THE PROPAGATION OF *BERBERIS* BY CUTTINGS

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Propagation of *Berberis* can be carried out in three ways: seed, division, and cuttings. I shall concentrate on the last of these methods, cutting propagation, which is the main method we use in our nursery. First a word about the stock plants. These are fed with A.I.I.I., N.P.K. + trace elements fertilizer in the spring at which time they are pruned back to encourage vigorous growth.

On our nursery we have most of the stock plants outside but we have some, e.g. *Berberis* 'Harlequin', 'Darts Red Lady', 'Pink Queen', 'Rose Glow', 'Gold Ring' and 'Green Carpet' planted under polythene to produce a large amount of growth fairly quickly. This is the first year I have had this type of stock plant under cover and so far the signs are encouraging as the growth produced is first class.

Now to the mechanics of the operation. There are two types of cuttings taken on the nursery, one type for the mist unit and the other for cold frames. The first method used during the year is the mist unit and such cultivars as *Berberis* 'Harlequin', 'Rose Glow' etc. are taken for the mist, as these produce good soft growth suitable for the environment mentioned. Also with these cultivars being much in demand at the present time one wants the best possible take.

These cuttings are taken during the last two weeks of August. They are of a nodal type and about 4″ long. The lower three sets of leaves and spines are trimmed off and the cuttings are dipped in Seradix No. 1 or No. 2, depending on the maturity of the cuttings. One point to note is that if the cutting is too thin it will not root or, if it does, it will not overwinter satisfactorily.

The cuttings are placed 60 to a seed tray in a mixture of 60% 1/16″ grit and 40% peat, with a ¼″ layer of grit in the bottom of the tray so as to assist drainage. This is because if the mist unit is not working 100% effectively, as often happens, too much water is placed on the cuttings, resulting in basal rotting. The basal temperature in the mist unit is 21°C (70°F). The cuttings are sprayed with Benlate every two weeks so as to try and keep them in a healthy state. As the cuttings are on the mist unit during late August and September there should not be any shading on the glasshouse, as maximum light is required. After six weeks 75% rooting may be expected. They are then taken off the mist bench and overwintered in a heated polythene tunnel.

The second method we use is cold frame production. This is the main method used on the nursery and the species of *Berberis* propagated with this method include: *Berberis* × *stenophylla*, *B. darwinii*, *B.* × *ottawensis* 'Purpurea', *B. thunbergii*, *B. verruculosa* and *B. candidula*.

The rooting medium in the frames consists of an equal mixture by volume of grit, peat and parent soil. This mixture is well forked through and then raked to remove any large lumps of soil.

There are two types of *Berberis* propagated in the frames, deciduous and evergreen. The deciduous types are propagated from mid-September to early October. The type of cuttings are nodal or of a mallet type. Those that lend themselves to a nodal type are the *B. thunbergii* and *B.* × *ottawensis* cultivars. The cuttings are 4 to 5″ long of the current year's growth. The minimum thickness of the cuttings is just below pencil width. The lower three leaf joints and spines are removed and the cutting is then dipped in Seradix No. 3. The cutting is then inserted in the cold frame at a spacing of 1½″ square. These are well watered in and covered with a shaded Dutch light. Rooting of the deciduous types sometimes takes place before the winter, but if not they root by the spring.

Evergreen cultivars are taken next from early October to early November. Mallet cuttings are used with the exception of *Berberis* × *stenophylla* where nodal cuttings are used. The length and treatment of the cuttings are the same as with the deciduous types.

The shading on the Dutch lights is removed during December as maximum light is required. Shading, consisting of emulsion paint and water, is put on again during March so as to reduce scorch on the cuttings. Once rooted the cuttings are potted up in 3″ polythene pots.

MIST PROPAGATION — PAST, PRESENT AND FUTURE

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Past and Present. The International Plant Propagators' Society was founded at a time when mist propagation was in its infancy as a commercial system in the United States, and the founding members played a significant role in its development. The early history of the method has been outlined by Snyder (16). Mist propagation has frequently been viewed as a