

# Cleaning Hardwood and Shrub Seed

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Cleaning hardwood and shrub seed can be viewed as having four phases: post harvest storage, extraction, basic cleaning and upgrading. This paper gives a brief description of each phase and equipment that has been found to do the work. Equipment vendors are also listed.

Post harvest storage is concerned with maintaining good viability between collection in the field and extraction. Fruits which are dry at maturity need only to be kept dry and out of the heat. Fruits which are moist at maturity need to be kept moist and prevented from heating and fermentation. Examples of this type of species would be acorns and any fleshy fruits.

Extraction is removing the seed from the fruit. This is often a necessary step for efficient sowing in the nursery and for obtaining high germination. Seeds in fleshy fruits can be separated from the pulp in a slowly turning grinder or in a macerator. It is often helpful to

soak fleshy fruits for 3 to 7 days to soften the fruit. This must be done with running water or the water must be changed daily to prevent fermentation. Dry fruits of many species have been successfully prepared for cleaning using a brush machine to remove dry fruits walls and wings or to singularize seeds which are born in clusters.

The basic cleaning phase is the removal of the larger amounts of trash. The extraction process often can leave a significant amount of fine or coarse trash. Usually air-screen machines, screen machines, aspirators, or blowers are used for this step. The air is used to remove light trash of the same dimensions as the seed while the screens can be used to separate particles that are larger or smaller than the seed.

The upgrading involves the final removal of troublesome trash such as sticks and stones and the removal of empty seed or improperly formed seed. The

machines that are of great value here are precision aspirators or blowers and specific gravity tables for the removal of improperly formed and empty seed and the indent cylinder for removing sticks and stems. The aspirators, blowers, and specific gravity tables remove the empty and improperly formed seed because they weigh less than the good seed. Stones can be removed with the gravity table because they are heavier than the seed. Finally sticks can be removed with the indent cylinder because they are longer than the seed.

Detailed explanation of how this equipment works can be obtained from the author or from the equipment vendors. Vendor addresses and the equipment they supply are given in the following. The equipment is listed first with the vendor code number. These vendors are not endorsed by the author but are familiar to him. Other suitable vendors may be found by the reader.

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**Equipment for Conditioning Shrub and Hardwood Seed and Vendors Who Supply It.**

<u>Equipment</u>	<u>Vendor Codes</u>
Brush machines	5, 9
Macerators	1, 4
Aspirators or blowers	2, 5, 8, 9
Air-screen machines	5, 8, 9
Specific gravity tables	7, 8, 9
Indent cylinders	2, 6, 9
1. Bouldin-Lawson Rt 10, Box 208 McMinnville, TN 37110 615-668-4090	6. Ideal Grain and Seed Company 85 2nd Avenue SE New Brighton, MN 55112 612-636-7901
2. Carter-Day 500 73rd Ave., N.E. Minneapolis, MN 55432 612-571-1000	7. Oliver Mfg. Co. P.O. Box 512 Rocky Ford, CO 81067 303-254-6371
3. C.S. Bell Co. P.O. Box 291 Tiffin, Ohio 44883 419-448-0791 Fax: 419-448-1203	8. South Pine, Inc. P.O. Box 530127 Birmingham, AL 35253 205-879-1099
4. Melvin R. Dybvig 4025 Rio Vista Milwaukie, OR 97222 503-659-0718	9. Westrup, Inc. 1400 Preston Road Suite 400 Plano, Texas 75093 214-985-7991 Fax: 214-985-7887
5. Hendrickson Enterprises 4050 N.E. Minnesota Ave. Corvallis, Oregon 97330 503-757-8019	