

Mini pumpkins - *cucurbita pepo*



Mini-pumpkins (*Cucurbita pepo*) have recently become known as a 'new' crop in New Zealand. The pumpkins New Zealanders are used to roasting with their Sunday roast lamb are traditionally heavier than 1 kg. But, mini-pumpkins, ideally about the size of a grapefruit, are growing in appeal. They have usually been thought of as ornamental, and while they kept well they were inedible. However, new mini-pumpkin cultivars are being developed with a sweet and nutty taste.

Uses

The fruit can be cooked whole, topped, cored and stuffed. They cook well in the microwave, and make attractive individual servings when presented whole. Mini-pumpkins are often used as attractive kitchen accessories for decoration before they are converted into wholesome meals.

Cultivars

The following cultivars are available in New Zealand from various seed supply companies: Orange Minikin and Jack-be-little, with a fruit size of around 200 g; and Sweet Dumpling with a white and green striped skin and a fruit weight of around 600 g. Nishikikanro also produced attractively coloured small pumpkins in a trial carried out during the 1993/94 season in Hastings. Other varieties evaluated at Lawn Road have been uneven in shape and colour and further selection is needed to create a cultivar with the desired characteristics.

Agronomy

Mini-pumpkins can be grown on a diverse range of soil types. They follow any crop without the risk of diseases, except where another cucurbit crop has been grown in the past two or three years. In this case there is a risk of root diseases or powdery mildew.

Sowing

Sowing starts in October or November, as soon as the soil temperatures reach about 12-15°C and all danger of frosts is past. The crop is usually direct seeded, but it can also be propagated and planted out in late October or November. Germination should take only about six to eight days if air temperatures are high enough (about 25-30°C).

As the seed germinates readily with a low soil moisture content, there is little advantage in irrigating during this stage. In fact, wet weather during seedling emergence can increase slug numbers and they can destroy the plants. Precautions, pre-sowing, include additional cultivation

when the soil is dry to kill slug eggs or leaving the soil in a crumbly state to increase aeration which can also kill slug eggs. In addition, slug bait can be applied.

Spacing depends on the machinery used for seeding and weeding but a suggested in-row spacing is 30 or 50 cm. Closer spacings may provide smaller fruit. A row spacing of 2 m at 30 cm in-row will provide 16 600 plants/ha and 50 cm will provide 10 000 plants/ha.

Plant growth is very sensitive to fluctuations in the weather, especially during the first few weeks of establishment. The root system is shallow and the plants do not tolerate water logging. Light, free draining soil with a pH range of 6 to 7 is most suitable. To achieve this pH, lime should be applied before planting (a soil test will indicate how much lime is needed). Fertiliser applications should be guided by regular soil tests. In general, a rate of 12:10:10 of N:P:K at around 500 kg/ha is suggested. A side dressing of 50-75 kg/ha of N at the sixth true leaf stage may be required but over-use of N should be avoided as fruit with a short shelf-life results.

Pests and diseases

Chemical weed control is possible. Several chemicals are registered for use with cucurbits but weed control can be carried out safely by mechanical or manual means. The stale seed bed technique will assist in removing many weeds just prior to germination by applying Preglone.

The most common disease is powdery mildew, which develops during warm, humid conditions. Early symptoms can be found from late December on but it is best controlled by prevention rather than cure. However, a number of fungicides are available to control this disease.

Root diseases such as fusarium are a serious threat to mini-pumpkins. There is no control and sterilising the soil prior to sowing is a last option but is very expensive. Plants can suddenly wilt and die when infected with fusarium. Older plants show stunting with a progressive leaf yellowing from the base to the runners when infected and eventually they too will die. Infection can be recognised by inspecting the vein tissue for browning of the water-conducting tissues.

Viruses can be a problem, and when plants are infected at an early stage they may become stunted. Leaves develop a yellow and green mottled appearance. No control is possible and presently there are no resistant or tolerant cultivars. Keeping the crop free from insect pests

that carry viruses is recommended but is not always entirely practical. Self-sown cucurbits should be eradicated and weeds destroyed as they too can be a source of virus infection.

At planting time, considerable damage can be caused by cutworm. In either the late afternoon or early evening, insecticides can be applied as a spray or soil drench.

Other pests of mini-pumpkin crops include wireworm, spider mite and aphids. Several materials can be used to control these pests, but prevention is better than a cure. Crop monitoring for early signs of damage is recommended.

Harvesting and storage

Harvesting should start around February or March, or anything between 110 and 130 days after sowing. It should cease before frosts start as frost-damaged fruit will not keep. Shelf-life temperatures are around 7-10°C. Fruit can last for three to five months under dry, cool conditions.

Yields

The expected yield per hectare is about 26-35 t. Fruit numbers range from 25 000-50 000/ha. A single plant may average about two to four fruit depending on the spacings used. Indications are that between 50 c and \$1.50 each can be achieved for mini-pumpkins, but as the crop is not fully accepted yet is it difficult to confirm prices.

Future potential

Research trials are underway at Crop & Food Research to evaluate the performance of this new crop at different spacings and with pruning treatments. Mini-pumpkins are easy to grow and their size and colours have instant eye appeal. Further promotion is needed, but there is potential in the local fresh market and restaurant trade. Export opportunities also exist in Asia because mini-pumpkins would make an excellent gift when packaged appropriately.

Acknowledgements

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References

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