

HIGH HUMIDITY PROPAGATION USING SWEAT BOX METHOD

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In these days and times of intermittent mist, high humidity greenhouses, and tissue culture, you may wonder why anyone would consider cold-frame propagation. When the ornamental nursery industry was getting started in this country 100 or more years ago, cold frames undoubtedly were the means used for most propagation of hardwood cuttings. The two best reasons for taking a second look at this method are economy and simplicity.

The increasing interest being shown by growers in the direct rooting of cuttings in pots makes the sweat box worth thinking about. One of the main drawbacks to direct rooting is the increased propagation area required to handle all these pots. If this area has to be placed under a mist system or in greenhouses, costs begin to increase proportionately.

With the sweat box there are no greenhouses, mist heads, or any other mechanical parts required. Basically, the system involves enclosing a ground bed or liner bed in an airtight environment, thereby creating a high humidity atmosphere around the cuttings. We do this by the use of 4-mil white poly film supported by concrete reinforcing wire, similar to the method commonly used for winter protection of liners. The heat generated under this cover, in conjunction with moisture derived from the rooting medium, produces almost 100% relative humidity. In the absence of air circulation or drafts, part of this high humidity condenses and forms a thin film of moisture enclosing the leaf surface of the cuttings. This film prevents moisture loss from the leaves due to transpiration. Mist propagation depends upon replacing moisture lost from evaporation; with this system we prevent evaporation from occurring.

The rooting beds should be located in a partially shaded area, either in a shade frame or under trees. Partial shade is needed to prevent excessive heat buildup since the ideal time for this propagation method is June through August.

Peat or plastic 3 or 4-in. pots are placed on the bed and filled with rooting medium. Almost any material or combination of materials commonly used in propagation can be used in the sweat box as long as it has high moisture retention but is still fairly well-drained. At Wildwood Nurseries we use 3-in. square peat pots filled with a commercially-prepared rooting medium called Metro Mix 300 for azaleas and camellias. For most other species we use fine pine bark and field sand in a three-to-one proportion. After the pots

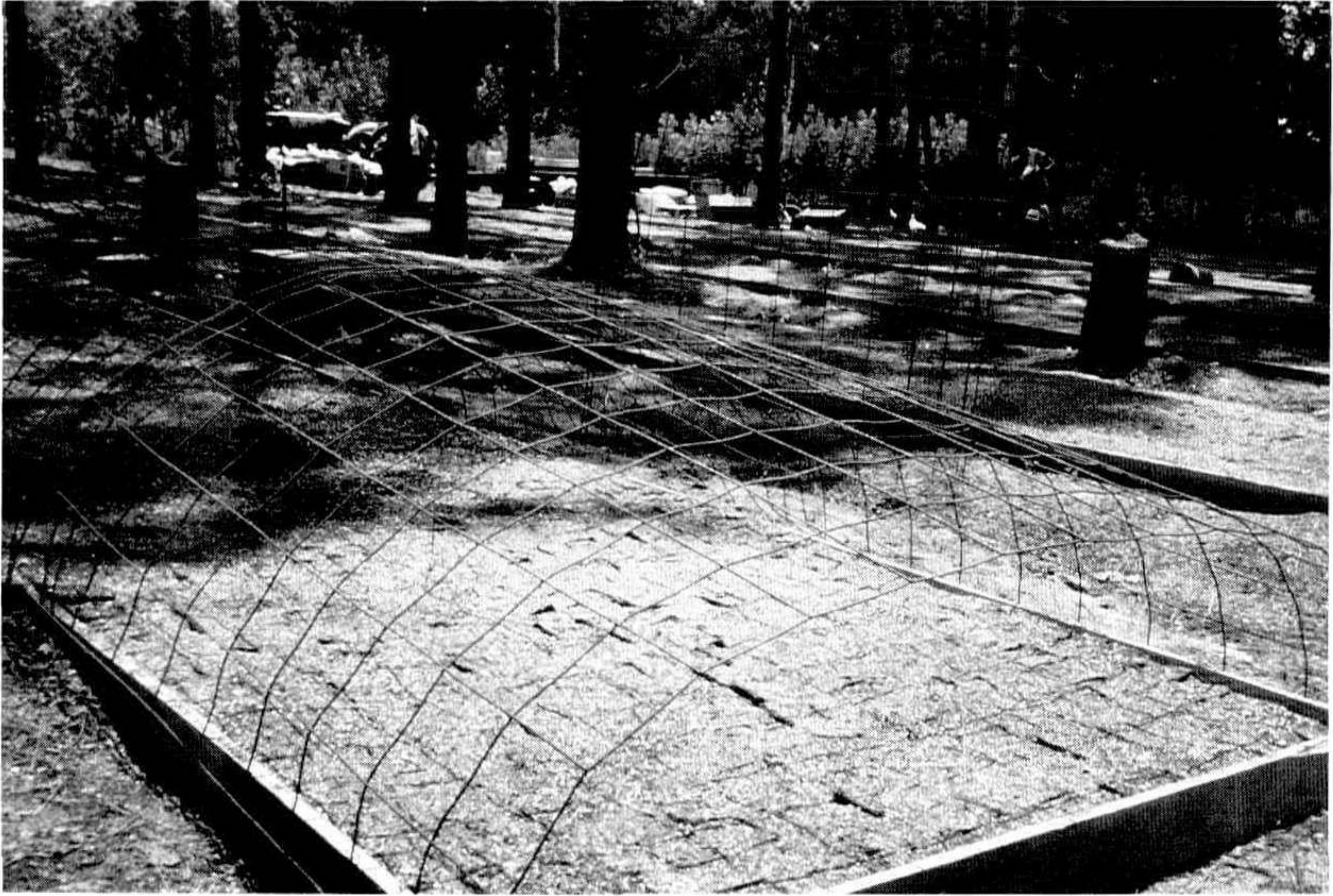


Figure 1. Bed with concrete reinforcing wire in place, ready to cover with plastic.

are filled, the concrete reinforcing wire is put in place, as shown in Figure 1, then covered with polyfilm, sealed and fumigated with methyl bromide gas.

Allow at least 48 hours of fumigation before uncovering and an additional 48 hours for excess gas to dissipate. It is important that the bed be thoroughly dampened before sticking your cuttings because you are depending on this moisture to provide the necessary humidity during the rooting period. The bed will probably remain covered from 10 to 12 weeks, depending on how fast the various species form roots.

Cuttings are usually put in during June, July, and August. There is no change in the manner in which cuttings are made. It is advisable to use a fungicidal bath to insure complete coverage before sticking cuttings. After cuttings are stuck, the bed is sprayed with a fungicide, covered with polyfilm, and completely sealed. When put in during this time the cuttings will have time to root and be hardened-off before cold weather.

The hardening-off procedure requires fairly close attention. Observe your cuttings regularly after the fourth week. By 4 to 6 weeks new growth will be visible and roots will be forming. At 10 to 12 weeks the airtight atmosphere is gradually broken by cutting a few holes in the polyfilm covering. Since this same plastic cover will be used for winter protection, be careful to make cuts that can be resealed at a later date. By October or early November all beds can be gradually uncovered and allowed to harden. Water thoroughly and spray with fungicides and insecticides as you would

any other rooted cuttings.

Before the first frost, recover the beds for winter protection. If they are well watered at this time, they will usually carry until they are permanently uncovered the following spring. The time required from cutting to finished liner is about 10 months.

PROPAGATION OF CALLUNAS AND ERICAS IN THE UNITED KINGDOM

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INTRODUCTION

Before talking about propagation perhaps we should say something about the plants.

Calluna vulgaris. (Ling) is indigenous to the northern, western, and southern moorlands of the British Isles, as well as other parts of Europe and Asia Minor. As a garden plant it is easily grown in an open situation but most must be planted in acid soil. There are some, however, that will stand a certain amount of alkalinity. The plants are both attractive as flowering plants from July to November and as foliage plants for early spring and autumn colour. There are literally hundreds of cultivars now available from British nurseries.

Erica. (Heath)—Several species and again several hundred cultivars are propagated and grown in the United Kingdom. In fact, it is possible to have ericas in flower most months of the year. The species of particular significance are:

<i>E. herbacea</i> (Syn. <i>E. carnea</i>)	Winter-flowering heath	flowering November– April
<i>E. ciliaris</i>	Dorset heath	flowering July–October
<i>E. cinerea</i>	Bell heather	flowering June– September
<i>E. × darleyensis</i>	<i>E. herbacea</i> × <i>E.</i> <i>erigena</i>	flowering February– April
<i>E. tetralix</i>	Cross-leaved heath	flowering June–October
<i>E. vagans</i>	Cornish heath	flowering July–October

All, except *Erica herbacea*, require acid soil conditions. This will tolerate a slightly alkaline soil.

Most callunas and ericas are dwarf-growing mat-forming plants. This makes them ideal for small gardens. It is a common practice to plant with dwarf conifers, which add height to the planting and enhance the year-round color of the planting scheme.