

Biodegradable mulch

Project applies textile science to agriculture

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Vegetables growing under plastic mulch.

Researchers at WSU are working to develop a biodegradable mulch that would provide an alternative to costly and environmentally detrimental plastic mulch.

The research project spans three states and five research institutions, said **Debra Inglis**, associate plant pathologist and project director. Inglis is based at WSU's Northwest Washington Research and Extension Center in Mount Vernon.

The Department of Apparel, Merchandising, Design and Textiles is playing a significant role in the research. The Textile Research Lab is responsible for testing many of the intrinsic qualities of both fabric and plastic mulches, said **Karen Leonas**, department chair. Two AMDT undergraduates, Marc LaPointe and Leanne Goldstein, are conducting the physical and mechanical testing of the mulches.

"Textiles play a big role in the evaluation of the product, and with the textiles lab, we're well situated to contribute to this project in an important way," Leonas said.

The fabrics are being tested to determine how well they respond to different kinds of weather conditions and their biodegradation rate.

Leonas said the research project started when she ran into a long-time colleague who was studying biodegradable materials. Leonas asked the colleague to send her an abstract of his research, and then forwarded the abstract to the chair of WSU's Department of Horticulture and Landscape Architecture, **Rick Knowles**.

He realized this research could be applied to the agricultural realm, and introduced Leonas to **Carol Miles**, an associate vegetable horticulturalist who was researching alternative mulches for weed control in vegetable production systems.

"We found there was an overlap in the research, and decided to proceed with the project," Miles said.

The research project has enormous potential to positively impact farmers, Miles said. The alternative mulch potentially could create a reduction in the waste stream of plastic mulch, most of which is disposed of in landfills. This in turn would eliminate the cost farmers pay to remove and dispose of the plastic mulch.

“This alternative would also benefit communities because many agricultural communities in the United States do not have access to agricultural plastics recycling,” Miles said.

Miles said there is much to be learned about how biodegradable mulch would impact the health and quality of soil. Biodegradable mulch should leave no toxic residue in the soil and, ideally, would improve soil quality and decrease soil-borne plant diseases.

There is also potential to expand this research and supply alternatives to other types of plastic far beyond agriculture, Miles said.

“Only one percent of all plastics used are agricultural, and there are many other potential opportunities for this technology - plastic bags being just one example” Miles said.

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