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# BETROOT

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## Background

### Origin and distribution

The beetroot is indigenous to Asia Minor and Europe. It is grown widely in Germany and France and to a lesser degree in other European countries, Africa, Asia, and South America.

### Soil and climatic requirements

Beetroot does best in deep and well-drained, loose, loamy to sandy soils. Beetroot prefers a soil pH of 5,8 to 7,0, but can tolerate a pH of up to 7,6. Mature plants are fairly tolerant to salinity, whereas seedlings are relatively sensitive.

Beetroot grows best in spring and autumn, but does well in summer in the Highveld and in winter in the Lowveld. Beetroot seeds germinate at soil temperatures ranging from 4,5 ° to 30 °C, with the optimum being 18 ° to 24 °C.

### Uses

The roots are boiled and eaten as a cooked vegetable, either plain, fried or served with sauces. They may also be hollowed out and stuffed with savoury mixtures. Wine is made from beetroot in some countries. The leaves are sometimes cooked as spinach. It has been grown for thousands of years for medicinal purposes. Beetroot has been regarded as a laxative, a cure for bad breath, coughs and headaches and even as an aphrodisiac.

### Cultural practices

#### Propagation

Beetroot is propagated by seeds.

### Soil preparation

The seedbed should be well prepared by ploughing 15 to 20 cm deep to break up clods. The soil should also be as level as possible, have a good crumb structure and enough moisture, and be free of unrotted plant material.

### Planting

Seeds are spaced 25 to 50 mm apart in rows drawn 200 to 400 mm apart. A final in-row spacing of 50 to 70 mm after thinning out is recommended. The seed should be sown at a depth of 15 to 20 mm. About 6 to 10 kg of seed is needed for 1 ha of beetroot. The seed can be sown in beds or broadcast in large fields and later worked into the soil with a tractor-drawn harrow. The sowing times differ with production areas.

### Fertilisation

Nitrogen fertilising is important and 300 to 400 kg/ha of limestone ammonium nitrate or ammonium sulphate, depending on soil analyses, are applied in 2 or 3 dressings during the growing season. About 150 kg/ha of nitrogen is usually applied at planting time and the rest when the plants are about 10 to 15 cm tall. A total of 500 to 600 kg/ha of superphosphate and 200 to 300 kg/ha of potassium chloride are applied just before sowing. Alternatively, a fertiliser mixture of 2:3:2 (22) at 1 000 to 1 200 kg/ha may be applied.

### Irrigation

The soil should never be allowed to become dry and it should be kept moist to a depth of 20 to 25 cm. The plantings should receive light water applications daily until the young seedlings come up. About 30 mm of water should be supplied per irrigation.

### Weed control

Weeds must be controlled before they can compete with beet seedlings and interfere with their growth. All weeds between the rows must be removed by hand to avoid damaging the roots. Weed control can also be achieved chemically by applying herbicides, and instructions on the container should be followed.

### Pest control and disease control

Frequent pests of beetroot include: aphids, red spider, leaf-eating insects, and cutworms. Control can be done by applying registered chemicals and using baits when the roots reach maturity. (Use registered chemicals.) Crop rotation can also help.

Frequent diseases include: Cercospora leaf spot, downy mildew, brown rust, scab, root rot, and damping-off. Control can be achieved by sowing seeds in soils with a good structure. Seed should be treated with thiram. Practise crop rotation. The crop should have sufficient boron. Planting should be at the right time and not too deep. In the case of downy mildew, seeds should be obtained from an area where this disease does not occur. Seed treatment: place in hot water at 50 °C for 25 minutes. Practise crop rotation. Planting should be in well-drained soils.

### Acknowledgements

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