

## Early Spring Frost Protection for Fall-sown Maple Seedlings®

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Lawyer Nursery, Inc. grows approximately 250 species of seed propagated bare-root liners at our nursery in Olympia, Washington. We sow seed of woody trees and shrubs directly in the field during all seasons of the year. The Olympia area is prone to subfreezing spring temperatures through the middle of May and we have experienced early-spring frost injury to newly emerged seedlings that were sown the previous fall. For many species we are able to manipulate the sowing date to minimize environmental injury. My discussion today describes our use of row cover to protect fall-sown *Acer palmatum* f. *atropurpureum* from early-spring frost.

We typically sow fresh Japanese maple seed in late September directly into outdoor seedbeds. After the seed is sown, we form hoops over the seedbeds with concrete reinforcing wire. This wire is 10-gauge steel wire welded into a 6 inch × 6 inch grid and it is available in sheets that measure 7½ ft × 20 ft. To prepare this sheet to become a seedbed cover support, we must first cut the 20-ft length of wire off of each edge so we have 6-inch wire legs along each side. With three people, we stick these 6-inch legs along the 20-ft length of the wire sheet into the edge of the seedbed using a 20 ft, 1 × 4 for a straight edge. While one person holds the wire upright, the other two people jump to the other side of the seedbed and stick the 6-inch legs on the other side of the sheet into the opposite side of the seedbed. The 6½ ft width of the wire becomes the semi-circumference of a hoop over the seedbed, which is about 24 inches high at the peak and 46 inches wide.

We leave the wire in place over the winter uncovered. This prevents wear and tear on the covering, allows us to spray through the wire if we need to control winter weeds, and allows the seed to stratify over the winter in the seedbed. About the first of March we begin to monitor the seedbeds for germination activity and begin to cover the wire frames at the first sign of germination.

The product that we've been using for this application is Agribon 50, a polypropylene spunbond, that offers frost protection of 6 to 8°F. This material comes in a range of widths, the one we use for the application described here is 10 ft × 500 ft. The 10-ft width allows us to roll the bottom of the fabric, staple it to the soil surface at the edge of the wire frame with a 6-inch ground staple and then cover the roll with soil. The material stays in place until June when it is rolled up and placed in storage. The fabric can be used for several years and the reinforcing wire will last indefinitely. The cost of the fabric and the wire is approximately \$1.10 per bed foot. We install approximately 2000 ft of this cover and the installation cost is about \$.25 per bed foot.