

A QUICK METHOD OF COLLECTING AND CLEANING ASPEN SEED

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In the past few years, the Station has received a number of requests from different forest research organizations for small amounts of seed of aspens (Populus grandidentata and P. tremuloides) and balsam poplar (P. balsamifera). Until this past spring, we collected such seed, cotton and all, from the opening catkins and shipped it uncleaned. We do not know how the recipient handled it, but presume the felted mass was pulled apart and sown in small parts containing several to many seeds.

During this year's collection of aspen seeds, we worked out a collection-cleaning technique that not only speeds up the actual collection of the seed but completely frees it from its cotton. Except for a small amount of debris such as dried floral parts, the seed is clean, no cotton remaining attached to it.³

Since this technique may be useful to nurserymen and others handling the seed of these and other species of Populus, it is described in detail.

Collecting.--Bring branchlets bearing near-mature catkins into a warm closed room with little or no air movement, and set them in vessels of water (the water perhaps is not necessary). When the catkins begin to open, usually on the second or third day, collect the seed with an upholstery-type vacuum cleaner with a clean cloth sack substituted for the dust bag. (Some such cleaners have a motor-driven brush but this does not seem to be of any particular value and can be disconnected.)

When bag is full or when suction is notably reduced, turn bag inside out and remove the felted mass of cotton (fig. 1).

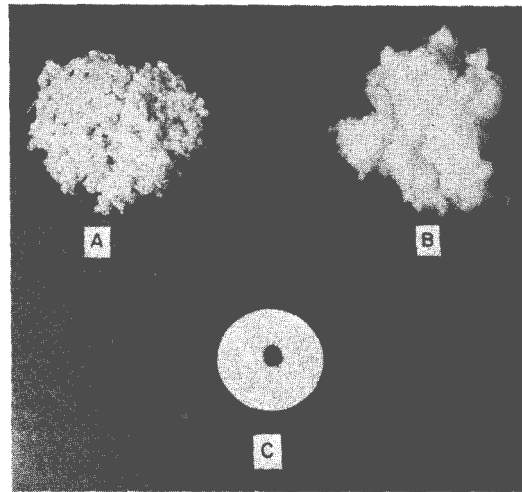


Figure 1.--A, The felted mass of bigtooth aspen seed (Populus grandidentata) as it comes from vacuum cleaner bag. B, Felted "cotton" of bigtooth aspen after seed has been removed by air blast. C, Seed of bigtooth aspen extracted by air blast.

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² Maintained at St. Paul 1, Minn., by the Forest Service, U.S. Dept. of Agriculture, in cooperation with the University of Minnesota.

³ By using a cleaning device such as a South Dakota blower, the debris can likely be removed. However, the little that remains will not interfere with sowing.

Cleaning. --An appreciable number of seeds will be freed from the cotton in the collecting process, and many more can be released by rolling and shaking the felted cotton in a 22-mesh screen. This will pass clean seed of both aspens and balsam poplar.

However, if a supply of compressed air is available, all of the seed can be removed from the cotton. Our technique, which likely can be modified without affecting the results, is as follows: Place the massed seed in a 16-mesh soil screen sandwiched between one of 32-mesh (above) and another of 150-mesh (beneath). Pass air at about 50 p.s.i. through the upper screen into the middle screen through a length of 1/8-inch bore, 3/64-inch-wall rubber tubing. The tube should be hand-held about 3 inches from the free end. The end of the hose will then flutter and the shifting air blast will cause the mass of cotton to roll about in the screen and release its seeds (fig. 2). In a few minutes all of the seed will be free of the cotton and drop into the bottom screen (fig. 1). If too much air is used, some of the cotton will also pass through, but this can be removed with a puff of breath.

This method is effective for bigtooth aspen and balsam poplar; it undoubtedly would work equally well for seeds of other species of Populus and perhaps for other downy seeds. Germination tests show that the seeds come through the "delinting" process without apparent injury. This is not the case when the cotton is burned off. Even when the seeds are not in felted masses and the cotton will therefore burn in a split second, a large number will be killed. Such injury has been observed in both of the aspens, balsam poplar, and cottonwood.



Figure 2.--Air blast technique. A jet of air is passed through top screen into middle screen containing cottony mass of seed; cleaned seed collects in bottom screen.