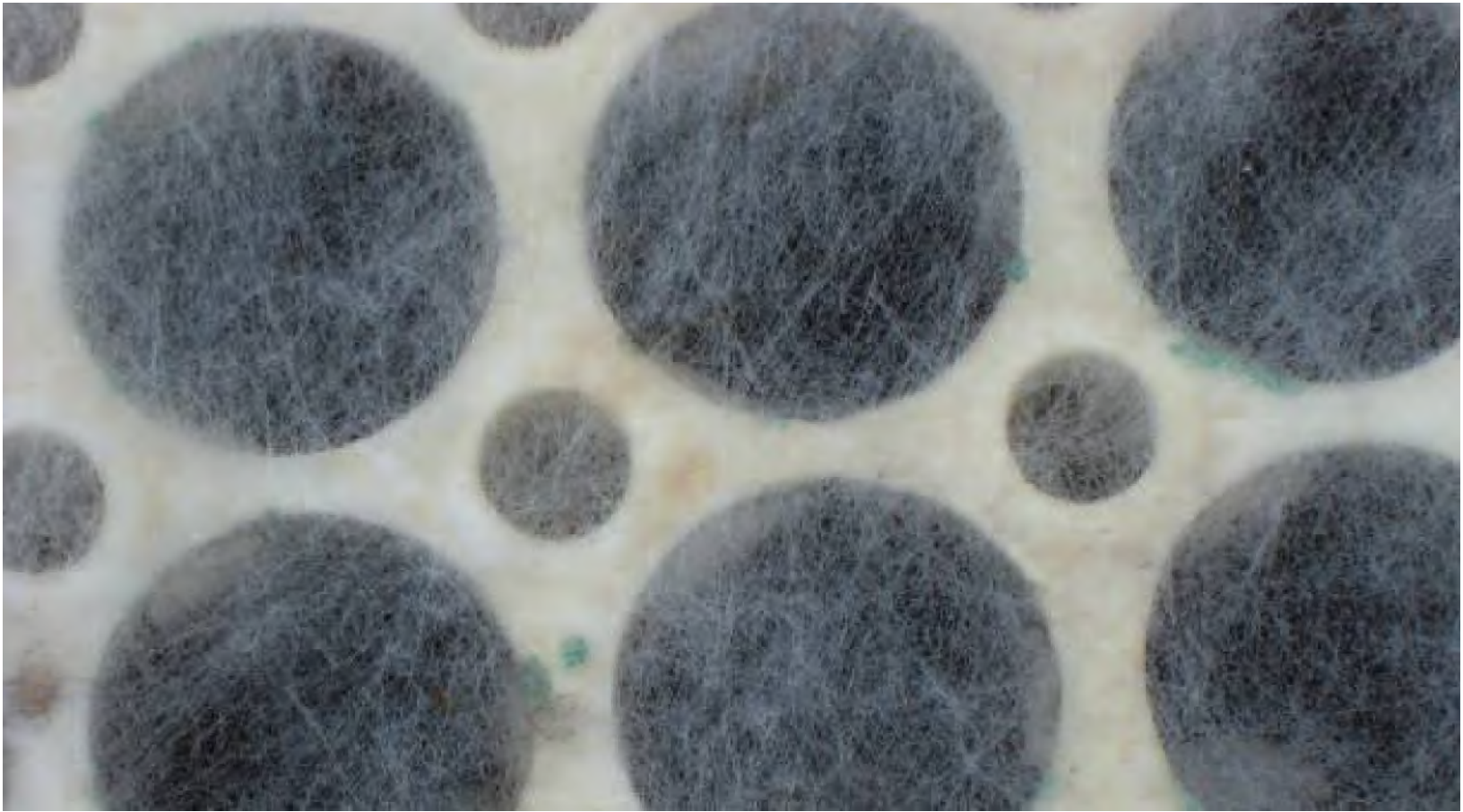


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© 83. **Using germination cloths in container and bareroot nurseries.** Schmal, J. L., Woolery, P. O., Sloan, J. P., and Fleege, C. D. *Native Plants Journal* 8(3):283-286. 2007.



ABSTRACT

Lightweight, permeable cloths can protect germinating seeds in container and bare-root nurseries by moderating temperatures and moisture and improving germination and seedling establishment. These fabrics are easy to apply and remove, and with care, can be reused for several crops.

Schmal JL, Woolery PO, Sloan JP, Fleege CD. 2007. Using germination cloths in container and bareroot nurseries. *Native Plants Journal* 8(3):282–286.

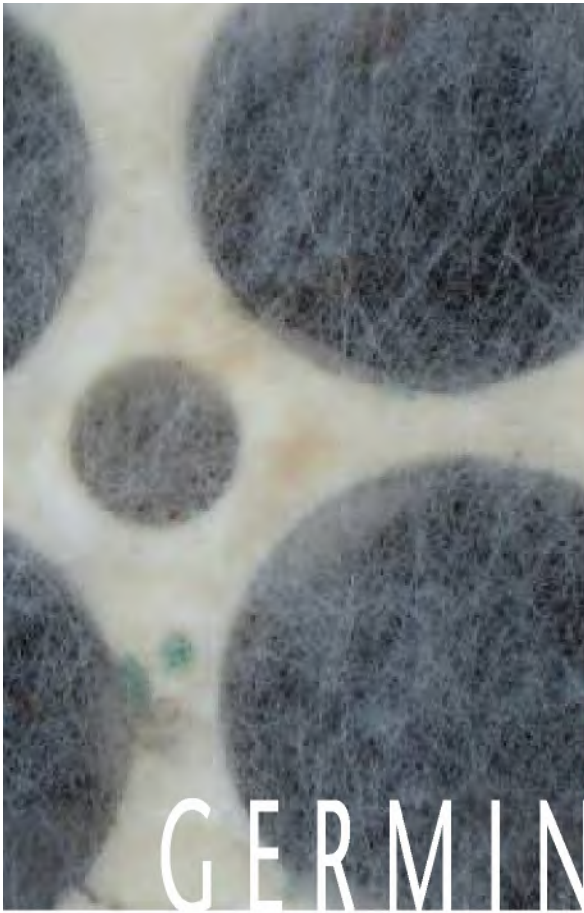
KEY WORDS

temperature, seedbed, Styroblock, N-Sulate, Seed Guard

NOMENCLATURE

USDA NRCS (2007)

Figure 1. The fabric is permeable to water and sunlight. Photo by Justin Schmal



Using GERMINATION CLOTHS

IN CONTAINER AND BAREROOT NURSERIES

Justin L Schmal, Phillip O Woolery,
John P Sloan, and Clark D Fleege

In container nurseries, using grit to cover seeds does an adequate job of maintaining seed placement in containers, maintaining moisture within growing media, and preventing weeds. Grit can be deleterious, however, when used with small-seeded species or with species with seeds that require light for germination. For small-seeded species, the weight of the grit may prevent emergence. Unfortunately, in these situations, using no covering on top of the seeds can lead to desiccation and seed, or seedling, mortality. To remedy these concerns, the USDA Forest Service Lucky Peak Nursery now uses the seed germination fabric known as Deluxe Seed Guard™ (DeWitt Company Inc, Sikeston, Missouri; US\$ 168 per 3.7-m x 305-m [12-ft x 1000-ft] roll) in place of grit. Lucky Peak Nursery first used

the fabric on sagebrush (*Artemisia* spp. L. [Asteraceae]) and other small-seeded species, moved forward to try a larger-seeded species, Douglas-fir (*Pseudotsuga menziesii* (Mirb.) Franco [Pineaceae]), and then, because the fabric improved germination success and early seedling development, adopted Deluxe Seed Guard™ for production of all container seedlings.

Deluxe Seed Guard™ is a lightweight 17 g/m² (0.5 oz/yd²), spunbonded, white, permeable material that allows enough sunlight and water to reach seeds and (or) seedlings while maintaining proper moisture content of the medium (Figure 1). The nursery has found that the Deluxe Seed Guard™ also does a great job moderating temperature. Surface temperatures underneath Deluxe Seed Guard™ are approximately 3 °C (5 °F)

warmer at night and 3 °C cooler in the afternoon as compared with surface temperatures without Deluxe Seed Guard™. The fabric also protects the seeds from bird predation. Lucky Peak has been using the cloth for 4 y and has reused some rolls as many as 3 times. Although the fabric is subject to tearing, making an effort to handle it gently during installation and removal can extend its usefulness. So far, the main reason for replacing the fabric is due to sanitary reasons. If the fabric is handled well and kept clean, replacement intervals could very well exceed 3 y.

The fabric comes on spools. Brackets were built at Lucky Peak Nursery to hold the spool of fabric; these lock onto the greenhouse supports (Figure 2). This system makes installation and removal of the fabric quick and orderly.