

# U of M licenses unique plant protection product

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Adapting a chemical used to deliver medicines through the skin, University of Minnesota Duluth (UMD) scientist Tom Levar has developed a way to protect plants from browsing by deer and mice by delivering a natural hot pepper concentrate through the roots of young plants, making them inedible.

"This is a game-changing technology," said Elizabeth Summa, president of Repellex USA, which licensed the technology from the university. "We're excited because there really is no other systemic deer repellent like this. It goes right into the plant, and doesn't wash off like spray deterrents."

Levar, a forestry and horticulture specialist at UMD's Natural Resources Research Institute, was familiar with how Dimethyl sulfoxide (DMSO) was used in veterinary and sports medicine to open pores in a membrane and move medicines through skin. He developed the plant formulation to move different types of protection chemicals through easily accessible plant pores.

In the case of Repellex, tablets with the delivery formulation are placed near the roots of a plant and, when watered, release a natural hot pepper concentrate known as capsicum that is absorbed by the plant, making it inedible.

"This is a great application because capsicum is very safe and very effective," said Levar. "There is no [genetic modification](#). Eventually the

plant will outgrow the capsicum treatment, but it lasts much longer than spray repellents."

This systemic plant conditioning composition, as the technology is formally known, can also be used with [insecticides](#) or [fungicides](#). "That includes anything within the realm of plant protection that includes small molecule [active ingredients](#)," said Levar. He started his research on the DMSO formulation with a bitter substance used to keep children from sucking their thumb.

"We did a lot of testing, mostly with tree growers in nurseries where they have a huge problem with mice eating away at their plants," said Summa. "We think professional growers and homeowners will find value in planting two tablets with their trees and not having to worry about their investment."

The product has been submitted to the U.S. Environmental Protection Agency for registration. Once approved, it will be available to commercial growers and shipped to retailers, likely in time for the spring planting season.

The university's Office for Technology Commercialization negotiated the license agreement for the systemic plant conditioning composition with Repellex. "This is an excellent example of how research at the Natural Resources Research Institute can be applied in an environmentally sound manner and, at the same time, help promote economic development and create jobs," said Eric Hockert, technology marketing manager.

Provided by University of Minnesota

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