

5.1.4 LEGUME GREEN MANURE DEVELOPMENT - KATHERINE

S McAlister

There was no planting as part of this project in 1999 as the vegetable research plots at the Katherine Research Station were planted with a green manure crop, which was then ploughed in, and the land left fallow.

5.1.5 FRUIT QUALITY AND YIELD VARIABILITY INVESTIGATIONS WITH WATERMELON

S McAlister

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5.1.6 BAMBOO POSTHARVEST

M Gosbee

Two experiments on bamboo shoots were conducted this season.

1. Effect of a 0 to 200 ppm chlorine dip on *Bambusa oldhamii* shoots.

This experiment was performed to determine whether fungal growth and discolouration of the cut end of the shoot could be reduced by a chlorine dip. Dip strengths of 0 (tap water), 50, 100 and 200 ppm were tested. Ten shoots were used for each treatment. Shoots were dipped for 1 minute in the solution, allowed to drip dry and placed in plastic bags for storage. Storage temperatures were 10°C and 20°C.

No effect of the chlorine dip at any concentration was detected on the shoots. When shoots were stored at 10°C, browning was not observed on chlorine or water dipped shoots after 5 days. However, when shoots were removed to 20°C, browning developed on both chlorine and water dipped shoots.

This indicates that temperature is a much more effective tool for controlling browning and fungal growth at the stem end of the shoots than chlorine dipping.

2. Storage life of bamboo shoots at several temperatures.

Previous work indicated that shoots kept much longer at 2°C than at 20°C, but no studies had been undertaken on intermediate temperatures.

18 *Dendrocalamus latiflorus* and 9 *D. asper* shoots were used in the experiment. Shoots were stored in sealed plastic bags and stored at 2 to 4, 5 to 8, 10 to 12 and 20 to 22°C. Shoots were assessed for weight loss and internal quality at nine days after packaging. As such, this experiment did not assess the maximum storage life, but the internal quality of shoots after nine days.

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

K Blackburn and M Traynor

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: