

Propagation of Birch by Softwood Cuttings

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INTRODUCTION

Birch is one of the most commonly used trees in America's landscapes. For many years the primary propagation method was by seed. Selection for superior landscape characteristics created a need for clonal propagation. The two methods most widely used in the industry are micropropagation and softwood cuttings.

LaPorte County Nursery propagates the following birch cultivars by softwood cuttings: *Betula nigra*, *B. nigra* 'Cully', Heritage™ river birch, *B. nigra* 'Little King', Fox Valley™ river birch, and *B. platyphylla* var. *japonica* 'Whitespire Sr'.

MATERIAL AND METHODS

Plant Material. Softwood tip cuttings are taken from field or stock plants in early June. Cuttings are then recut to a length of 4 to 6 in. The bottom leaves are then stripped off so there is 2 in. of stem to place in the rooting medium. A two-node cutting may also be used instead of tip cuttings. The cuttings are then placed into bundles for treatment.

Bundles of cuttings are completely dipped in a Green-Shield® solution. This is a soapy disinfectant for sanitation. Cutting bundles are allowed to dry off some before the hormone treatment. Bundles are dipped in a solution of Woods rooting hormone of 2500 ppm IBA for 10 sec. Cuttings are kept moist at all times prior to sticking.

Medium. The medium consists of peat and perlite mix (1 : 1, v/v). All parts are thoroughly blended and run through a shredder.

Propagation House. Polyhouses are covered with double-layer poly with the outer layer being white. The floor of the house has a fabric with 1 in. of pea gravel underneath. Before the cuttings are stuck, the whole house is treated with Green Shield®.

Anderson band pots are placed on the floor and filled with medium. Two sizes of pots are used — 2-3/8 in. and 3-5/8 in. A single cutting is stuck in the 2-3/8 in. and 4 to 5 cuttings in the 3-5/8 in. Cuttings are direct stuck into the pots on the floor.

Mist is supplied using Eddie Mist nozzles. Misting is controlled by a Phytotronics controller and a 24-h timer. Misting begins at 6:00 AM and shuts off at 8:00 PM. No bottom heat is used and the air temperature is controlled by ventilation.

Post Rooting. Root initials begin to appear in about 3 weeks. On an average year 90% rooting can be obtained. Once root initials are visible, the mist is gradually decreased. If the cuttings are taken early in the propagating season, an additional 4 to 6 in. in growth can be obtained by fall. All cuttings are overwintered in polyhouses with minimum heat.