

Overwintering Perennials

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Sunny Border Nurseries, Inc. grows, in containers, over 2000 taxa of perennials with another 500 or so in trial development. Overwintering perennials is a broad subject and the type used depends upon the species in question. Several different methods are used. Most of our container crop is overwintered in the field. Unheated hoop houses with two layers of air-inflated plastic are used for marginally hardy genera, such as *Anemone*, *Delphinium*, *Lupinus*, and *Stokesia*.

Field covering begins during the second week of November and is finished by Thanksgiving. Several years ago the temperature reached -6F on the Friday following Thanksgiving. At this time there were 5 inches of snow which saved thousands of dollars of plants. Experience has shown that most container perennials growing above ground in pots will not survive if root temperatures reach 10F. Care must be taken to ensure that the soil temperature in the pot is maintained above this critical level. Weather is very unpredictable in New England. Because temperatures were so warm in the early weeks of November this year, 1994, covering was delayed. Covering too early can heat up the plants and make them more susceptible to cold temperatures by inducing a flush of both roots and shoots. The crop is allowed to go through a hardening off period before covering. Generally a few frosts of 20F to 25F are needed to complete this process.

The week prior to covering is spent on clearing away dead leaves and flower stalks. Taller foliage is cut back to pot level with a weed-whacking machine. All previously spaced pots are brought together into a tight row. Plants within a row are consolidated so that they are pot-to-pot. The majority of our crop is grown in square pots. Growing pot-to-pot increases the insulation factor. Round pots are grown pot-to-pot with the exception of the vine program that has a 3-ft bamboo stake in the pot. In this instance the pots are tipped on their sides to allow for covering. Two different mouse baits are applied in the field because mice and vole can become tolerant to a single form of rodenticide. Two or three forms of active ingredients are preferred. The products are purchased from exterminating supply companies rather than nursery or farm supply companies to give us more options. These creatures can have a very damaging effects on many types of plants. They will have a feast during the winter months if not kept in check. Plants such as *Astilbe*, *Baptisia*, *Clematis*, *Dianthus*, *Hosta*, *Liatris*, *Papaver*, and *Sempervivum* are susceptible. When mice and voles damage is first sighted in September, mouse bait is applied to reduce the population in that specific area. Just prior to covering, mouse bait is placed in every row at 30- to 40-ft intervals. To prevent water rot due to excessive moisture during the winter months, a fungicide spray is applied before covering. Spraying applies only to items that have previously experienced winter rot or any of the winter molds and mildews. Plants covered with microfoam and plastic are more susceptible to rot because the material does not breath. The winter of 1994 generated 17 to 18 storms and with this came increased amounts of moisture. A lighter soil mix which retains less moisture is optimal for rot-susceptible plants. It is not advisable to have the growing medium too wet at time of covering.

Covering is accomplished with two types of covers: white polyethylene with ¼-inch microfoam and a white non-woven polypropylene material (cloth). The overwintering cloth-like product can be purchased in light, medium, or heavy grade. Sunny Border Nurseries, Inc. only uses heavy grade fabric for overwintering. This material will let moisture in while retaining heat. The product can be reused for several years. Some cloth-like material has been used at Sunny Border for 6 years with more to go. A simple rule of thumb is used. If plants are evergreen or pseudo-evergreen, use cloth, or fleece as it is termed in Europe. This is an effective cover on *Achillea*, *Arabis*, *Aubrieta*, *Coreopsis*, *Echinacea*, *Gaillardia*, *Iberis*, *Leucanthemum*, *Phlox*, *Rudbeckia*, and *Sedum* to name a few. If the plant is prone to smothering or is very brittle during the winter, set up temporary hoops before applying the cloth with either conduit or concrete rebar bent to the width of the row. Upside down flats are another option which allows an air space between the plant and the cover. If a plant goes completely dormant and is deciduous during the winter, apply 1 to 2 layers of ¼-inch microfoam with an outside layer of white polyethylene. This method is effective on *Asclepias*, *Clematis*, *Dicentra*, Ferns (dormant), *Hemerocallis*, *Hosta*, *Miscanthus*, and *Platycodon* to name a few.

There are exceptions to this rule. Plants that have repeatedly died over winter are now grown in holding houses through the winter. These houses may be totally unheated or marginally heated to maintain a higher temperature.

There are several factors to be aware of during the winter months.

1) Freezing and Thawing. Some plants can handle this better than others. Any plant that is susceptible should be overwintered in a hoop house.

2) Excessive Moisture with a Layer of Ice. This can have a smothering effect. Excessive moisture can also lead to rotting of the crown of the perennial plant. A well-drained medium along with a preventative fungicide spray or drench can reduce this crown rot effect.

3) Wind. The wind can cause the covering material to blow off the plants. Sand bags are placed every 4 to 5 ft along the side of the row to hold down the over wintering material. The cloth fabric rarely blows up because the wind penetrates the material. The polyethylene-microfoam combination is sometimes a nightmare and a messy situation if the coverings are not secured properly. Another method for securing the coverings is to use 1 inch × 3 inch × 48 inch furring strips with a 6- to 8-in. landscape spike pounded into the ground. If the ground softens during thaws, weakening the spike, the plastic loosens. Try a longer spike or move them if this does occur. A combination sand bag-furring strip works well.

As new cultivars become available, test blocks are placed in the field and different overwintering methods are tried and evaluated for success. There are some cultivars which require minimal protection over winter while others have been much more difficult. There are few sources of information due to the lack of research of this subject. Most of our techniques have been developed through the trial-and-error method. The average survival rate at Sunny Border is 95%. A 90% success was seen in the extreme winter of 1994.