

Use of Sweet Corn Endosperm as a Sugar Substitute

Track Code: 2021-YAO-69313

Categories:

- Agriculture
- Food and Nutrition

Keywords:

- Agriculture
- Food and Nutrition
- su1 corn endosperm
- Sugar replacer

Researchers at Purdue University have extracted a natural and digestible sugar substitute from sweet corn. Sugar over-consumption is a large problem in worldwide and particularly in the U.S. Sugar substitutes such as polydextrose, allulose, sugar alcohols, oligosaccharides, and non-starch polysaccharides are non-digestible. The Purdue researchers' sugar substitute is extracted from sweet corn (sugary-1 (su1)) endosperm and is digestible without laxative effect when used in a large quantity in food. The corn sugar has a high water-binding capability, which decreases spoilage rates and increase shelf-life. It also has low viscosity at high concentration in water, which prevents it from providing a sticky texture when chewed. The characteristics of su1 corn endosperm such as natural and non-GMO are appealing to consumers. The sweetener can be processed into various forms and may be combined with other natural, high-intensity sweeteners to provide desirable sweetness profiles.

Technology Validation: The researchers are testing the incorporation of su1 endosperm in a variety of food processing steps such as heating, shearing, and pH adjustment.

Advantages

- Natural, non-GMO
- Not sticky when mixed with or dissolved in water
- Digestible
- Decreases spoilage rate of foods
- Extracted from sweet corn

Applications

- To replace (at least partially) the sugars in foods

People:

- Yao, Yuan (Project leader)

Intellectual Property:

Application Date: February 13, 2023

Type: Provisional-Patent

Country of Filing: United States

Patent Number: (None)

Issue Date: (None)

Application Date: December 10, 2021

Type: Provisional-Patent

Country of Filing: United States

Patent Number: (None)

Issue Date: (None)

Application Date: December 18, 2020

Type: Provisional-Patent

Country of Filing: United States

Patent Number: (None)

Issue Date: (None)

Contact OTC:

Purdue Office of Technology Commercialization

The Convergence Center

101 Foundry Drive, Suite 2500

West Lafayette, IN 47906

Phone: (765) 588-3475

Fax: (765) 463-3486

Email: otcip@prf.org