

whereas downy mildew, leaf spot, soft rot, mosaic, spotted wilt are frequent diseases. Rotations with non-host plants such as onions as well as planting resistant cultivars are some of the ways to control diseases. Baits and chemical sprays when a pest is noticed are also some of the ways to control pests.

### Acknowledgements

HADFIELD, J. 1995. *The A-Z of vegetable gardening in South Africa*. Cape Town: Struikhof Publishers.

L. ALLEMANN & B.W. YOUNG, *Vegetable production in a nutshell*, KwaZulu-Natal Department of Agriculture.



Further information can be obtained from:

Directorate Plant Production  
Private Bag X250  
PRETORIA 0001

Tel: +27 12 319 6072  
Fax: +27 12 319 6353

2010

Printed and published by:

Department of Agriculture, Forestry and Fisheries

Obtainable from:

Resource Centre  
Directorate Agricultural Information Services  
Private Bag X144  
PRETORIA  
0001

# Lettuce



agriculture,  
forestry & fisheries

Department:  
Agriculture, Forestry and Fisheries  
REPUBLIC OF SOUTH AFRICA

## Background

### Origin and distribution

Lettuce probably originated from Asia, where it was grown for centuries. Its early forms were used in Egypt around 4500 B.C. The Romans grew types of lettuce resembling the present romaine cultivars as early as the beginning of the Christian era. The crop was also used in China by the 7th century A.D. Lettuce is now one of the most important salad crops and is grown worldwide.

### Soil and climatic requirements

The crop has high moisture requirements and not more than 50 % of the available water in the root zone should be depleted before irrigation. The plant grows well in a wide variety of soils, ranging from light sand to heavy clay. However, the best results are obtained in fertile loams that are rich in organic matter. A pH of between 5,5 and 7 is optimum. Lettuce should be grown in soils with a high water-holding capacity and good drainage for good root growth and plant performance.

Lettuce is a cool season crop that grows best within a temperature range of 12 °C to 20 °C. It is not damaged by light frosts and winter cold, except near maturity. Severe frost before harvest can scorch the leaves and heads. Temperatures above 27 °C affect head development and plant edible quality and it promotes premature seed stalk development. High temperatures also inhibit germination and can result in a high incidence of tipburn.

## Uses

Lettuce is used mainly in salads. However, the leaves may even be boiled like spinach. It is also used frequently in sandwiches. In some parts of the world, the leaves are rolled into a cigarette that does not contain nicotine. Seeds of a primitive form found in Egypt are used to manufacture some edible oil. A sleep-inducing medicine is manufactured from the latex found in *Lactuca virosa* L.

## Cultural practices

### Soil preparation

Lettuce seed is small and as such requires soils that are not prone to crusting. The soil should be worked to a fine tilth, without clods, and it should be as level as possible in order to have a more uniform emergence.

### Planting

Raised beds are ideal for lettuce production and they help prevent damage from soil compaction and flooding. Air flow around the plants is also improved, resulting in reduced disease incidence. Plant populations range from 60 000 to 100 000 per hectare.

Lettuce is regularly sown directly in the field at a depth of 10 to 15 mm. The seedlings are thinned out later to the desired spacing and they are sometimes used for transplanting. Seedlings for transplanting may also be raised in seedtrays or seedbeds and transplanted about 5 weeks after sowing.

## Fertilisation

Fertiliser recommendations should be based on soil analysis. Overfertilising with nitrogen may result in increased susceptibility of the crop to various diseases or disorders. Generally, a 2:3:4 (30) fertiliser mixture at a rate of 500 to 1 000 kg/ha can be applied, depending on soil fertility. A side-dressing of 150 to 250 kg LAN per hectare can then be applied at 4 weeks. Lettuce also responds well to organic fertilisers.

### Irrigation

Lettuce has a shallow root system and as such requires frequent but lighter irrigations. The roots penetrate the soil to a depth of only 300 mm. Water should be applied throughout the growing period and reduced when the heads become full. Water shortage tends to promote bolting.

### Weed control

Weeds are controlled mechanically, manually or chemically. Mechanical weed control can only be practised before planting because of close spacings. Weeds are removed by hand hoeing or pulling between plants in the rows. Chemical control can be achieved by applying propyzamide shortly after sowing, which can last up to 12 months and longer in the soil.

### Pest control and disease control

American ballworm, nematodes, snails, cutworms and aphids are the most frequent pests on lettuce