

plant density that allows good air circulation between plants.

### Uses

Amaranth represents the largest source of nutrients of all the vegetables that can be grown in Africa. Amaranth is one of the most prized leafy vegetables. The cooked leaves are eaten in different ways as vegetable, soup or sauce.

### References

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS. 1988. *Traditional Food Plants*. FAO, Food and Nutrition Paper 42.

JANSEN VAN RENSBURG, W.S., VAN AVERBEKE, W., SLABBERT, R., FABER, M., VAN JAARSVELD, P., VAN HEERDEN, I., WENHOLD, F. & OELOFSE, A. 2007. African leafy vegetables in South Africa. *Water SA*, Vol. 33, No. 3 (Special edition). Available on website <http://www.wrc.org.za>.



(*Amaranthus hybridus*)

2009

Printed and published by:  
Department of Agriculture

Obtainable from:

Resource Centre  
Directorate Agricultural Information Services  
Private Bag X144  
PRETORIA  
0001

Further information can be obtained from:

Directorate Plant Production  
Private Bag X250  
PRETORIA 0001

Tel: +27 12 319 6072  
Fax: +27 12 319 6372



agriculture,  
forestry & fisheries

Department:  
Agriculture, forestry & fisheries  
REPUBLIC OF SOUTH AFRICA

Scientific name: *Amaranthus hybridus*

Common names: Amaranths, Thepe, Vowa, Umfino, Imbuya, hanekom, Imbuya, Isheke

### Origin and distribution

Amaranth is one of the oldest food crops, with evidence of cultivation dating back as far as 6700 BC. It was originally domesticated in Central America and Mexico. Amaranth is a common weed in cultivated lands because of its rapid growth and abundant seed production. Cultivation has become popular in many areas of Africa, in particular Benin, Côte d'Ivoire, Nigeria, Tanzania, Zimbabwe and Zambia. *Amaranthus* is found in all the provinces of South Africa mainly occurring naturally.

### Description

*Amaranthus* is an erect, branched annual herb which can grow up to 1 m.

### Stems

Often tinged reddish, erect, occasionally ascending, branched, with linear marks on the surface, and hairless to moderately pubescent with multicellular hairs.

### Leaves

Leaves are simple, broadly tapering at the end to ovate or rhombic in shape with the lower surface hairless or sparsely covered with hair along the margins and veins.

### Flowers

Yellowish green, reddish, or purple, in auxiliary and terminal spikes, both sexes mixed throughout the

spikes, bracts and bracteoles deltate-ovate, tipped with a long, pale brown to reddish awn; lanceolate or oblong, apex acute, often awn-tipped, sometimes the apex of female flowers blunt, only the midrib green; stigmas are 2 to 3.

### Fruit

The fruit is small in size and dark red, brown or black in colour. Subglobose to ovoid, sometimes with a short, inflated or narrow and smooth neck below base of style, 0,2 to 0, 3 cm long, dehiscent (gaping).

### Seeds

Black, sometimes shiny, compressed, 0,8 to 1,3 mm long, faintly reticulate near the margins.

### Climatic and soil requirements

#### Temperature

Temperature should be at least 18 °C at planting. Amaranth can tolerate quite high temperatures of 30 to 35 °C. It also requires warm and sunny conditions. Optimum growth is obtained in regions lower than 800 m in altitude.

#### Rainfall

During the dry season it is advisable to irrigate the crop to prevent early flowering. The plants do not withstand waterlogging and will begin to form seeds under drought conditions.

#### Soil

*Amaranthus* grows on loose and friable soils with high organic matter content. It grows best in light soils, with a pH of between 5.5 and 7.5.

### Cultural practices

#### Planting

Planting time ranges from September to December, depending on soil temperatures.

#### Propagation

Amaranth is propagated from seeds.

#### Fertilisations

Phosphorus and potassium can be applied at soil test recommended levels. Nitrogen requirements may vary from 50 to 200 kg N/ha and the requirement also differs, depending on the species. Plants can be fertilised using kraal manure at 66 kg/ha. It is always advisable to conduct soil tests and apply fertiliser according to the recommended rates.

#### Irrigation

Although the plant is drought resistant, it performs optimally under irrigation. The watering frequency depends on the stage of development of the crop and the soil's water-retention capacity. In sandy soils, 4 to 5 days irrigation frequency is maintained and lesser days with other soil type.

#### Weed control

Early weed control by tillage is important as amaranth grows slowly during the first few weeks. Use of chemicals is not recommended because of the risk of poisoning.

#### Pest and disease control

As a result of the risk of poisoning, chemical control of pests is not recommended. Seed-borne diseases can be prevented by using healthy seed and optimum