

Sweet Potato Protection is More Than Skin Deep

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ARS researchers have found beneficial compounds in sweetpotatoes that may be useful in controlling fungi that cause plant diseases.

(PhysOrg.com) -- Sweet potatoes are a seasonal staple that earn U.S. producers some \$370 million every year. Now Agricultural Research Service (ARS) scientists have found traits in sweet potatoes that someday may make the vegetable as appreciated in the lab as it is in the kitchen.

All plants contain protective compounds called caffeoylquinic acids, which are known for their antioxidant activities. Caffeoylquinic [acid](#) levels vary widely between different plant species.

ARS agronomist Howard Harrison teamed up with plant pathologist Pat Wechter and plant physiologist Joseph Peterson (now retired) to measure the levels of caffeoylquinic acids in sweet potatoes. All three scientists work at the U.S. Vegetable Laboratory in Charleston, S.C. Other ARS collaborators included ARS chemists Maurice Snook and Trevor Mitchell, who work in the Toxicology and Mycotoxin Research Unit of ARS' Richard B. Russell Research Center in Athens, Ga.

The research team found measurable amounts of all four types of caffeoylquinic acids in the sweet potatoes they tested. On average, the highest levels of the compounds were found in the layer of tissue just under the skin. Intermediate levels were found in the stele-the interior of the sweet potato-and the lowest levels were found in the skin.

The scientists found that three of the compounds they tested provided some protection against *Rhizopus* soft rot, a fungus which infects sweet potatoes after harvest by invading through breaks in the skin. One of the compounds inhibited the growth of another infectious plant fungus, *Fusarium solani*.

This research was published in the [Journal of the American Society for Horticultural Science](#).

Provided by USDA Agricultural Research Service

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