

colour of the fruit was quite variable. This is a common problem for growers. Because growers collect seed from their own crops, the quality of open pollinated fruit can vary between farms. Limited market studies show consumers prefer bitter melon that are 18-22 cm in length, 6-8 cm in diameter and with mid-green colour. Some growers reject up to 30% of their produce because it does not meet these requirements.

Field assessments of plant growth showed differences in vine vigour. While both hybrids produced adequate growth to support and protect the fruit, the local selection was more vigorous with many fruit totally hidden by vine growth. This may have caused the pale colour of some fruit. The local selection seemed well adapted to the local environment with fewer signs of leaf wilting during periods of heat stress.

Discussion:

After inspecting the trial, growers continued to show a definite preference for the open-pollinated type fruit with rough irregular bumps. It appears that the smooth-skinned hybrids have less market appeal and would require promotion to be accepted by consumers. Growers would like a uniform hybrid line with the rough appearance of the local selection. Unfortunately such a hybrid is not currently available.

Growers need to be more vigilant when selecting seed to minimise the variability in the local selection.

Harvesting fruit at the correct maturity remains a problem, especially for inexperienced growers. Maturity indicators at harvest can be very subtle and difficult to detect.

Further identification of production peaks would assist with planting schedules and completion time of harvest.

Detailed studies on manipulation of the male to female flower ratio (which can be as high as 50:1) could result in significant yield increases.

It is interesting to note that several growers purchased hybrid seed for planting in the 2001 season. This is a direct result of these research trials.

PROJECT: Snake Bean Fusarium Survey

Project Officers: M. Gosbee and K. Bui

Location: Darwin Region

Objective:

To determine the spread of Fusarium on snake beans in the Darwin region.

Fusarium oxysporum f.sp. *tracheiphilum* (Fot) causes 'early die' of snake bean crops when they begin fruiting. This disease was first noted in 1999 and since has spread rapidly amongst the Asian vegetable farms. The disease is spread through poor soil hygiene and also infected seed. As considerable departmental resources are invested in finding an alternative resistant line of snake beans, a survey was conducted to determine the actual spread of the disease. Snake bean production in 1999 was worth \$1.1 million.

Most Asian vegetable farms were visited and the disease was described. Samples were taken where possible and given to Plant Pathology for identification.

Table 1. Number of properties surveyed for snake bean Fot in the Darwin Region, March 2001

Locality	Infected	Not infected	Snake beans not grown	Total
Humpty Doo	3	4	5	12
Buckley Rd	13	3	6	22
Wanderrie Rd	6	4	2	12
Lambells Lagoon	3	0	1	4
Berry Springs	1	2	0	3
Darwin River	3	1	1	5
Total	29 (50%)	14 (24%)	15 (26%)	58

Out of all farms surveyed, 15 (26%) had never grown snake beans on their properties. Of the remaining 43, which had grown beans in the past, 73% were infected. Observations have also indicated that several new blocks had become infected since the survey.

New lines of snake beans are being brought into Darwin and tested for resistance to Fot. A report on this work can be found in the Resource Protection TAR.

PROJECT: Kabocha Variety Trial

Project Officers: C. Kinnaird, J. Bright, M. Gosbee and R. Renfree

Location: KRS

Objective:

To determine whether viable yields could be produced from kabocha cultivars in the Katherine Region.

Background:

In 1999, five varieties of kabocha were grown in a trial at Katherine. Quality was good; however yields were low compared with other regions. This can probably be improved this year with better N control and careful management of pollination. The other possibility was that low temperatures experienced last year reduced fruit set.

Five of the most promising varieties were selected from the previous year's results. These were Tetsukabuto, T110, Sweet Mama, Pacifica and Delica. Kurijiman was also included, as this is one of the main varieties grown by NZ and exported fresh to Japan.

This trial is part of the RIRDC project 'Consolidating the Asian vegetable industry', number CQU-10a. This project also includes more information on kabocha grown in several locations nationally, which will be available from RIRDC in late 2001.

Method:

The crop was planted on 19 May 2000. Three randomised plots per variety were used. There were 10 plants per plot, with 1 m spacing within the rows and 1.5 m between the rows.

Flowering started on 3 June 2000. There were two occasions during the trial when irrigation was interrupted for several days due to pump breakdown. Upon rewatering, many fruit split. Two harvests were conducted, one on 15 September 2000 to remove the worst of the split fruit, and the main harvest on 4 October 2000, 138 days after planting.