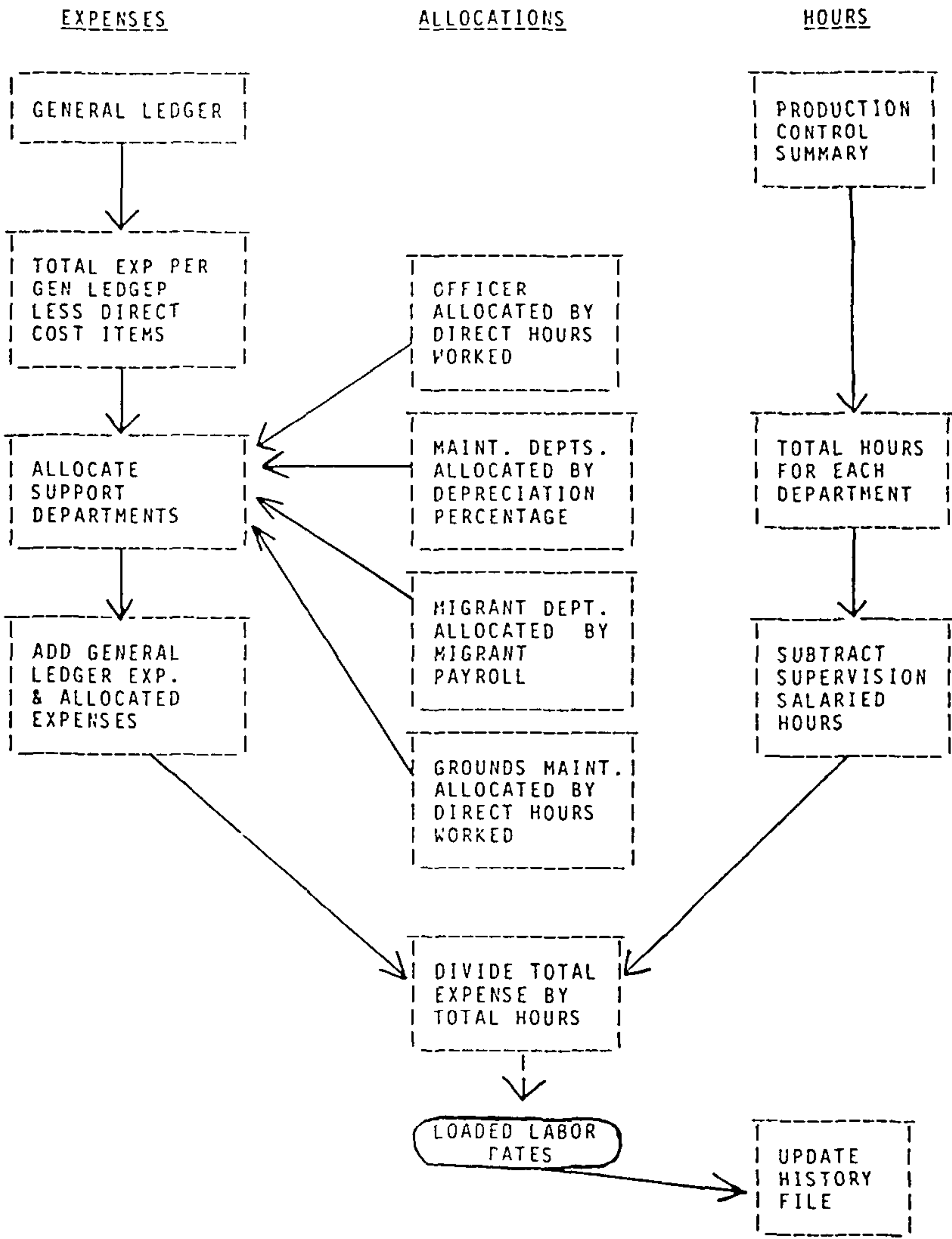


Figure 1. Loaded labor rates flow chart

I would like to be able to give you all formulas that would be THE right answer in costing your crops. Just like there is no right way to propagate a species, there is no one right way to figure the cost and set the price. We, as propagators, have to remember that we are businessmen and women. The importance of accurate record keeping and cost analysis may well determine what we grow. Likewise, it should determine how we market our product without selling ourselves short.