

PennMulch Use for Seedbeds

Charles C. Flinn

Musser Forests, Inc., P.O. Box 340, Indiana, Pennsylvania 15701 U.S.A.

BACKGROUND

Since 1928, Musser Forests has developed primarily as a bare-root seedling and transplant nursery. Sand was an early mulch used over seed to obtain germination. It was shaken through a screen by hand after being wheeled down the path in a wheelbarrow. Later improvements came using a tractor-drawn sanding machine that could be loaded with a high lift and that vibrated its way down the bed. This was also fairly slow, as the hopper needed constant reloading.

In the mid sixties, Musser Forests came into a new era of seed covering with the hydro-seeder. This machine applied the familiar green-dyed silva fibre mulch in a slurry, with starter fertilizer at the staggering rate of 2 to 3 miles of seedbed in an 8-h day. This of course involved a nearby water supply, pumps, and a 100-plus-HP tractor to handle the 4-ton load.

PENNMULCH INTRODUCTION

Just 2 years ago I was introduced to a new product that was developed for the turf industry called PennMulch. PennMulch is made from recycled and shredded newsprint. It is processed into dry compressed pellets that have 1N-3P-1K fertilizer incorporated into them.

Invention and development of the product was by George Hamilton, Agronomy instructor at Penn State's College of Agricultural Sciences. First marketed in 1995, PennMulch protects seedbeds and retains moisture; plus it contains its own fertilizer. Because it's in the form of dry pellets, homeowners will find it much easier to handle than traditional mulches, such as straw or peat. One 6-lb bag covers up to 100 ft² because once it's watered, it expands.

MUSSER FORESTS, INC. TRIALS PENNMULCH

Though PennMulch was developed with turf establishment in mind, I was encouraged by Mr. Tim Hurley of PennTurf products to give PennMulch a trial as a seed covering where we normally use the silva fibre mulch. The first trial was in Spring 1997 where side-by-side beds were compared using PennMulch and silva fibre. Each seedbed of 200-ft length was seeded identically using a Gandy drop seeder, sowing Scotch pine (*Pinus sylvestris*) seed. The PennMulch was applied at 42 lb per 100 ft of bed, a rate that appeared to give adequate coverage and closely matched the fertilizer amount applied in the hydro-mulch slurry.

After simultaneous germination of each it was soon readily apparent that the PennMulch afforded a good 10% to 15% greater germination and seedbed density than the silva fibre application.

The seedlings in the PennMulch bed were also about one third taller and stockier at the end of their first growing season. With the benefits readily apparent, Musser Forests, Inc. has gradually phased out the hydro-seeder and this past spring covered all of its seedbeds with the PennMulch.

BENEFITS OF PENNMULCH IN SEEDLING PRODUCTION

One of the greatest advantages of PennMulch for all growers is its ease and economy of application. A \$450 model 42 Gandy spreader with a #28 drop pan and a low horsepower inexpensive tractor is all that is needed to keep up with the most expensive 100-HP tractor and hydro-seeder. PennMulch offers a convenient mulch application for the small or larger grower. For smaller areas, it is even convenient to spread by hand from a bucket. Some of its main attributes are its ease in handling and storing, and the bags are waterproof. It is organic, and weed and pathogen free, so there is no worry about introducing problems to a recently sterilized seedbed. When the pellets swell they hold moisture well and slow erosion from raindrop impact. Price of the product is very comparable to the use of silva fibre mulch when labor and equipment overhead are considered.

For conifers and many of the small seeded hardwood species, we use 42 lb of PennMulch per 100 ft of 4-ft wide bed. The average cost of the product is about \$10 per 50-lb. bag, or 8.4¢ per lineal foot. The pellets, of course, must receive rain or irrigation to swell and become effective as a mulch, but I don't see this as a hindrance to PennMulch use since the seed itself will need some regular moisture to germinate. The end result is a seedbed of healthy trees.

PENNMULCH SPECIFICATIONS AND APPLICATION

PennMulch is dark green in color and has a bulk density of 35 to 40 lb ft⁻³. Its moisture content is less than 10% and the product has a minimum absorption potential of 3 times its dry weight. The pellets are of approximately 1/8 inch diameter and 1/4 to 3/4 inch in length. Fertilizer analysis of PennMulch has been determined to be 1% total nitrogen, 3% available phosphoric acid, and 1% soluble potash. For lawncare application, PennTurf Products, Inc., recommends the following simple instructions: first seed lawn to well cultivated soil; apply PennMulch by hand or with suitable spreader at a rate of 60 to 75 lb per 1000 ft², or approximately 55 bags acre⁻¹; and for best results, irrigate with 0.2 to 0.4 inches of water. The producer emphasizes not to remove PennMulch after application.

SUMMARY

More than 4 million lb of PennMulch has been sold to turf grass professionals since it was introduced in 1995 and I believe it will prove useful to growers in our nursery seedling industry.

ADDITIONAL INFORMATION

George Hamilton at The Penn State University, 106 Agricultural Administration Building, University Park, Pennsylvania 16802-2602. (814) 865-3007.