

## Daikon - Japanese radish



Daikon is not new to the New Zealand horticulture and retailing sector, but there is certainly potential to expand the domestic and export markets. It grows well in most areas of New Zealand.

Daikon (*Raphanus sativus*), also known as Japanese radish, Chinese radish (Lobok) or Giant White radish, grows well throughout New Zealand, but its market potential is yet to be fully explored. Fresh daikon is sold in New Zealand although most retailers and consumers are unfamiliar with it. However, the crop increasingly features on restaurant and hotel menus. It provides an exciting variation to our standard vegetables and a familiar meal accompaniment welcomed by Asian visitors or residents.

Fresh daikon is popular in Japan. Export of fresh daikon to Japan would be straightforward for the New Zealand grower, except that wholesale prices are only NZ\$1/kg and one daikon retails for about NZ\$2. The cropping area of daikon in Japan has dropped from 62 000 ha in 1989 to 56 000 ha in 1994, largely due to increasing prices of agricultural land and an ageing farming population.

In Japan there is also a demand for value-added

products including dehydrated, vacuum-packed and pickled daikon. The foliage can also be dehydrated, pickled or freeze-dried. This market would particularly suit New Zealand suppliers as it avoids problems encountered when transporting the fresh product.

Research at the Crop & Food Research Hawke's Bay Research Centre in Hastings has produced vacuum-packed daikon roots that would be acceptable in Asia. The product stayed fresh in the gas flush packs for several months in the cool store.

Daikon plants have serrated leaves and large white roots, sometimes with green shoulders, which stand prominently out of the soil making harvesting easy.

The daikon root has a crisp, mild flavour and is excellent fresh in salads. Roots are usually peeled, sliced, grated or diced for soups and stews or they can be boiled whole or dehydrated as strips or diced.

Several daikon cultivars have been evaluated at various

locations in Hawke's Bay, Bay of Plenty, Wairarapa and Ohakune. Good crops were produced in all areas except Ohakune where the growing season was too short and rather cool, producing much smaller plants than in the other areas.

### Growing conditions

Daikon are deep rooting and grow best on light-textured, free-draining soils. Although no specific fertiliser recommendations are available, the application of NPK, 12:10:10, at a rate of 400 kg/ha as a base-dressing is a useful guide. However, soil should be analysed prior to sowing.

### Cultivars

Local seed companies provide a good range of daikon cultivars including April Cross, Easter, Mino Spring Cross, Oharu, Ookura, Okamoto, Minokon, Kensei, Summer Cross and Tokinashi. These cultivars have been evaluated by Crop & Food Research over a number of years. Cultivars that bolted before harvest in Hawke's Bay during the summer were Okamoto, Ookura and Mino Spring Cross. Summer Cross performed well during the hotter summer period.

Care is required in choosing the variety most suited for your climate and geographical location. Bolt-resistance is especially required if you intend to grow the crop during higher temperatures as otherwise root quality is adversely affected. It would be advisable to evaluate several cultivars before choosing one for large scale production.

### Sowing

The planting season starts in spring as soon as soil temperatures are 8-12°C. Successive sowings can be carried out at least until May. The crop is direct seeded and germinates quickly. Suggested spacings are 0.15 m in-row and 0.75 m between rows, providing 88 000 plants/ha.

Spacing effects on yield and quality are not known. Closer spacings may well have a beneficial effect on keeping the weed population down, but may also reduce root size. The effect of spacing on root size may well be worthwhile investigating; commercial crops observed in Australia were on a three-row spacing at a bed width of 1.5 m.

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### Yields and harvesting

The choice of harvest maturity is often a personal preference, but roots are usually ready when they reach a diameter of around 5 cm. From then on it takes only a couple of weeks before the roots are over-mature. Root length may vary from around 35 to 50 cm. The first harvests may take place about 60 to 70 days after sowing.

Potential yields could be from 400 to 500 g/plant or 33 to 38 t/ha. Daikon has a shelf-life of at least three to four weeks at 6°C.

### Weed control

There is no registration for chemical weed control for this crop, but weeding can be carried out effectively by mechanical or manual means. The stale seed bed technique will assist in removing many weeds prior to sowing.

### Pest and diseases

No diseases were recorded during Crop & Food Research's trials, but white butterfly caused some damage by stripping leaves. Although this can be a problem, it can also easily be controlled by applying Attack, Ambush or other insecticide as recommended. Birds are also a problem. They attack emerging plants during early spring. Damage is often present around the roots, just underneath the soil surface, due to insects chewing the roots. An insecticide can easily be applied as soon as the damage is evident.

### Irrigation requirements

Regular water applications will ensure even plant growth. As the roots have a low dry matter content (4-6%) reasonably moist soil is needed at all times.

### Conclusion

Daikon grows well in most areas of New Zealand. There are only limited opportunities for fresh export because of the low return and high freight costs, but the demand for pickled and dehydrated daikon in Japan is promising for growers and further evaluation of processing is warranted.