

Celery is a half hardy vegetable that's available from July to December from outdoor production. In 2016 (date of last census) a total of 45 hectares were grown. Celery is propagated in blocks or modules under protection and transplanted out into the field. Most growers buy in their plants from specialist propagators and these notes do not cover the plant raising phase. The major inputs for this crop are water and nitrogen.

**SOIL TYPE** Celery will grow on a wide range of soil types such as clay or silt loams. Moisture retaining soils are best.

**PH** Celery is sensitive to soil acidity and below a pH of 6 growth becomes increasingly restricted. The pH of the soil should preferably be around 6.5-6.8.

**FYM** This is a crop that will benefit from additions of organic matter such as farmyard manure or spent mushroom compost.

**ROTATION** Allow a break of 4-5 years between all crops in the Apiaceae family. These include celery, carrot, parsnip, coriander and parsley.

**SYSTEM** Celery is always grown in a block either on the flat or on raised beds.

**FERTILIZER** Apply the following amounts (kg/ha) according to soil analysis:

Index	1	2	3	4
N	100	85	65	50
P	88	65	55	28
K	375	270	230	175

**Compounds** Normally a boronated compound is used such 8-5-18, 8-3-18 or 6-10-18.

**Nitrogen** Celery has a high nitrogen requirement. The crop can be top dressed with nitrogen up to the equivalent of 200 kg/ha split into two (or more) applications about 3 weeks after transplanting and again about three weeks later. Use of calcium nitrate rather than calcium ammonium nitrate as a top dressing material will help to prevent blackheart from occurring.

**Boron** Celery is susceptible to both boron deficiency and toxicity. Boron deficiency is called 'cat's claw' (splitting of the epidermis along the vascular veins). Apply a couple of foliar boron sprays after planting in addition to using a boronated compound.

**CULTIVARS** The old traditional self blanching white varieties have now been replaced by mid-green varieties. Hybrid varieties have also been developed for this crop. The standard cultivars are Victoria F1, Plato and Greensleeves. Victoria is probably best overall. Plato is nicer looking than Victoria but doesn't hold as well – tends to go pithy – so needs to be harvested on time.

**PROPAGATION** Celery is normally propagated by single seeding blocks or modules with Quick Pills which are pre-germinated coated seeds. They are then grown on for a number of weeks under glass, before being hardened off and planted out.

**PLANTING OUT** Celery is always planted out on beds, usually 4 rows across a 140 - 150 cm bed using a 4-row planter or by hand planting. Plants are spaced in a diamond shaped pattern. Celery is planted from around 20 April to 20 July to crop from mid July to December. The early planting can be subject to bolting and the latest planting can be caught by early frosts and is normally only grown in coastal areas. The main crop is planted in May and June. It takes about 3 months for a crop of celery to mature.

**SPACING** 325x325 mm, 300x300 mm, 300x250 mm

**SUCCESSION** For succession plant every 2 weeks.

**IRRIGATION** Do not grow celery without access to irrigation as water it is an essential crop input. Letting the crop go dry may induce calcium deficiency.

**WEEDS** There is quite a restricted range of herbicides for use on celery so if possible use a stale seedbed prior to planting. The following off-label herbicides are registered: Emerger at 1 l/ha, Stomp Aqua (OLA) at 2.9 l/ha, Defy at 4 l/ha and Fusilade at 1.5 l/ha.

**PESTS** Carrot fly, aphids and slugs are the three commonest pests to attack celery. Celery fly (leaf miner) may be an occasional problem.

*Carrot fly* Worst attacks are with the first planted crops in May and June. Eggs are laid at the base of the plant which hatch to very small larva that eat the roots which checks the growth of the plant. You will notice a yellowing of the leaves and a lack of thrive with the affected plants. There is an off-label recommendation for the use of Karate Zeon on celery for carrot fly control at a rate of 50 ml/ha with a maximum total dose of 150 ml/ha. it is debatable if you will get adequate control of the pest at this rate. The minimum rate that will control the fly is 100 ml/ha.

*Aphids:* Aphids can sometimes be a problem especially with later maturing crops. Pyrethrum can be applied up to 30 June 2020.

<b>Product</b>	<b>Rate</b>	<b>Max. No.</b>	<b>HI</b>
Pyrethrum 5 EC	20 ml in 5L	-	1 day

*Celery Fly* Celery fly or leaf miner is an occasional pest of celery and the larvae feed in the leaves causing large blisters. Usually only affects early planted crops, typically seen in June. Unless the attack occurs when the plants are small the damage is usually cosmetic but there may be market resistance if blistered leaves are present. The adult flies emerge from April to June. The only approved insecticide for the control of celery fly is Sparviero but it is of limited in its effectiveness.

*Slugs* Slugs can directly damage the plants and also cause problems by moving up into plants that are close to harvest. Apply 1-2 applications of a metaldehyde or ferric phosphate based slug pellet.

*Other pests* Pigeons are not a problem but crows may root up recently planted transplants. Keep an eye out for rat damage on late crops.

**DISEASES** The major disease of celery is leaf spot and occasionally pink rot can show up. Pythium root rot can also occur if rotation is poor.

*Leaf spot* This common disease of celery is caused by *Septoria apiicola*. It causes brown spots on the leaves and stem particularly in wet weather. Occurs every year and a preventative spray programme needs to be carried out every 14 days from July on or earlier if disease is seen. There is now a reasonable range of actives available to control this disease.

Product	Rate	Max No.	HI
Score	0.5 l/ha	2	3 weeks
Amistar Top	1 l/ha	2	2 weeks
Switch	1 kg/ha	2	2 weeks
Nativo	0.3 kg/ha	3	3 weeks

*Pink rot* Pink rot is caused by *Sclerotinia* and can attack a wide range of vegetables including celery especially crops grown under protection. It causes a water soaked appearance on the leaf stalks which often turns pink; a white fluffy growth subsequently appears in which the resting black sclerotia develop. There are no chemicals available for the control of pink rot. Practice long rotations to minimize outbreaks of this disease.

## DISORDERS

*Blackheart* This disorder is associated with calcium deficiency and causes the centre of the plant to turn black. It may cause the complete loss of a field or affected plants may be scattered in occurrence. Calcium is not very mobile within the plant and to ensure maximum uptake keep the crop evenly supplied with water. Irregular watering can induce the disorder especially a heavy application to a dry field. At the first signs of blackheart spray on calcium nitrate at 10-20 kg in 1000 litres per ha or apply smaller amounts regularly to prevent its occurrence.

**HARVESTING** Celery is normally harvested from about mid July to December. The late crop is a bit of a gamble and will depend on weather conditions as celery won't stand heavy frosts. The crop is usually cut from a face, packed directly into a plastic sleeve and put into crates.

**COOLING** Cool the crop in a fridge prior to sale.

**YIELD** A good cut of celery would be 90-95% which would represent about 80,000 heads per ha.