

new demands by the fruit growing industries. The recreation and amenity horticulture industries open up entirely new fields for Australian horticulturists.

The last 25 years has seen a real revolution in the horticultural industries in Australia, but with a rational integration of skills, science and economics in our horticultural education, research and extension, the horticultural industries can look forward to a productive and profitable future.

Plant propagation will play an increasingly important role in this future of horticulture with the change in emphasis from fruit and vegetable production to include amenity horticulture. By considering the sorts of changes we have seen in fruit production we should be able to maintain a more balanced development of the propagation industry by ensuring integration of all the inputs (skills, science and economics) in our education and in our industry.

## WHERE IS THE NURSERY INDUSTRY GOING IN YEARS TO COME?

IAN GORDON

*Department of Agronomy  
Queensland Agricultural College  
Lawes, Queensland*

The progress made in the Australian nursery industry over the past 25 years has been quite remarkable. There is no reason to suppose that this same rate of progress will not be maintained in the future but the industry will need to adapt to new social, cultural and economic situations which will exist in the future.

I have no crystal ball and am reluctant to predict what the future holds for the industry. Instead, I would like to pinpoint some of the areas where developments can be made in the industry. There are six which I think deserve attention: Education; Research and development; Business management; Nursery efficiency; Specialization; Marketing.

**Education.** Education and training are of vital importance at all levels within any industry, including the nursery industry. At management level there is a great need for more graduates who can integrate basic plant sciences and business efficiency to develop sound nursery production techniques. At supervisory level there is a need for more personnel with a detailed knowledge of nursery production techniques; and at nursery worker level it is vital that we can recruit and train workers to a high standard in routine nursery operations.

The educational institutions in most Australian states are becoming more aware of the need to provide specialist courses for the nursery industry and I am quite certain that this trend will accelerate in the future. In looking to the future I am confident that adequate numbers of well trained personnel will be produced to meet the needs of the industry at management and supervisory levels. The problem area in education in future years will probably be centered around the training of nursery workers. It is virtually impossible for the Colleges to undertake the realistic training of large numbers of nursery workers, even if the industry would be prepared to release them from work for this purpose. Speaking as an educator, I would question whether it is the job of the Colleges to train nursery workers. I believe that the employer must ultimately accept the responsibility for training his own staff. Educational institutions are well suited to developing knowledge and understanding of basic principles, teaching people to think for themselves and to integrate information from different sources. They are not so well suited to developing practical skills and the best place to develop these is on the job.

One possible solution to the problems of staff training is for several nurseries located near each other to cooperate and employ a qualified training officer whose job is to carry out training of nursery workers in all practical aspects of nursery production, irrespective of age or experience. The great advantage of this system is that the training is carried out in the nurseries in which these people work, using the machinery and equipment in use in that nursery. Group training officers are widely used in several overseas countries with a great deal of success, but it does place the onus for training directly on the employer.

**Research and Development.** Of all the primary production industries, the nursery production of plants has traditionally been the Cinderella, with very little of our resources being allocated to nursery research; therefore little or no research information has been generated from within Australia. In trying to improve production techniques, nurserymen have been forced to adapt research information obtained from overseas, principally the U.S.A.

This situation is changing and there are now research establishments carrying out several very useful research projects but, in looking to the future, the present level of research is by no means enough. This is not intended as a criticism of the existing research stations and I am sure that the research staff will agree with me that their numbers must be increased and they must have more and better facilities to enable them to tackle the highly complex problems which face the industry.

Industry organizations such as the federal and state nurserymen's associations must continue to press strongly for a better service to the industry. These associations are already making a significant contribution of funds and support for existing research and this may, perhaps, be expanded in the future.

Nurserymen should also expect a better service from the fertilizer and plant protection companies than they have received in the past. Research and development work on nursery crops must be given a higher priority by these companies.

**Business Management.** Many nurserymen originally entered the industry because of their love of plants and because they enjoyed working with plants and over the years they acquired a working knowledge of business management. I think it fair to assume that the nurseries of the future will be much more sophisticated and will have to be run as efficient business units. In a small nursery, one man may be able to manage both the plant production and the business side of the enterprise, but in the larger nurseries it will become more and more necessary to separate these two sides of the enterprise and have one person with responsibility for the finances and one person responsible for plant production.

**Nursery Efficiency.** The development of other industries may give some indications for the future development of the nursery industry. At present we have a very large number of comparatively small nursery units operating within Australia. I have been unable to find reliable figures but the number of nurseries cannot be far short of 1000. This is an incredible number for a country the size of Australia and it is a situation which must give cause for alarm. Quite simply, there are too many small nurseries. Many of these nurseries produce high quality plants and operate very efficiently but I am sure that you are all aware of many badly run nurseries which produce very poor quality plants. The people who produce poor quality plants do not just harm themselves, they harm the industry as a whole.

I am convinced that a drastic rationalization must occur within the industry to rid us of these bad apples. This would lead to the elimination of some existing nurseries but the ones which remain would be left in a much stronger and healthier state. This pattern has been seen in a number of other industries and I am certain that it will occur in the nursery industry. Perhaps it has already started.

Today's somewhat haphazard methods of growing will gradually be replaced by precision growing techniques which are designed to increase the quality and uniformity of produce. Nurserymen must take more advantage of new production techniques such as plant tissue culture and virus-free clonal propa-

gation material. They must make more use of advances in plant protection to reduce the percentage of plant losses and research information must be made available to the industry and must be utilized.

In the minds of many people, nursery efficiency is directly associated with nursery size, the idea being that the bigger the nursery the most efficient it can become. Concepts of what efficiency is are changing dramatically, basically because we have not been including all the factors in our calculations. Consideration of absolute availability of resources, energy and sociological factors must be considered, so the small unit may be more efficient in future. Many large organizations become extremely inefficient and either fail or persist by monopoly and political influence rather than by efficient operation or by providing what the consumer wants.

**Nursery Specialization.** Perhaps one of the major causes of poor quality plants being produced by nurseries is that many nurseries attempt to grow too diverse a range of plants. Growing too many types of plants means that insufficient attention is given to the needs of individual plant types. Many nurseries already specialize in a small range of plants and these are usually the nurseries which can turn out the best quality plants. Undoubtedly, specialization increases nursery efficiency and also enables growers to build up a reputation for supplying quality plants. The trend towards specialization will continue and it is quite likely that many nurserymen will operate what is virtually a mono-culture.

In Australia, a large proportion of the production nurseries are located in the southern states, obviously because the largest concentration of potential plant buyers reside in this area. Climatically, these nurseries are probably in the worst part of the country and this necessitates the construction of elaborate and expensive propagation and growing on facilities. Winter heating bills and other operating costs are constantly rising and these nurserymen are caught in a vicious circle of spiralling costs.

Australian nurserymen do not make enough use of the natural climatic advantages which part of the country offers them. The tropical and sub-tropical areas of central and north Queensland and parts of Western Australia are much more favorable for the rapid growth of plants and nurseries located in these regions could utilize simpler and cheaper growing structures without the crippling fuel bills. There is a parallel with the U.S.A. where a large proportion of indoor flowering plants are produced in the favorable climates of Florida and California and distributed throughout the country.

I am not advocating the elimination of the large southern production nurseries but I do think that much of the basic plant propagation could be carried out in the more climatically favorable parts of the country with small plants being shipped to the southern nurseries for growing on to a salable size. This is simply another form of specialization, but instead of specialization simply on the basis of plant species grown, there is also specialization at the different growth stages of the crop.

**Marketing.** There are many improvements in all forms of plant marketing constantly being introduced and these have a major impact on the industry. The garden centre concept and the retail plant supermarket are two areas where massive expansion has already taken place but there is still scope for considerably more expansion in the future.

The primary aim in plant marketing must be to create an expansion in the potential plant market. Australians in general are not nearly as plant conscious as the citizens of many other countries but a great deal can be done to improve this by constructive advertising.

There is no real difference between a plant nursery and most other types of manufacturing industry. In all cases a product is manufactured (or grown) and then it must be sold. The nursery industry can learn a great deal by studying the advertising methods and sales techniques employed in other Australian industries. Sales promotion must play a much greater part in creating a demand for our nursery products.

I also feel that some retail plant outlets tend to alienate many potential customers by charging exorbitantly high prices for plants. To quote two examples: during the recent Toowoomba Carnival of Flowers, a local retail nursery was charging \$18.50 for 12" high *Phoenix roebelenii* palms in 8" pots. The nurseryman who grew the plants probably received around \$5 per plant. I also heard of another instance where a garden centre bought in container grown citrus trees for \$3 and immediately sold them for \$10.50. No doubt all of you could quote similar examples of gross overpricing. I firmly believe that both wholesale and retail sectors are entitled to a fair profit on stock which they sell, but rip-offs such as these do considerable damage to the industry as a whole. If we are really trying to expand the potential market for our produce then we must make greater efforts to secure export markets. If the New Zealand nursery industry can expand in that direction, why not the Australian?