

When to Purchase Greenhouse Equipment: Factors to Help You Decide

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Many changes have taken place in the greenhouse industry during the past few years. Growers who are building today are taking advantage of better environmental control systems, more efficient glazings, movable benches and labor-saving devices. One of the challenges that the industry faces involves keeping the facilities and methods updated so that it can remain competitive.

New equipment is continually being introduced by manufacturers and suppliers. Just attend one of the trade shows, and you will see a wide variety of devices from carts and wagons to precision seeders and computers. The many alternatives that are available frequently make the selection a difficult and time-consuming process which is put off until later. On the other hand, the benefits of employing this equipment can reduce the production costs and improve plant quality. The following factors should be considered when deciding if this is the right time to purchase a particular piece of equipment.

Reduction in Management Time

Growers spend a considerable amount of time making routine decisions. Do the plants need to be watered? Should the vents be opened? Is it time for the lights to be turned on? Simple, low-cost devices such as irrigation controllers, thermostats and time clocks can make these decisions for you. Keep track of the time you spend each day at these chores and then select one for automation.

Size of Your Operation

Whether you have 10,000 square feet or 10 acres of growing space, there is equipment available that will reduce labor and improve efficiency. The areas of automatic controls and materials handling equipment should be considered first. Carts, roller conveyors, a pallet truck and a small tractor with a bucket loader are items that can be used by small or large operations, are relatively low cost and have use throughout the year.

Availability of Labor

In some parts of the country, this is the limiting factor to expansion of a business. There is competition for the people who are unemployed. Other types of businesses frequently offer better working conditions or greater benefits. Equipment can be used to increase the productivity of the help that you now employ. A fork lift to handle pallets can save many hours of hand labor over a year. For large operations, an electric cart can be used as a personnel carrier or for moving items longer distances.

Heavy Tasks

Lifting and carrying heavy objects is tiring and reduces productivity. Where possible, materials heavier than fifty pounds should be moved mechanically. Examples include 1) using a conveyor to carry plants being shipped from the ground to truck height and 2) using carts or wagons to move growing mix, filled containers or cartons of pots.

Repetitive Tasks

Repetitive, tedious or time-consuming jobs should generally be considered the first to be mechanized. A flat or pot filler is a good example. Besides doubling or tripling the output per man-hour, the containers are more uniformly and evenly filled than by hand.

Peak Work Periods

Mechanization can be used to help you through the peak spring and holiday periods. Seasonal help is frequently difficult to find, and the extra paperwork adds to an already overloaded work schedule. The use of carts or conveyors to help move plants into or out of the greenhouse can reduce the need for extra labor during these periods.

Lower Production Costs

Letting machinery replace some of your labor force can result in a lower cost per plant. A piece of machinery can work for long periods of time without stopping for a coffee break. An analysis of the time that will be saved and the per unit cost needs to be made. Good records on the time required to do certain tasks is helpful in determining which jobs should be mechanized. Care should also be taken to see that bottlenecks will not be created.

Improved Quality

Equipment can often be used to improve the quality of the plants that are produced. A precision seeder for plug trays can accurately place one or more seeds per cell at a constant depth. This will result in uniform seedlings that are ready for transplanting at one time. A well-engineered irrigation system with fertilizer injector will uniformly feed all the plants on a bench or in a greenhouse better than can be done with hand watering. Look for tasks in your greenhouse where decision making can be better done by a control device.

Increased Production

There are many pieces of equipment available that will increase your production without requiring additional help. For example, at the request of a local grower a device was developed to size ivy cuttings before sticking into a propagation flat. Prior to development of the machine, eight people were employed with shears to make the cuttings needed to keep the planting crew busy. The machine accomplished the same job with one operator. The machine cost about \$1,500. In your own operation, try to mechanize the jobs that use the largest amount of labor.

Reasonable Payback Period

The payback period is the time required for the savings to recover the initial capital investment. It is obtained by dividing the total capital investment including installation cost by the annual cost savings. A payback period of less than three years is excellent; three to five years is good. The cost savings can be estimated from the projected labor reduction less the equipment operating costs.

Once you have decided that it is time to upgrade your operation with some new equipment, take time to evaluate the many alternatives that are available. Visit other growers, attend trade shows, talk with equipment vendors and read articles on what others have done that can be applied to your own business.

