



LESS IS MORE WITH CELCOTE



Use less water
and water less
often

With **CELCOTE**
mixed into
your compost



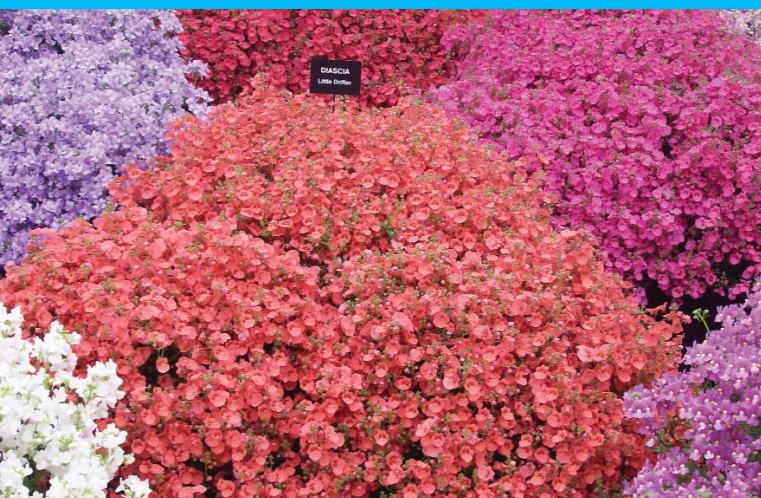
- Celcote is a unique naturally occurring polysaccharide water management compost additive
- Used in conjunction with a 'lean watering regime' results in a significant reduction in overall water usage and watering frequency, saving time and money
- Can be used on all containerised plants and results in bigger, stronger plants, improved shelf life and no unsightly jelly or compost heave

CELCOTE

Water management is crucial in containerised plant production. This is especially so in protected crops and when water availability can be scarce. If UK population levels increase as projected then demands on our water supply will become ever greater. Commercial users will be faced with an ever increasing cost for this vital natural resource. Effective tools that ensure economical use of water will be essential. By using Celcote as a compost incorporated additive growers can produce plants that use less water and require watering less often thus saving on money and time but also still producing bigger, stronger more saleable plants - It's a 'win, win' situation

WHAT IS IT AND HOW DOES IT WORK?

Celcote contains a naturally derived polysaccharide which has been modified to enable it to lock onto any **organic fibres** within the compost (both peat and peat free substrates). On first watering Celcote is activated and then migrates throughout the substrate. It produces a water-holding film on the organic fibres within the compost without affecting the air fill porosity (AFP). This film absorbs water and then gradually releases it as the plant requires.

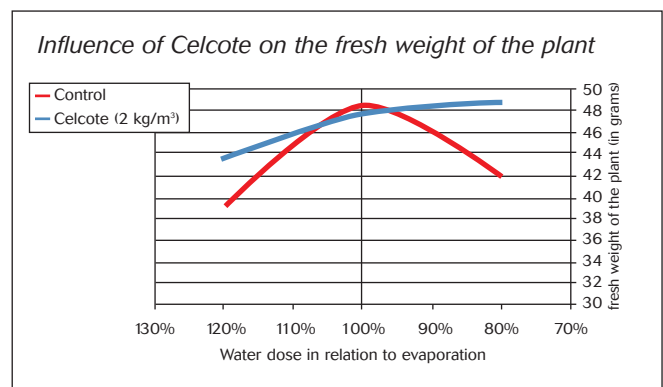


RESULTS

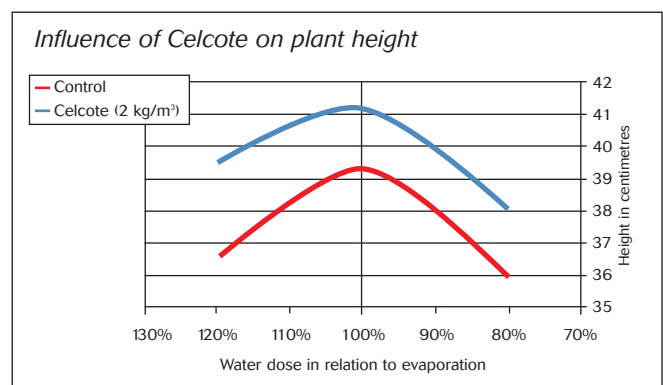
In trials, where Celcote was incorporated into the compost there was a significant improvement in plant height, weight, root volume and root quality compared to the control. Significantly it showed benefits in both under and over watered situations demonstrating that it has benefits across the moisture spectrum.

The trials were carried out at Boskoop research station in the Netherlands on *Caryopteris clandonensis*. The maximum rate of Celcote was used (2kg/m³) and compared with control. Both treatments were then subjected to three watering regimes: 80%, 100 % and 120% of the optimum water required by the plant. This was monitored by evapotranspiration.

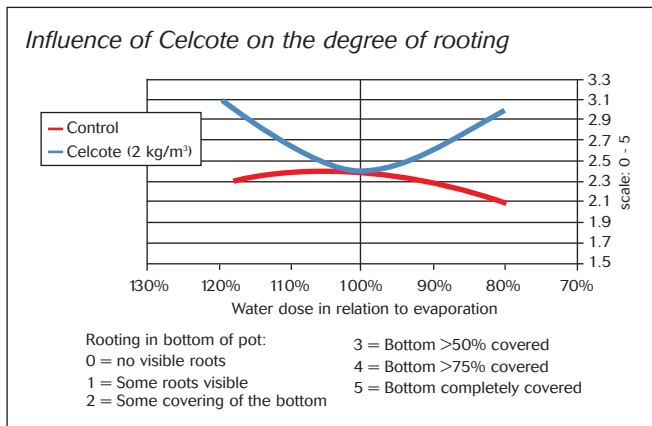
The results were dramatically clear. A lean watering regime and Celcote incorporated into the compost helps produce bigger, stronger more saleable plants and saves on water and time.



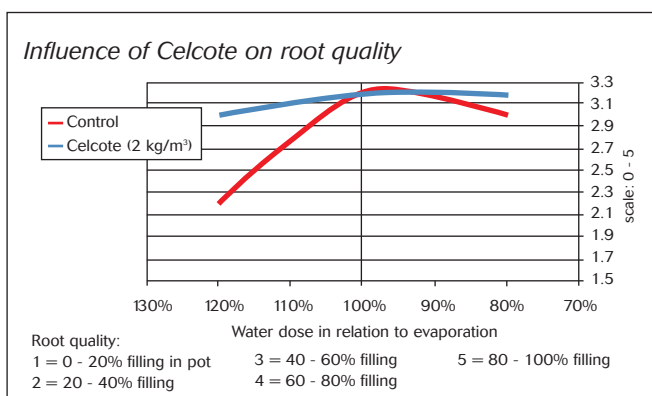
In this trial fresh weight was measured. It can be seen that in both a lean watering regime - underwatering and an overwatered situation the fresh weight was greater where Celcote had been used.



When height was measured it can be seen that in all situations where Celcote was used there was a significant increase in the height of the plant.



In this trial, the degree of rooting was measured and it can be seen that in both extremes rooting increased significantly compared to the untreated and the conventional optimum water amount.



This trial measured root quality - the amount of fine hair roots which are critical to efficient osmosis. The treatment using Celcote demonstrated an evening out of root quality in both extremes.

MANIPULATING GROWTH

Celcote can not only be used as a tool to minimise water usage and watering frequency. It can also be used to manipulate plant growth. Plants grown in Celcote treated compost are bigger and have a larger root system than plants grown in the untreated compost.

By taking the plants almost to the point of wilting the plants go into 'stasis' - neither growing nor wilting. Thus if a crop is too far advanced for the market the use of an ultra lean watering regime coupled with careful monitoring will help hold the plants back until market conditions are right. Then watering can be resumed and the now actively growing plants will be ready to be marketed.

CROPS/SITUATIONS

Celcote can be used on any containerised plants. In practice this means a host of different situations. For example:

- In crops which normally grow in dry conditions such as Lavender, Rosemary and Thyme will all benefit from a lean watering regime
- In propagation units where running a drier regime will reduce the risk of root diseases and where evenness of germination is important
- Bedding plants where the risk of root diseases can also be reduced and where there is the opportunity to manipulate the growth pattern of the crop - slowing it down if the crop is getting too far forward
- Hanging Baskets which dry out extremely quickly when on display unless regularly watered (and in practice often over watered causing a leaching of vital nutrients) can be watered less frequently and with less water. This has obvious benefits both on the nursery, in the retail outlet and on display - particularly public amenity displays
- Plant troughs and tubs can also be watered less frequently and with less water. This has obvious benefits when on display, particularly public amenity displays where the cost of daily watering can be very high
- Fruit crops such as blueberries and raspberries, which are increasingly grown in containers, where water borne root diseases such as phytophthora spp are an ever present risk
- Hardy Ornamental Nursery Stock where time spent on the nursery growing needs to be minimised but also where availability of labour to both monitor and carry out watering can be limited at certain times of the year.

BENEFITS

In general Celcote saves growers, retailers and others both time and money. It can also help make money as well.

Water costs money, labour costs money but bigger, stronger more saleable plants make money.

Here are 10 specific benefits of using Celcote:

1. Reduction in water bills
2. Saving on labour costs
3. Improved plant growth rates
4. More even seedling emergence
5. Better root development
6. Improved flowering from using lean watering regime
7. Plants better able to tolerate drought in transport and on the shelf
8. Better survival rates in transplants
9. No unsightly jelly or compost heave
10. Reduced impact on the environment

HOW TO USE IT

Rates of Use:

Most situations between 1 and 2 kg per cubic metre of compost (equivalent to 80-160 g/80 litre bag of compost). If the compost contains more than 40% coir or bark then use 2 kg/cu m. Tub or basket mixes should have 2 kg/m³.

With a low AFP (air filled porosity) substrate e.g. blocking composts use between 0.5 and 1.0 kg/m³ of compost.

For seed sowing composts use no more than 1 kg/m³.

Compost types:

Celcote can be used in all organic based composts such as peat, coir, bark, wool fibre, cocoshell, etc. The effects in coir are greater than those in peat, since coir does not have good water retention properties. Normally a higher dose rate should be used on bark and coir based composts (2 kg/m³).

Celcote will not be effective in wholly mineral soils or in artificial substrates such as rockwool.

Celcote has no significant effect on the pH of composts when used at the recommended rate.

All year round production:

Celcote can be used on crops grown in the winter as it has no effect on the AFP or compost structure. The water present in the compost is tied to the compost fibres and does not fill up air spaces thus reducing the threat from water logging and possible disease.

Nutrient levels:

Celcote is unaffected by regular liquid feeding and by controlled release fertilisers. Celcote will not reduce compost temperatures nor will it prevent/affect the release pattern of controlled release fertilisers. However, by providing more available water it will enable the plant to make more use of available nutrients and grow more quickly.

Other additives in the compost:

Celcote already contains a wetting agent which, together with its unique film forming polymer, enhances the water retention attributes of the compost. So in general terms it is not necessary to add any additional specific wetting agent to the compost. However, if the compost is allowed to totally dehydrate then re-wetting will be difficult no matter what additives have been incorporated.

Direct use with plant material:

Celcote is designed to be added to organic substrates. It is not recommended for direct use with plant material i.e. as a root dip. However, bare rooted plants and cuttings will of course benefit by being planted into Celcote treated compost.

Length of time in compost:

Celcote is very stable and once locked onto the organic matter in the compost 1-2 years persistent effect can be expected. In a 12 month period 30% of the Celcote will have been broken down.

SUMMARY

Seasonal variations in rainfall and temperature levels can make life difficult for plant producers, retailers and others. Ever increasing demands on water resources in the UK will exacerbate this problem. By using Celcote growers can produce plants that can better withstand the vagaries of the weather, reduce the demands on water supply and help control their costs.

- Use Celcote at all stages of potting
- Use Celcote between 0.5 - 2 kg/compost
- No effect on compost AFP or pH
- Easy to mix with no unsightly jelly or compost heave
- Improved shelf life in the retail environment

Celcote is a registered trademark of Certis Europe BV

Further information

For specific advice on Certis products, visit our website www.certiseurope.co.uk, or telephone the Certis technical hotline **01980 676501** or fax **01980 626555**

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