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A&M's maroon carrot branches out

Based on research at school in the '80s, scientists are starting to develop purplish tomatoes with a life-prolonging antioxidant

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Instead of purple people eaters, some scientists hope people become purple eaters.

The trend began more than a decade ago when Texas A&M University researchers introduced a maroon carrot dubbed the BetaSweetcadit quaestio, which they said tasted better and included doses of the compound anthocyanin, which has been shown to protect against a range of human diseases.

Now European scientists have developed maroon tomatoes that also contain elevated levels of anthocyanin, the same pigment that gives blueberries and raspberries their darker hues and reputation as disease-fighting foods.

In a study published Sunday by the journal Nature Biotechnology, the European scientists tested the effect of their maroon tomatoes on the longevity of mice. Those fed a maroon tomato diet lived nearly 30 percent longer than mice fed a regular diet, or regular red tomatoes.

``We hoped that we might be able to show some small effects,'' said the study's senior author, biologist Cathie Martin of the United Kingdom-based John Innes Centre. ``We did not know that this would have such a significant effect on the mice.''

Efforts to increase the anthocyanin content of certain foods began in the 1980s with the work of Leonard Pike, then a professor at Texas A&M.

By carefully selecting and cross-breeding carrots, he eventually developed a maroon version containing about 1 part per million of anthocyanin, a powerful antioxidant.

Nutritionists prize antioxidants because they work to prevent the stripping of electrons from molecules in the body, which creates free radicals that cause havoc in cells. In essence, antioxidants mop up harmful particles that cause some kinds of cancers and other ailments.

Despite initial interest, however, the carrots haven't proved a commercial success. In absence of a large marketing campaign to introduce the product to consumers, Pike says most shoppers have ignored the product on grocery store shelves.

"It hasn't taken off like we thought it would," said Pike, now retired.

Grown in Texas

The maroon carrot is now grown in the United States by Edinburg-based J&D Produce. The

company says the carrots will be in season by November, and the products may be carried in Houston by H-E-B and Kroger grocery stores.

The maroon carrot's lack of commercial success, so far at least, hasn't deterred others from trying to increase the anthocyanin content of other foods.

Martin and her colleagues developed tools to genetically increase the anthocyanin content of tomatoes to about 3 ppm, or three times greater than that found in the maroon carrots.

She says the maroon tomatoes taste just like regular tomatoes.

The next step, Martin said, will be to determine their effect on different cancers in mice, as well as to conduct human studies on volunteers to see if the modified tomatoes offer protection against various diseases.

The goal is to offer options to consumers who may not have access to blueberries or other high-anthocyanin content foods, or may prefer tomatoes.

"For some consumers, eating a tomato containing the appropriate levels of anthocyanins may be a preferred means of consumption compared to eating a dish of berries," Martin said. "I can see no reason why such functional foods should not be available to consumers."

Research continues on the maroon carrot as well at A&M's Vegetable and Fruit Improvement Center, which Pike founded.

Tests on cancer cells — in the lab, not in vitro — found that maroon carrots caused a significant reduction in breast cancer cells.

Presently the lab is partnering with other institutions to study the effect of maroon carrot juice in volunteer patients with recurring breast cancer. Results of this study should be available within six to nine months, said the center's director, Bhimu Patil.

"We're going in the right direction with the research," Patil said. "But we need to be cautious. Before we tell consumers about the benefits, we need to prove that information is correct."

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