

BLENDING DRY SEEDS CLEAN

Joseph D Scianna |

ABSTRACT

A kitchen blender with a slow-speed pulse button has been used to clean small volumes of a variety of seeds.

KEY WORDS

seed cleaning, Asteraceae, Poaceae, Rosaceae, Ranunculaceae, Onagraceae, Liliaceae

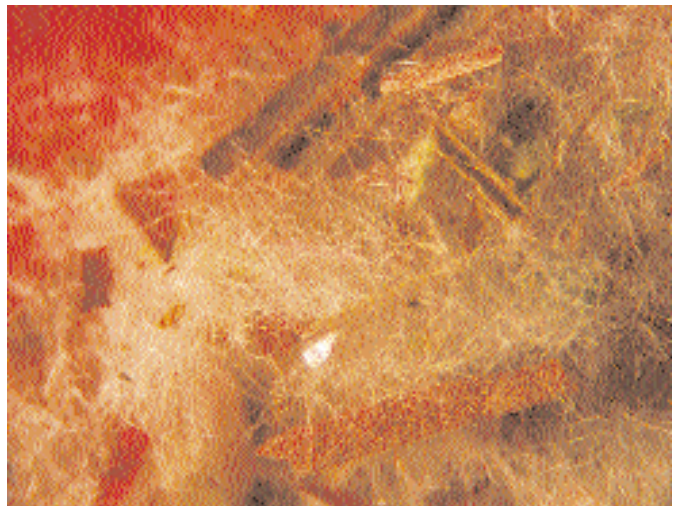
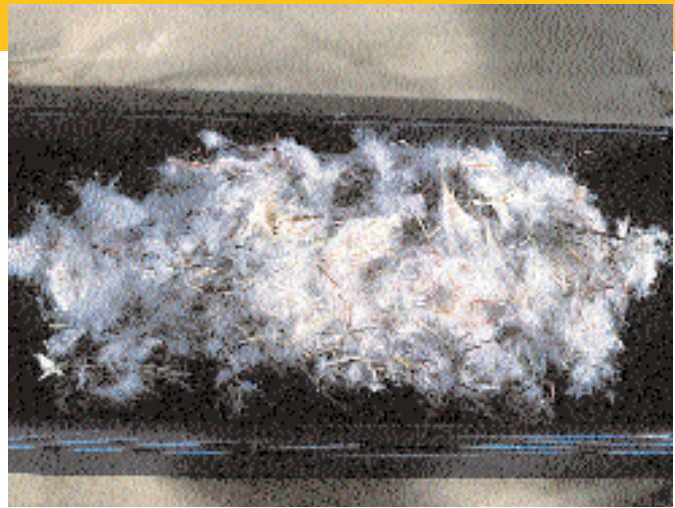
NOMENCLATURE

USDA NRCS (2002)

At the Plant Materials Center in Bridger, Montana, we process and clean more than 300 wildland seed collections annually, many consisting of small volumes of seedheads yielding less than 10 g (0.35 oz) of bulk seeds. If the seeds contain awns, wings, or other appendages requiring removal, or if the seeds are held tightly in the seedheads, the small volume of material cannot be adequately threshed in our hammermill. Manual processing of small volumes on a rubbing board is labor intensive and time consuming. To improve efficiency, we have developed a simple procedure using a conventional household blender.

Our technique begins with wrapping the impeller blades of the blender with duct tape to minimize seed damage. We wrap the blades so that the tape does not unravel or fray during use, but do not use so much tape that the impellers vibrate during operation, or bind with seeds and stems during processing. We recently became aware that coating the impeller blades with liquid plastic in lieu of duct tape has been used successfully in similar applications (Thomas 2003). An important feature of the blender is a low-speed pulse button, or other control that reduces impeller speed. The standard on:off low-speed setting on most blenders is too fast for seed processing.

By intermittently “pulsing” the low-speed setting, we control the duration and intensity of processing. Another important factor is the amount of seeds or seedheads initially placed in the blender. Too little material requires the addition of rice hulls or other inert material to create adequate abrasion. Too much material results in excessive maceration near the impellers, with little or no abrasion toward the top of the blender. The ideal amount of material to place in a blender varies with its size, but we find that 25% to 33% of storage capacity works well. Frequent inspection during processing is critical to assure that the seeds are not being damaged. Final



Photos by Joseph D Scianna

Using the blender, the extremely small seeds of fireweed (*Chamerion angustifolium* (L.) Holub ssp. *angustifolium*) collected in the field (top) can be extracted from the hair and other debris (bottom).

cleaning is by sieving and winnowing or processing over a small fanning mill.

We use this technique successfully on many genera of the Asteraceae including pearly everlasting (*Anaphalis* spp. DC.), arnica (*Arnica* spp. L.), balsamroot (*Balsamorhiza* spp. Nutt.), daisy (*Erigeron* spp. L.), blanket flower (*Gaillardia* spp. Foug.), golden aster (*Heterotheca* spp. Cass.), goldenrod (*Solidago* spp. L.), and aster (*Symphotrichum* spp. Nees). We have also used it with feathery achenes of *Geum* L. spp. (Rosaceae) and *Pulsatilla* P. Mill. spp. (Ranunculaceae), winged seeds of pines (*Pinus* spp. L. [Pinaceae]) and Douglas-fir (*Pseudotsuga menziesii* (Mirbel) Franco [Pinaceae]), and grass seeds (Poaceae) such as needlegrass (*Achnatherum* spp. Beauv.), wheatgrass (*Pseudoroegneria* spp. (Nevski) A. Löve), and wildrye (*Elymus* spp. L.). It also works well with dehiscent capsules of wil-lowherbs (*Epilobium* spp. L. [Onagraceae]) and glacier lily (*Erythronium* spp. L. [Liliaceae]).

REFERENCES

- Thomas D. 2003. Modifying blender blades for seed cleaning. *Native Plants Journal* 4:72–73.
- USDA NRCS. 2002. The PLANTS database, version 3.5. URL: <http://plants.usda.gov> (accessed 20 Jun 2003). Baton Rouge (LA): The National Plant Data Center.

AUTHOR INFORMATION

Joseph D Scianna
Horticulturist
USDA Natural Resources Conservation Service
Bridger Plant Materials Center
Route 2 Box 1189
Bridger, MT 59014
Joe.Scianna@mt.usda.gov

COLLECTING SEEDS FROM SOUTHEASTERN US WOODLAND SPECIES

Barry Glick |

ABSTRACT

In order to collect seeds from a wide range of southeastern US woodland species with diverse dispersal strategies, specially made collection bags are placed over plants. After collection, seeds are separated from debris with a strainer and further cleaned with a fanning mill. This method can be used for efficient collection of large numbers of seeds at ideal ripeness, in a nursery or in the wild.

KEY WORDS

seed dispersal, *Geranium maculatum*, *Jeffersonia diphylla*, *Viola* species, *Mitella* species, *Sanguinaria canadensis*, *Hepatica americana*, *Asarum canadense*, *Dicentra cucullaria*, *Dodecatheon* species, *Spiranthes cernua*, *Tipularia discolor*

NOMENCLATURE

USDA NRCS (2002)

A grower cannot be in all places at all times, especially when producing and collecting seeds from hundreds of species. Ripening seeds are a temperature dependent phenomena, and this is further complicated by each species having its own prolonged period of fruit maturation and dispersal strategy. At Sunshine Farms and Gardens, we collect seeds and grow many of the most desired southeastern US woodland species. Many of these species can be challenging to collect seeds from due to unique dispersal mechanisms of the fruits or dispersal agents or simply due to the small size of the seeds and fruits. We have come up with an efficient and effective method to address this challenge.

Southeastern woodland species are as diverse in their dispersal strategies and fruits as in their wide range of attractive flowers and growth forms. Spotted geranium (*Geranium maculatum* L. [Geraniaceae]) is a classic example of explosive dehiscence, where the seeds are spring loaded and catapulted away from the plant when the fruits mature and split along the sutures. Twinleaf (*Jeffersonia diphylla* (L.) Pers [Berberidaceae]) produces a unique seed pod that resembles a hooded pouch with a lid at the top that opens with a hinge-like attachment when mature. Similarly, several violets (*Viola* spp. L. [Violaceae]) have small pods that explode upon maturation.

Alternatively, seeds may be dispersed by an external force such as raindrops, which disseminate the tiny black seeds of