

As storage temperatures increased, weight loss increased, browning and fungal growth increased and the whiteness of the cut shoot decreased (Table 1). Dryness of the cut end depended on the amount of condensation and water loss. Dry matter accumulation was also lower at higher temperatures.

Shoots stored at temperatures lower than 10°C were of better quality than shoots stored at higher temperatures. My instinct was that shoots stored in the 5 to 8°C range were slightly better than those stored at 2 to 4°C. This temperature range is commonly used in refrigerated trucking to southern markets, and a storage period of nine days is adequate to reach southern markets.

This work still needs refining, particularly in the assessment of eating quality of the shoots after storage. This will hopefully be conducted next season.

Table 1. Summary of data from storage trial of fresh bamboo shoots

	Day 0 Weight (g)	Day 9 Weight (g)	Weight Loss (%)	Dry Coloured Fungi (% of cut surface)	Whiteness (5=white, 1=brown)	Dry Matter (%)		
<i>D. latiflorus</i> (n=4)								
Day 0	1302.34					5.86		
2 to 4°C	1601.85	1595.65	0.41	20	0	0	3.25	10.69
5 to 8°C	1085.30	1080.33	0.47	27.5	2.5	0	3	8.73
10 to 12°C	1331.89	1320.91	0.77	50	62.5	10	3.25	7.68
20 to 22°C	1106.93	1086.39	1.81	77.5	92.5	92.5	1.25	6.08
<i>D. asper</i> (n = 2)								
Day 0								5.83
2 to 4°C	1667.78	1660.76	0.43	10	0	0	5	6.59
5 to 8°C	1950.76	1937.71	0.69	40	5	0	4.5	6.22
10 to 12°C	2277.43	2255.47	0.95	15	90	10	3	6.51
20 to 22°C	1273.22	1240.06	2.60	5	100	100	2	5.67

5.1.8 ASIAN VEGETABLE RESEARCH

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This project was developed in response to a request from the Entomology Section of DPIF for assistance in their IPM project with Asian vegetable growers where the crops they were working on were adversely affected by poor basic farming practices. A survey of Asian growers found that crop yields and quality were suffering because of the poor cultural practices employed. As well, the effect of these practices on soil structure and sustainability was viewed with a great deal of concern.

Objectives

A collaborator was identified for the setting up of a demonstration area where improved farming techniques could be employed. From the observations made on the Asian growers farms the main areas that required immediate attention were:

- The use of green manure crops to improve or maintain soil structure;
- Improved soil cultivation and the use of more appropriate implements to reduce soil structural damage and prevent the formation of hard pans;
- The use of lime, dolomite and gypsum to improve pH and supply calcium;
- The use of plastic mulch to develop a wetting pattern to ensure adequate root growth;
- The use of drip irrigation in association with tensiometers and fertiliser injection;
- The effective use of fertilisers to supply the nutrient needs of plants especially base fertiliser and phosphorus;
- The precise management of irrigation and fertiliser inputs to gain maximum benefit from the improved growing system.

Progress Report

A green manure crop of Jumbo forage sorghum was sown on the virgin block in December 1997 and although there were drainage problems, which affected growth, the crop was cut and incorporated into the soil using DPIF implements. The demonstration area was ripped, re-cultivated and beds with plastic mulch were laid down in April 1998. An area of 0.25 ha was finally sown half to snake bean and half to bitter melon in July after a series of delays.

An irrigation manifold with a venturi set up was designed for fertiliser injection of specially developed fertiliser mixtures for snake beans and bitter gourd. Soil moisture tensiometers were installed for the grower and their use demonstrated.

Results

Unfortunately, both crops eventually failed. The bitter melon had excellent early growth rates but the unseasonal hot conditions during July, August and September resulted in severe plant stress. Temperatures under the black plastic reached 47°C but were reduced to 34°C after white paint was sprayed over the plastic. Eventually the market price fell and the crop was abandoned. The local selection of bitter melon was considered to be a poor performer.

The snake beans sustained a severe attack from bean fly early in growth and then two-spotted mite at a later date decimated the first planting. Due to predatory mite release on the IPM project to control the two-spotted mite, pesticides could not be used effectively to control these pests of snake bean. The second snake bean planting went well with no mite problems but due to irrigation scheduling problems this crop was also abandoned.

The grower gained a great deal of experience from the preliminary project although he lost the two crops. He was able to make valid comparisons with his own farming methods and lack of farming experience. Lack of adequate machinery, poor communication and real extension problems will have to be addressed in the continuation of this project.

5.1.8 POST-HARVEST HANDLING OF ASIAN VEGETABLES

Vegetable Cool Chain

M Gosbee

The Vegetable Cool Chain project, funded by HRDC and also involving SARDI and Agriculture Victoria, includes temperature and microbial monitoring as part of the work. Temperature logging of Asian Vegetables was mainly from Darwin to Melbourne, and found