



Celery

Apium graveolens L

2013

Printed and published by:
Department of Agriculture, Forestry and fisheries

Contact Details

Directorate: Plant Production
Division: Vegetables

Tel.: +27 12 319 6072
Fax.: +27 12 319 6372
E-mail: DPP@daff.gov.za
Website: www.daff.gov.za



agriculture,
forestry & fisheries

Department:
Agriculture, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA

Disclaimer

This document has been compiled by the Department of Agriculture, Forestry and Fisheries and every effort has been made to ensure the accuracy and thoroughness of the information contained herein and the department cannot be held responsible for any errors, omissions or inaccuracies in such information and data, whether inadvertent or otherwise. The Department of Agriculture, Forestry and Fisheries therefore accepts no liability that can be incurred resulting from the use of this information.

BACKGROUND

Origin

Celery is a native to the Mediterranean area and is derived from wild *Apium graveolens* L., which grows in the marshes of Europe and North Africa and in mountainous parts of southern Asia. The early form of celery was leafy, pungent and bitter and its use was medicinal. It was first cultivated as a food plant in the early 1600s.

Climatic and soil requirements

Celery is a cool season crop, but sensitive to prolonged cold temperatures. The crop requires high humidity and temperatures between 13°C and 24°C for plant development and high yields. Celery has a high water requirement. If rainfall is inadequate then supplement the water supply through irrigation. In this instance a uniform moisture condition must be maintained right through the growth period.

Celery can be produced in a wide variety of soils but it prefers a fertile soil which is loose and friable. Furthermore, light soils are preferred over heavier soils, e.g. sandy soil to clay loam. The soil should however, have a good water-holding capacity. It should also be deep, well drained and have a pH ranging from 6 to 6.5.

Uses

Celery is used in salads, soups and stews. The outer, tough petioles are the basis of celery soup. Celery seeds are used in flavouring food and as medicine. Chopped celery stalks can be cooked as a vegetable.

CULTURAL PRACTICES

Planting

A level surface is required for the production of the celery crop. The surface helps reduce complications that may be associated with the type of irrigation system or even runoff. Celery is usually established, using seedlings, although it can also be planted by direct seeding. The seeds are sown indoors after being soaked in water for about 12 hours to enhance germination.

Celery in its wild form is a biennial plant, but it is produced as an annual crop. The suitable planting time for celery should be during the cool winter months. The seed should be planted very shallow because it takes long to germinate and emerge if sown deep. The recommended depth is 3 mm.

Fertilisation

Celery is a heavy feeder and to lower the costs of fertilisers, organic matter should be worked into the soil. The fertiliser application should be based on soil nutrient analysis results. During the production season, leaf and soil analyses can be conducted to determine the nutrient levels. Nutrient sprays can be used occasionally to supply magnesium, boron or calcium because serious disorders may develop if these elements are deficient.

Fertilisation is normally in split applications, with one half applied before planting and the remainder 4 weeks before harvest. The latter treatment encourages rapid head development in comparison to those without a side-dressing. The preplant application may be also be either broadcast or band placed.

Irrigation

A sprinkler irrigation system can be utilised for celery production, but because of a higher risk of foliage diseases, drip irrigation is preferred over sprinklers. The irrigation system that should be used, should apply a consistent and regular supply of water.

Frequent irrigations are preferred and these are determined by soil type. Lighter soils need more frequent water applications, but smaller volumes per application. Irregular or infrequent water applications may intensify black heart, which is caused by a calcium deficiency.

Weed control

The integrated methods of weed control include crop rotation, eradication of weeds before they produce seeds, irrigation before planting to allow weed germination, followed by cultivation to reduce the seed bank in the soil. The manipulation of plant spacing between the rows and the beds can also be implemented with the aim of suppressing the weeds.

Weeds are also controlled carefully with shallow cultivation but care should be taken not to damage the shallow root system. Registered chemicals can also be used integrated with cultural practices.

Pest and disease control

Celery must be closely monitored throughout the growing season for infestation by various pests. Common pests affecting celery include aphids, leaf miners, cutworms and nematodes. The integration of several methods can help control a variety of

pests. These methods include crop rotation, sanitation in the field and the removal of host plants such as the weeds.

Diseases such as early blight, late blight, leaf spot and heart rot are very common and can be controlled by the application of registered chemicals as soon as possible after the identification of the symptoms. Other control measures include applying copper oxychloride as a protective spray or other registered chemicals, utilising seeds free from the disease and blanching the crop during cloudy and humid weather conditions.

Acknowledgement

BAKER, B.T. & HODGE, D. *Celery growing in South Australia Commercial celery production*. University of Wisconsin. Madison.

KOCHHAR, S.L. 1986. *Tropical Crops: A textbook of Economic Botany*. Macmillan Publishers. London.

MINISTRY OF AGRICULTURE, FISHERIES AND FOOD. 1983. *Celery: Protected cropping*. MAFF publications.

NICKLOW, C.W. 1970. *Celery. Cooperative Extension Services*, Michigan State University. Michigan.

SANDERS, D.C. & MC CARTHY, W.H. *Commercial celery production in Eastern NC. Department of Horticultural Science, North Carolina State University*. www.ces.ncsu.edu/depts/hort/hil/hil-27.html