



Farmnote

Growing Brussels sprouts in Western Australia

Farmnote 34/2001

Reviewed October 07

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Brussels sprouts belong to the Brassica family and are related to cabbages and cauliflowers. Plants grow to between 100 and 140 cm high. They are slower growing than other brassicas. The sprouts or edible portions of the plant are small cabbage-like buds that are produced in the axils of the leaves. They are a good source of energy, fibre, protein, iron and vitamins A and C.

Brussels sprouts are a major crop in Europe, but are a minor crop in Australia. In Western Australia, most Brussels sprouts are imported from the Eastern States, especially South Australia. About 700 t are sold through 'Market City', Canning Vale markets, but less than 80 t are from local production. This is due to competition from the Eastern States, a declining Australian market, lengthy growing period of 6 to 9 months, high pest level, high labour demand for picking and low prices.

Most Brussels sprouts are marketed from February to September, with the peak in winter.

Climatic requirements

Brussels sprouts require a warm climate to develop a good plant frame and low temperatures to produce high quality sprouts. The plant is the most cold tolerant in the brassica family and frost is believed to improve the quality of the sprouts. The plants must grow uninterrupted with no check in growth.

Varieties

New hybrid cultivars are common and it is best to check with a leading nursery to determine the latest varieties. Purple cultivars are also available, but are not popular.

Transplanting

Plants are 5 to 7 weeks old when ready for planting out of cell-packs, which are normally produced by a specialist nursery. Plant by hand or by machine.

Plant from late December to February in the 'Hills' district of Perth and January to March in Perth. In the south-west, transplant from October to January. Planting too late will cause the plants to flower

('bolt').

Space plants at 1.2 m apart between the rows and 0.6 to 0.8 m apart within the rows. Wider spacing helps reduce bacterial and fungal infections on sprouts.

Soil

While well-drained loams, peaty sands or gravelly loams are preferred, good crops may be produced on sandy soils providing they are fertilised well. A neutral to slight alkaline soil is optimum. Where the soil is acidic, with a pH less than 6 (measured in water), lime should be applied. Rates will depend on the acidity of soil and the source of lime.

Fertilisers

For the 'Hills' district and south-west areas, before planting, give a banded application of double superphosphate at 500 kg/ha plus muriate of potash at 200 kg/ha, or Potato E at 1500 kg/ha. Three weeks after planting, give 50 kg/ha of ammonium nitrate, or 37 kg/ha of urea. Thereafter, at two to three week intervals apply 100 kg/ha ammonium nitrate or 75 kg/ha urea and 75 kg/ha muriate of potash. After heavy and prolonged rain, apply more fertilisers. At monthly intervals, include dressings of 50 kg/ha of magnesium sulphate with the above.

For sandy soils, before planting, apply compost at 30 cubic metres per hectare or double superphosphate at 300 kg/ha. Apply 25 kg/ha of ammonium nitrate or 18 kg/ha of urea, weekly from 1 to four weeks after planting. Thereafter, every week, apply 60 to 80 kg/ha of ammonium nitrate or 45 to 60 kg/ha of urea and 30 to 40 kg/ha of muriate of potash. During picking in cool weather, rates may be reduced to 50 kg/ha ammonium nitrate or 37 kg/ha of urea. Do not use too much nitrogen as this may cause loose, open, sprouts. At monthly intervals, include dressings of 50 kg/ha of magnesium sulphate with the above.

Applications of trace elements may be required at 12 to 18 month intervals in the vegetable program. A suitable mixture would include manganese sulphate (25 kg/ha), copper sulphate, ferrous sulphate, zinc sulphate and borax (each applied at 18 kg/ha) and sodium molybdate (2 kg/ha).

Preventive sprays of some trace elements may especially be needed at the following rates in the seedling stage:

- Boron -borax at 3 g/L or proprietary boron sprays, especially where soils are alkaline and sandy.
- Molybdenum - sodium molybdate at 1 g/L, especially where soils are acidic.
- Manganese -manganese sulphate at 8 g/L, especially on alkaline soils if symptoms appear.

Soil analysis before planting and leaf analysis after planting, plus nutrient analysis of the water will provide information for adjustments to the above fertiliser programs.

Irrigation

Regular irrigation by overhead sprinklers is needed. The irrigation water should have total soluble salts less than 1200 ppm.

Pests

There should be a rotation of at least three years between crops in the brassica family.

Clubroot (roots), ring spot (leaves) and black rot (leaves) are the main diseases, but bacterial soft rot (sprouts) black-leg (base of stem), downy mildew (leaves), peppery leaf spot (leaves and sprouts), sclerotinia and wire-stem (base of stem) may cause problems.

Aphids (leaves) and diamond back moth (leaves) are the main pests, but black beetle (roots) , sugarbeet nematode (roots), rootknot nematode (roots), redlegged earth mite (young plants), slugs (leaves), snails (leaves), and vegetable weevils (leaves) may also damage Brussel sprouts.

Herbicides are available to control most weeds before and after planting.

The control of diseases, insects, nematodes and weeds will be similar to other brassicas (see Bulletins 4346 and 4356) but make a final check on the labels to see if these include Brussels sprouts. Also, check Farmnote No.39/90 '[Diseases of crucifers](#)' and Farmnote No. 85/2000 '[Clubroot disease of crucifers](#)'

Users of any agricultural chemical must ALWAYS READ THE LABEL and any Permit before using the product, and strictly comply with the directions on the label and the conditions of any Permit.

Yields

Yields can be 1 to 3 kg per plant (15 to 40 tonnes per hectare). A plant may produce 50 to 80 sprouts and these may individually vary in weight from 20 to 40 g.

Harvest

Brussels sprouts are ready for harvest about 14 weeks after transplanting and can be picked for 2 to 3 months. Plants are picked by hand three times per week in the cooler weather. Machine harvesting of the total crop is common in Europe. The main season of harvesting from Western Australia is from April to September, with a very small production in summer from the Warren area.

Begin harvesting as the sprouts mature at the base of the plant.

Usually about two to three leaves are taken off above the current level of harvest during the harvesting operation. This exposes sprouts for the next harvest and helps sprouts to dry quickly after rain, minimising disease.

Some growers top the plants of late crops, when the first sprouts are picked, in order to increase the size and time to maturity of the rest of the crop.

A good variety has sprouts that are easy to pick. Good quality sprouts are of good size throughout the season (30 to 45 mm), round, tight with no internal browning and bright green. Discard loose, split, diseased and 'blown' sprouts.

Wash and grade the sprouts.

Cool with forced-air-cooling or hydro-cooling. Store at 0°C with a humidity of 98 per cent.

Marketing

Sprouts are normally loose packed into 10 kg cardboard cartons, or 22 to 30 litre returnable plastic crates. Packing in 5 or 10 kg polystyrene containers and covering with ice will keep the sprouts in good condition when sent to distant markets.

Removal

The stumps are large and need to be well rotavated, in order to breakdown prior to the planting of the next crop.

Acknowledgements

The original farmnotes were written by Mike Hawson and Dennis Phillips.

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