

Myoga ginger - *Zingiber mioga*



Myoga ginger is a traditional Japanese vegetable grown for either spring shoots or edible summer/autumn-produced flower buds. It is a new crop in New Zealand. Information on this crop's requirements is still being assembled; this broadsheet is derived from Crop & Food Research's experience gained from working with this crop during the past six years. Research is continuing on this crop and further results could modify the recommendations expressed here.

Growing environment

Myoga ginger is a perennial, woodland plant from Japan. The plant top growth is frost-tender and dies in winter. It regenerates in spring from the underground rhizomes. Under New Zealand conditions, myoga top growth sunburns without shading, and to grow the crop successfully 30-50% shade cloth is recommended. The engineering requirements of shade structures are beyond the scope of this broadsheet.

Myoga needs free draining, fertile soils to grow well, and on imperfectly drained soils plant growth is retarded and rhizome rotting can occur. Myoga is a very new crop in New Zealand so limitations on where it can be grown are not well defined. It has been grown successfully in the North Island and as far south as Canterbury. In New Zealand it appears to be free of the major diseases that affect it in Japan and it has been almost disease and pest-free in experimental plantings in the Waikato. Myoga does not produce seed - propagation is by root division.

Myoga shoots emerge in spring and produce dense foliage on robust stalks 1.5-2 m tall. The sterile flowers are produced at ground level from underground stems during summer and autumn. The top growth is killed by frost in autumn and the growth cycle begins again the following spring. The myoga rhizomes continuously spread outwards during the active growth phase. In the Waikato, single rows grew to be 0.5 m wide after two seasons' growth.

A myoga crop is established from 25 cm long rhizome pieces dug from dormant plants in winter. These rhizomes should be cool stored at 4°C for six weeks to improve subsequent crop establishment. In late winter to early spring, rhizome pieces are planted 10 cm deep, 40 cm apart in rows 1.5 m apart. The crop is left through the first year to establish. Harvesting of the flower buds begins in the second year. Wide planting rows are recommended to aid crop management in future years as the rows expand outwards. Flower bud harvesting is easier to manage on

the edge of the plant mass. Research on row width and crop management to achieve sustainable high yields is in progress and, together with greater grower experience, it is expected that knowledge about growing systems will evolve still further.

There are no herbicides registered for use on myoga. Sawdust mulch is needed in the second year as part of picking management, and one way of controlling weeds is to apply sawdust mulch over the rows at establishment and use glyphosate between the rows and as a winter clean up spray when the crop is dormant.

Information is limited on the fertiliser and water requirements of myoga. The crop grows vigorously on fertile, Waikato volcanic ash soils with minimum fertiliser inputs but information is lacking for other areas. From first principles, annual dressings of 200-300 kg/ha of an NPK fertiliser would be prudent until more precise information is available. Irrigation should be applied in summer to myoga on water-deficient soils. It is likely that irrigation may enhance flower bud size as the buds mature.

Yield

Myoga flower buds are picked before they emerge above the surface from the underground shoots, turn green and the flower petals open. To facilitate picking, a 10-15 cm layer of sawdust is used to provide an easy substrate in which to locate and pick the buds. The buds are located in the sawdust and picked individually once they are at the appropriate stage of maturity. The production period in the Waikato is dominantly in February and March, extending into April. Flower buds appear earlier in the Auckland region and later in the South Island but precise information on regional variation in harvest periods is lacking.

Flower bud harvest should be at least two to three times each week depending on how quickly the flower buds are maturing. Export grade buds need to be in excess of 6 g, plump and pink. Limited information suggests that one person can pick 10 kg buds/hour but this depends on crop production and the thickness of the stand. Once picked, the flower buds keep well under coolstore conditions.

Production in the Waikato on experimental plots has been recorded at 8-13 t/ha in a second year crop. To maintain production levels and ease of picking, the crop may require thinning to maintain picking avenues because adjacent rows may grow together.

Management of the crop as the rows expand is a key issue in sustaining yields and research is currently underway on this point.

Markets

Myoga production is very seasonal in Japan with limited supplies on the market from November to May. This market window could be supplied from New Zealand. The wholesale auction price in this period can range from \$20 to 40/kg for top grade product. A myoga ginger product group has been established under the New Zealand Horticulture Export Authority to set quality standards and regulate the flow of the product onto the market.

Further information about commercial myoga production can be obtained from:

The Myoga Product Group
C/- NZ Horticulture Export Authority
Box 1417, Wellington.

Future developments

Crop & Food Research leads the development of this new crop. Research results to date indicate that myoga can be successfully grown in New Zealand and commercial production has begun. Nevertheless, crop agronomy is still ill defined and agronomic research will continue to define the crop management required to optimise myoga flower bud production over a period of years.

Further reading

Douglas, J.A.; Follett, J.M. 1992: Myoga ginger - a new export crop for New Zealand. *Proceedings of the Agronomy Society of NZ* 1992.

Follett, J.M. 1986: Production of four traditional Japanese vegetables in Japan. Ruakura Agricultural Centre Special Publication ISBN 0-477-03082-3.

Palmer, J.A. 1984: Myoga, a possible ginger crop for New Zealand. *Royal NZ Institute of Horticulture Annual Journal* 12: 105.

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