Penn State's Hamilton develops new mulch 'crucial to turf seedbeds'

Penn State's College of Agricultural Sciences has developed a new mulch for landscapers and turfgrass professionals.

Pennmulch (patent pending), developed by agronomy instructor George Hamilton, is made from chopped newsprint, magazines and other paper, and can be used in place of traditional mulching materials.

In addition to creating a use for large volumes of wastepaper, the product addresses a long-standing need in the industry.

"Mulching is crucial in turfgrass seedbeds for holding moisture, reducing erosion and protecting seeds from temperature extremes," said Hamilton. "But traditional mulches present problems. Many professionals use hydromulch — a mixture of wood fiber or ground paper combined with fertilizer and seed, which is sprayed onto seedbeds. Hydromulching requires an expensive machine and a highvolume water source for filling the hydromulcher.

"The alternative is straw, which often contains weed seeds, tends to blow away, and is difficult to store and handle. In addition, soil microorganisms that break down straw also deplete soil nitrogen."

Pennmulch is shaped into small, green pellets that are easy to ship and store. "It looks exactly like rabbit food," Hamilton said. "The pellets can be spread by hand or by many types of conventional spreaders owned by turfgrass

Koolau's Hoolehan

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"The bentgrass usually survives all year long, but we make no effort to keep it. We use no herbicides. We have a real strict IPM (integrated pest management) program here. Depending on the time of year, we want to see the disease before we spray. We have an IPM manager whose sole job is to be on top of disease

"We just can't justify the use of fungicides. We get hammered by dollar spot this time of year, and Bermuda merges about this time, too. But we just let it go."

Though Koolau sports bentgrass tees and greens, the fairways are overseeded with Bermuda during the winter season.

It's ironic that Hoolehan traveled to Hawaii and spent all that time learning to deal with warm-season grasses, only to look after a course with wall-towall bent, save the fairways a few months each winter.

"It's sort of ridiculous," he said with a laugh. "But you know what else I learned out here? It's hard to kill Bermudagrass."

professionals and landscapers. A starter fertilizer can be combined with the product so that fertilizing and mulching is done in one step."

When wet, the pellets expand to several times their original size so that a small amount covers a large area. Also, because the mulch is made entirely of paper, there's no danger of seedbeds being contaminated by weed seeds, he said.

While Pennmulch currently is marketed only to commercial operations, Hamilton hopes to make it available to homeowners soon. "The product has a large marketing potential," he said. A Pennsylvania Department of Agriculture survey shows that in 1989 homeowners spent nearly \$19 million on grass seed.

"Pennmulch has great possibilities for retail because it can be sold in any size bag, it is shipped and stored much more easily than traditional mulches and the shelf life is unlimited," he

said. "Although it was designed Pittsburgh. Last fall, 50 tons were for use in grass seedbeds, we're looking into other uses, such as gardens vegetable ornamental plantings."

Research on the product began three years ago with a Ben Franklin Partnership Environmental Technology Fund, which included in-kind support from the College of Agricultural Sciences.

Pennmulch is being manufactured by Penn Mulch, Inc., of produced and about 40 tons were sold to turfgrass and landscape companies.

"We're researching new sources of paper, development of a low-cost pneumatic spreader to apply the mulch, and variations of the product containing fertilizer and grass seed," Hamilton said. "We're also implementing an extensive marketing plan. I'm confident Pennmulch will establish a niche in the industry."

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