

Table Systems for Indoor and Outdoor Crops

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INTRODUCTION

Anglia Alpines grows not only alpines and herbs but a wide range of other hardy and nonhardy ornamentals, including poinsettias as a cash crop for Christmas. We grow under glass, outside in the open, and under polythene. The majority of our pots are 9 cm and 13 cm, normally placed pot thick.

On Anglia Alpines' original site, plants were grown mainly outside and under polythene but after an exceptionally hard winter one year a decision was made to try a secondhand glasshouse which could be used to provide frost protection if necessary. The excellent quality and the speed of growth which resulted were amazing. Indeed, growth had to be controlled by ventilation or by moving the plants outside once the first plants were big enough.

By this time the increasing cost of labour — rising at a much greater rate than inflation — was also becoming a concern. A 25-m walk, carrying 2 trays of 18 plants of 9 cm, was costing about 0.25p per plant. To move 1 million plants only once would at that rate cost £2,500 (\$4075 U.S.A.) — and remember the plants need to be moved many times during the growing cycle.

REASONS FOR SELECTING A TABLE HANDLING SYSTEM

When the nursery expanded by developing a green-field site in 1989 the plan included a much greater area under glass and polythene as well as a larger outdoor growing area. A tour was made of nurseries in Denmark, Holland, and Germany for ideas. The mobile benching systems which were widely used for both growing and handling, under glass and outside, were most impressive. Note was also taken of other handling systems, such as computer guided cranes which could select a full table from the middle of a glasshouse, and specially designed lorries to load, transport, and unload tables of plants from the growing area to the order processing area.

It was realised that such systems would help Anglia Alpines to minimise the cost of moving plants about, especially from one growing environment to another. In addition, such table-based systems were sufficiently adaptable for use for a whole range of crops which would allow for future changes in the product mix.

DESIGN AND LAYOUT

This is the most critical factor and a good deal of attention must be paid to design and layout before installation begins as it is very difficult, if not impossible, to correct mistakes later.

Points to consider include: the position and frequency of the transit lines; the width and length of the tables and the fit with your pots and trays; the working height in relation to your own staff; the crop mix and how it might evolve; storage of empty tables and how to clean and feed these in and out of the system.

Finance must also be considered. Mobile benching is not cheap — tables cost about £500 (\$815 U.S.A.) each and transit lines a similar amount though rail is quite cheap.

ADVANTAGES AND DISADVANTAGES

Disadvantages. It is slow to change from the rails to the transit lines and back again, although it is possible to motorise this operation. Both full and empty tables can be blown along the rails by even mild winds. Plants outside will also suffer more cold weather damage perched on tables than on the ground. Finally climbing over the rails is a real nuisance — and this is necessary when inspecting the plants, weeding, pinching, and staking, and for order selection.

Advantages. The advantages are in both production and handling. In production there is an increase of up to 50% in cropping area because you need less space for paths. The tables are isolated for pest, disease, and weed control, and can be easily moved elsewhere if necessary. Many different kinds of irrigation regimes can be used, including ebb and flood, irrigation booms, capillary matting, and hand watering.

In handling terms it is possible to put pots directly from a potting machine onto the table automatically at very high densities. It is remarkably easy to move plants about into different environments — hotter, cooler, under lights, and in shade, etc. Three people can move half a million 9-cm plants in a morning from one glasshouse block to another. And in straight lines it is perfectly easy to push 20,000 9-cm pots at walking speed. Plants can easily be moved from under glass to outside, and vice versa which is very useful for hardening off, and also for controlling growing speed and appearance. It is possible, for example, to root rapidly under glass and then finish off outside.

Having the crop at bench height also cuts down on backache, with plants easy to see at convenient working heights.

CONCLUSION

The combination of glass and mobile benches definitely improves plant quality and this author would certainly make the same investment again.