

HORTICULTURAL EDUCATION IN THE NORTHERN TERRITORY

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Abstract. There is a lack of horticultural training in tropical Australia. The Darwin Community College commenced apprenticeship training in 1980 and a certificate course in tropical horticulture in 1983. The future of horticulture, particularly in the areas of field cropping and nursery production, appears good and these courses are providing trained personnel for this developing industry.

INTRODUCTION

The horticultural industry in the Northern Territory (N.T.) is destined for a bright future. The regreening and population growth of Darwin since the devastation of cyclone Tracy in 1974 has resulted in a solid nursery sector being established and nurseries are now located in most of the major centres of the N.T.

Since the granting of self-government in 1978, with the assistance of the N.T. Department of Primary Production, C.S.I.R.O., and N.T. Agricultural Development and Marketing Authority, the fruit and vegetable production sector has also been finding its feet. The landscaping, cut flower, parks and recreation sectors are also horticultural growth areas.

In all aspects of horticulture in the N.T. there is a need for suitably trained staff. Darwin nurserymen recognized this need in the late 1970's and through the Northern Territory Nurserymen's Association made representations for the establishment of a local horticultural course at a trade level.

DARWIN COMMUNITY COLLEGE

After several years of being involved in a succession of rather limited short courses, in 1982 Darwin Community College commenced the first formal Horticulture Apprenticeship Trade Course.

The Horticulture Section of the Darwin Community College School of Trades is now responsible for all formal horticultural education in the N.T. No courses are at present available in other centres although it is anticipated that training may become available in Alice Springs at the Community College of Central Australia and in the Katherine District at the Katherine Rural Education College at a future date.

The Community College of Central Australia conducted the South Australian part-time Certificate of Amenity Horti-

culture for three years to the end of 1981 but is at present not involved.

Currently, Darwin Community College is involved in horticultural education at three levels — an apprenticeship award course, certificate award course, and other non-award courses.

HORTICULTURE APPRENTICESHIP TRADE COURSE

In contrast to the larger southern states, there is only one declared trade of horticulture in the Northern Territory. The apprenticeship training period runs for a duration of four years and the three year Horticulture Apprenticeship Trade Course may be undertaken anywhere within that period. Any person over the age of 15 may be apprenticed.

After looking at the models then available from other Australian states, the trade course advisory committee in 1979 selected the Victorian horticultural course guidelines, subject to various modifications appropriate to N.T. practices and environmental conditions being carried out by the first appointed lecturer in horticulture.

Because the number of horticultural apprentices in the N.T. at present does not justify separate nursery, fruit, vegetable, and other specialist streams, the course is of necessity a general one. However, students are given the opportunity in their assignments, projects, etc. of concentrating upon their own specialist area and, where numbers permit, will be grouped together according to similar employment areas.

Due to the long distances between population centres of the N.T., the course is conducted wholly on a block-release basis, at present 4 two-week blocks per year.

Each of the three stages contains 10 subjects, with the first stage of the course providing an introduction to the basic principles and skills involved in Territory horticulture. The other two stages are intended to provide added skills at a more advanced level with a gradual concentration on certain areas such as nursery container production, for example.

Because of the growth of the industry and the change in emphasis from a course initially providing for nursery apprentice training to one catering for fruit and vegetable and parks and recreation apprentices, the present curriculum is in dire need of review.

It is intended that any major changes to the N.T. Horticulture Apprenticeship Trade Course curriculum in the near future will be made in conjunction with current moves to implement an Australia-wide horticultural trade course "core curriculum".

Apart from the continuing lack of funds and staff, the main problem facing the apprenticeship course is the large geographical area from which its students are drawn. The environmental changes over the 1000 kilometre gap between Darwin and Alice Springs necessitates a separate plant identification list for students from each end. The arid climate of the Centre, with its hot summers and cold winter nights, allows the culture of a different, more temperate, range of plants to those grown in the tropical Top End, where the high day and night temperatures are reasonably constant, particularly during the humid wet season.

Most of the exotic plants now in cultivation in Central Australia are well-documented in regard to propagation methods, cultivation and so on, whilst in the the Top End there is a scarcity of information about many plants, especially exotic ornamentals and southeast Asian fruit and vegetable species. Lack of information about N.T. native ornamentals, particularly in regard to salt tolerance and so on, is common to both ends.

Compared to horticultural institutions in southern Australia, we also suffer from a general lack of printed, film, and audiovisual teaching aids, dealing with tropical conditions. However, this current lack of information concerning ornamental and edible horticultural crops, on the other hand, presents an exciting prospect for research and experimentation in education.

This brings me to the second level, that of the technician certificate.

CERTIFICATE OF TROPICAL HORTICULTURE

Since 1976 a need for a technician-level horticulture course has also been identified and, due to constant enquiries from prospective students and pressure from people in the industry, Darwin Community College was given ministerial approval to commence the course in 1983.

The course provides training over three years, part-time for people already employed in, or those intending to work in, the horticultural industry in tropical Australia, more particularly the Top End of the Northern Territory.

At present, most trained personnel have gained their qualification in southern areas or overseas with temperate crops and climates and face a period of adjustment and learning before they are working here at full potential.

Although the principles of horticulture are the same worldwide, its practice in an area such as the tropical Top End

requires a slightly different knowledge and approach. Thus the term "tropical" has been used to indicate that students successfully completing this "Certificate of Tropical Horticulture" are familiar with and have had experience in the production and cultivation of horticultural plants in a tropical monsoon environment.

The course is based on the long-established "Horticulture Certificate (Part-Time)" course conducted at Ryde School of Horticulture, New South Wales, which was also the model for similar T.A.F.E. "Certificate of Horticulture" courses now conducted throughout temperate Australia.

As shown in Table 1 the present course structure consists of four units per stage with additional excursions and assignments bringing the total course time to 1020 hours.

Table 1. Course structure for the Darwin Community College Certificate of Tropical Horticulture.

Stage 1 (8 hrs/wk × 36 wks)	
Horticultural Botany 1	
Tropical Soil Science	
Propagation 1.	
Tropical Horticultural Studies 1.	
Stage 2. (8 hrs/wk × 36 wks)	
Horticultural Botany 2.	
Tropical Plant Protection	
Propagation 2.	
Tropical Horticultural Studies 2.	
Stage 3. (8 hrs/wk × 36 wks)	
Compulsory Units	- Business Management (Hort)
	Horticultural Irrigation
Option 1	- Nursery Practice
	Tropical Nursery Crops
Option 2.	- Post-Harvest Handling and Marketing
	Tropical Horticultural Crops
Option 3.	- Turf Management
	Tropical Landscape Design & Construction.

OTHER NON-AWARD COURSES

Darwin Community College is also involved in conducting recreational courses for the general community in areas such as home fruit and vegetable growing, plant propagation, and landscaping. The college is also open to approaches from the industry to conduct specialist short courses, seminars, and the like.

The last area in which horticultural training will be provided is in the international sphere. Because Darwin is so close to southeast Asia and links between the Northern Territory and countries such as Brunei, Malaysia, and Indonesia are

increasing, it is intended that short-duration courses will be provided in aspects such as nursery container production, propagation techniques, and so on.

THE FUTURE

Since 1980, horticultural education in the Northern Territory has been placed on a firm footing and, with the basic courses now established, a steady supply of staff trained in various aspects of tropical and arid-zone horticulture should be available to keep the industry growing.

Whether providing horticultural education in our colleges or by distance education through the means of correspondence, adequate funding must be provided. This means that the industry must make its needs clear and present a good case to our government. Perhaps by the 1990's we might be offered a seat in the University of the Northern Territory.

HOW COMPUTERISED RECORD KEEPING CAN HELP THE PROPAGATOR

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Why the propagator needs records. The nursery industry in Australia has grown from being a small cottage industry in which the owner-operator "knew it all" from years of on-the-job experience, or simply "green thumb", to one which is literally a branch of agricultural science. As no scientist can exist without records so, in 1983, should no horticulturist.

The propagator needs records not just to prove a technique does or does not work but to compare techniques. In a time when making a profit is essential for survival it is enormously important to know exactly which plants are being produced economically, which techniques give the best results, and which operators are the most efficient.

What records are needed. The records needed are determined by the type of information required. Before collecting information, it is essential to ensure that it will be used.

Consider some of the questions which may be asked of the propagator and for which he may have to search out data in order to provide the answers:

1. How long does it take Plant A to reach a saleable size? Is this an optimum time? Does it vary with the seasons? Does