

Culture Sheet: *Technical Information for Growers*

Name: *Echinacea* sp. **Common name:** coneflower

Scheduling Information

Available sizes: 72 and LP50 **Sales Window:** pot up anytime during the growing season

Plug size	72	LP50
Finish size	Trade 1 gallon	Trade 1 gallon
Weeks to finish	8-10	6-8
When to plant	Mid-late summer, early spring-early summer	Late summer, early-late spring

Growing on to Finish

Media:	Professional potting media
pH:	5.8-6.2
Irrigation:	Uniformly moist but not wet. It is important that Echinacea are not overwatered. Overwatering may result in plants that grow more slowly in containers and are more susceptible to disease. Plants should never be allowed to sit in excess water.
Fertilizer:	Apply 75-150 N ppm of a standard water soluble fertilizer every 7-14 days once plants begin growing. Echinacea DO NOT like to be over fertilized when growing in containers. This often leads to increased incidences of crown and root rots and a general decline in plant vigor. Use slightly acidic soil with an EC of 1.0-2.6 using the pour through method for best results.
Light:	Echinacea are considered intermediate day plants, requiring 12 to 16 hours of day length to flower. Day lengths less than 12 or more than 16 hours will tend to keep the plants in a vegetative state. When day lengths are short and flowers are desired, provide 4 hour night interruption. Night lighting interruption will cause plants to stretch – apply first growth regular application before lighting begins and apply every two weeks thereafter. Discontinue lighting once plants begin to bolt (7-8 weeks later). Run crops a little dry during forcing to avoid disease issues.
Temperature:	Rooting out: 65-70F Growing: 68F Holding: 50-60F
Vernalization	Cold beneficial to hasten flowering and increase uniformity. 11-14 week treatment around 41F in cold frame or unheated greenhouse.
Pest & Disease:	Whitefly, aphids, thrips and many types of caterpillars. Many of these insects carry plant viruses that can be transmitted to Echinacea. Botrytis, Rhizoctonia and Pythium. Echinacea are susceptible to Aster Yellow's disease

Grower Tips:

- Avoid stressing the plants during flower initiation – stress can cause flower distortion

To overwinter successfully: (Walter's Gardens)

- Be sure the plants are fully rooted and have a good size crown. Undersized plants will not overwinter well.
- Slowly reduce the level of feed going into fall as the temperatures cool.
- It is recommended to drench plants with a preventive fungicide treatment in late summer to prevent root and crown rots.
- A soil test should be performed to measure where the soluble salts levels are (also know as EC). This should be in the .5-1.0 range using the pour through method of testing. Elevated salt levels will burn the roots and cause crown and root rots.
- Monitor soil moisture through the winter. Avoid overly wet conditions and be sure to avoid heavy condensation in the greenhouse.
- During exceptionally cold periods during the winter a heavy frost blanket will help provide extra protection from the cold.
- Avoid large temperature swings as this causes premature flowering

Disclaimer: Cultural information is provided as a guide only. North Creek Nurseries does not guarantee the exact results, as growth and finish times may vary depending upon your location, climate, cultural practices and other influences. Always check manufacturers' labels for approved rates and usage instructions when applying fertilizer or other chemicals.

Sources: Darwin Perennials, Walter's Gardens, Ball Redbook