



Chinese cabbage

(*Brassica rapa* L. *chinensis*)



agriculture,
forestry & fisheries

Department:
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Chinese cabbage

(Brassica rapa L. chinensis)

– PRODUCTION GUIDELINES –

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GENERAL ASPECTS

Classification

Scientific name: *Brassica rapa* L. subsp. *chinensis*

Family: Brassicaceae

Common names: Rape, Chinese mustard cabbage, Chinese cabbage, Mutsina

Origin and distribution

Chinese cabbage originates in China and was distributed to other countries through the regions and spread around the world. The crop probably found its way from Asia into Africa as a result of trade between two continents.

Production level

South Africa

Statistical data on production levels of Chinese cabbage are not known in South Africa. One of underlying reasons for that is because the crop is not native to South Africa but was adopted and indigenised because of its adaptation to the environment. The crop is exclusively produced and consumed by subsistence and small-scale farmers in Africa. Research shown that *Brassica rapa* L. *chinensis* is the most popular type of Chinese cabbage produced and consumed by black people in South Africa..

International



Chinese cabbage is a leading market vegetable in China, Japan and South-East Asia and grown on more than 500 000 ha. In tropical Africa, Chinese cabbage is common in city markets and is occasionally recorded as vegetable in many countries. It is recorded

as a weed in Ethiopia, Kenya, Zimbabwe and Kenya. The yield of Chinese cabbage varies widely and 30 to 50 t/ha of fresh product has been recorded from well-grown crops.

Major production areas in South Africa

Chinese cabbage is produced mainly in the semiarid, dry summer subtropic and summer rainfall climatic zone of the country. It is mainly produced in the Limpopo, North West, Mpumalanga, Gauteng, Eastern Cape and KwaZulu-Natal provinces.

Cultivars

There is no variety that has been developed in South Africa yet.

Description of the plant

Mature plant

B. rapa subsp. *chinensis* is a non-heading type of Chinese cabbage. It is an annual, erect, leafy vegetable that can grow up to 15 m to 30 cm tall.

Leaves

The leaves of Chinese cabbage are arranged spirally in a rosette during vegetative stage. It has broad, thick, tender leaves with heavy midribs; it can be either loosely or tightly headed.

Essential parts

Fresh leaves and tender shoots are essential parts.



Climatic and soil requirements

Temperature

Chinese cabbage thrives best during the cooler periods of the growing season. It prefers an average temperature of 18 to 22 °C during early growth,

Water

Chinese cabbage is a cool, seasonal crop and needs plenty of water throughout its growth period. It grows best normally in winter and should therefore be watered for good yields.

Soil requirements

Chinese cabbage is grown successfully on a range of soil types, ranging from sandy soils to the much heavier textured loams. The soils that are well drained, possess good structure, fertility and water-holding capacity usually produce a satisfactory crop of Chinese cabbage. Chinese cabbage grows well where there is a good supply of organic matter. It also grows well on soils which have pH values from 5,5 to 7,6, although the ideal pH for growth is near neutral (7,0).

CULTIVATION PRACTICES

Propagation

Chinese cabbage is propagated from seed.

Soil preparation

The soil must be finely tilled, using a garden fork or hoe. Use a chisel plough and disc to prepare the land at least six weeks before planting, so that plant residue is broken down before planting.

Tyne ripping to the depth of 450 mm may be required if a hardpan has developed following repeated cropping. On sandy soils, rotary hoed cultivation is used to prepare a good seedbed.

Planting

For direct seeding, open the planting furrow about 2 to 3 cm using a hand hoe. Plant in seedbeds, in row spaced 15 to 20 cm apart. Sow seeds 1 to

2 cm apart within the row. Sprinkle the seeds into the furrow and cover with 1 to 2 cm of soil.

Transplanting

Seedlings are usually grown in trays which hold 100 plants and the individual cell-pack may have a diameter of only 15 mm and a depth of 10 mm. Transplant when the seedlings are 15 cm tall.

Fertilisation

The fertiliser programme should be based on soil analysis. When using chemical fertilisers, purchase a 2: 3: 2 or 3: 2: 1 mixture. Apply 50 g of fertiliser mixture per 1 m and spread it evenly in the furrow. Add 20 g of LAN per metre at the 5- leaf stage. Mix the fertiliser, using a stick, water the furrow and close it. Repeat the application after one week.

When using poultry or pig manure, apply one 10-ℓ bucket over a 5 m length. Use the same procedure when using kraal manure.

Irrigation

The frequency of irrigation will depend on the type of soil. Sandy soil should be irrigated three times a week, sandy loam two times and clay or clay loam once a week. For a good-quality leaf harvest irrigate 5 ℓ of water per day for a plot size of 1 x 1 m. Irrigation should be done immediately after transplanting.

Weed control

Herbicides may be used in transplanted crops. Weeds can also be controlled manually either by hand hoeing or hand pulling. It is always advisable to use recommended herbicides to control weeds.

Pest and disease control

The main pests of Chinese cabbage are Bagrada bugs (*Bagrada hilaris*), cutworm (*Agrotis segetum*), Cabbage aphids (*Brevicoryne brassicae*), spider mites (*Tetranychus* spp.). Commonly used chemicals to control insects pests are Metasystox (oxydemeton-methyl), Tamavo (methamidophos) and Cymbush (cypermethrin). Pests can also be controlled by removing weeds, affected plants and keeping the land clean.

The most serious diseases affecting Chinese cabbage are downy and powdery mildews, club root and black rot. These diseases can be controlled by using clean seeds or removing all infected plants.

Other cultivation practices

Harvest maturity

Harvest of the leaves should be done once the plant is established, when it reaches the 8-leaf stage after 60 to 95 days. Harvesting commences usually in mid-July and continues through November and until the peduncle has elongated and the first flower has opened.

Harvest methods

Chinese cabbage is harvested by hand when the leaves are fully developed. The leaves are dislodged at the base.

POST-HARVEST HANDLING

Cleaning

The leaves are washed to remove the soil immediately after harvesting for preparation for marketing.

Storage

The shelf life for Chinese cabbage is short and therefore fresh leaves should be stored in the refrigerator or in cool place. Cooked leaves can be dried and stored in a plastic container.

Transport

Chinese cabbage requires refrigerated transport to retain the turgidity of the leaves.

Marketing

Chinese cabbage should be sold within 2 days after harvesting. It is normally sold at local markets, particularly by street vendors and some retail shops.

PRODUCTION SCHEDULES

Activities	January	February	March	April	May	June	July	August	September	October	November	December
Planting					X							
Harvesting							X	X	X			

UTILISATION

Chinese cabbage is used as foliage vegetable. It can be boiled in soups, used fresh in salad or stir fried in special dishes.

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