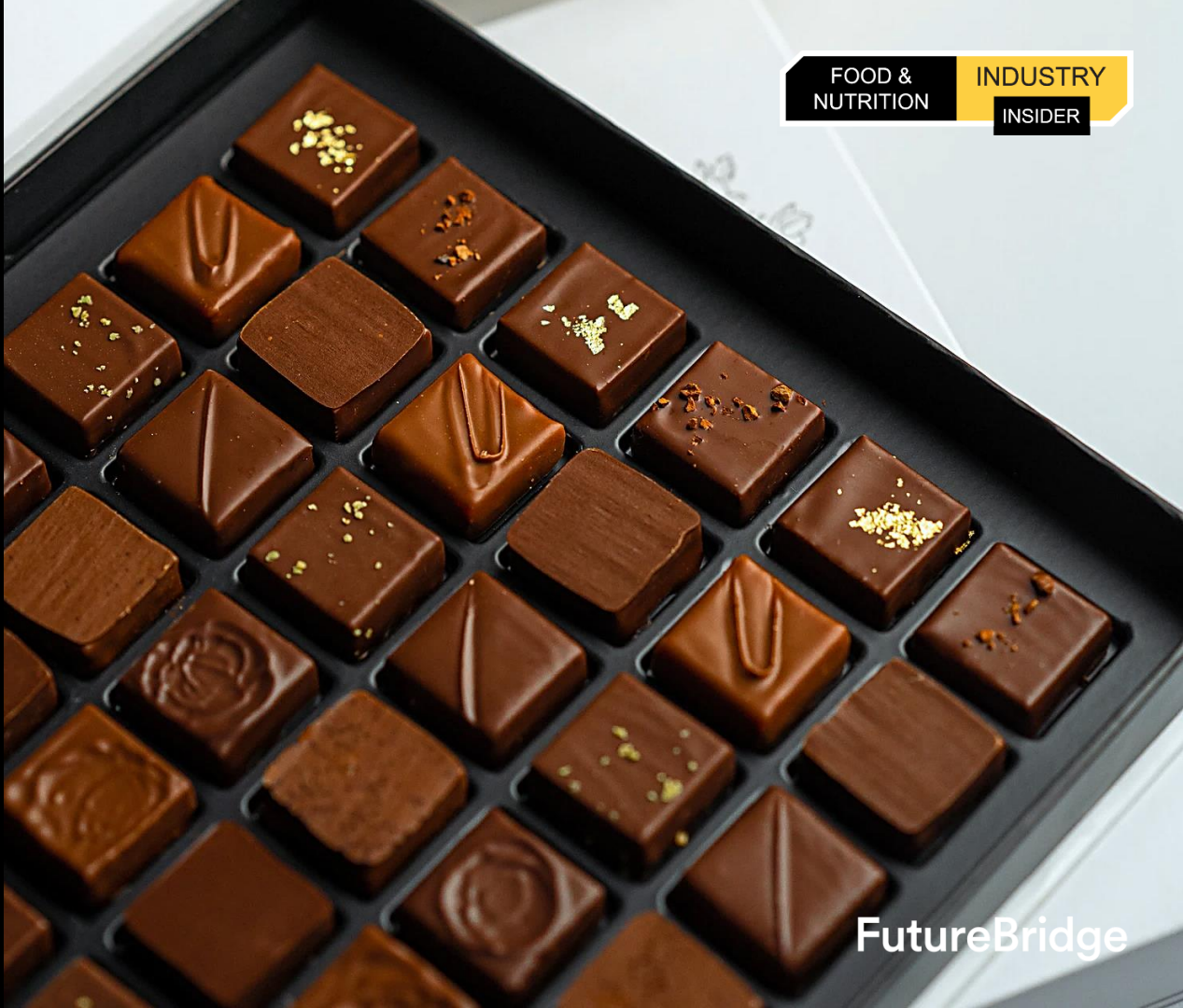




SUGAR REDUCTION

August | 2020
BULLETIN



FOOD & NUTRITION
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WHAT'S INSIDE!

The month of **August** saw multiple developments in the **Sugar Reduction** trend;

- **Sugar reduction providers** such as **Bonumose**, **SweeGen**, and **Bayn Europe** are **highly active** with **developments** such as **investment**, **partnership**, and **acquisition**. The companies are looking to **increase** their **market presence** due to the **focus** on **healthy eating** during **COVID-19 lockdown**.
- The **BRAIN** company **research** is focused on **taste modulation** by **single amino acid substitution** in **Brazzein** protein.

SPOTLIGHT

01



Sugar reduction ingredient providers are resorting to different strategic approaches such as **investment**, **partnership**, and **acquisition** to **enhance their portfolio**

02

B·R·A·I·N

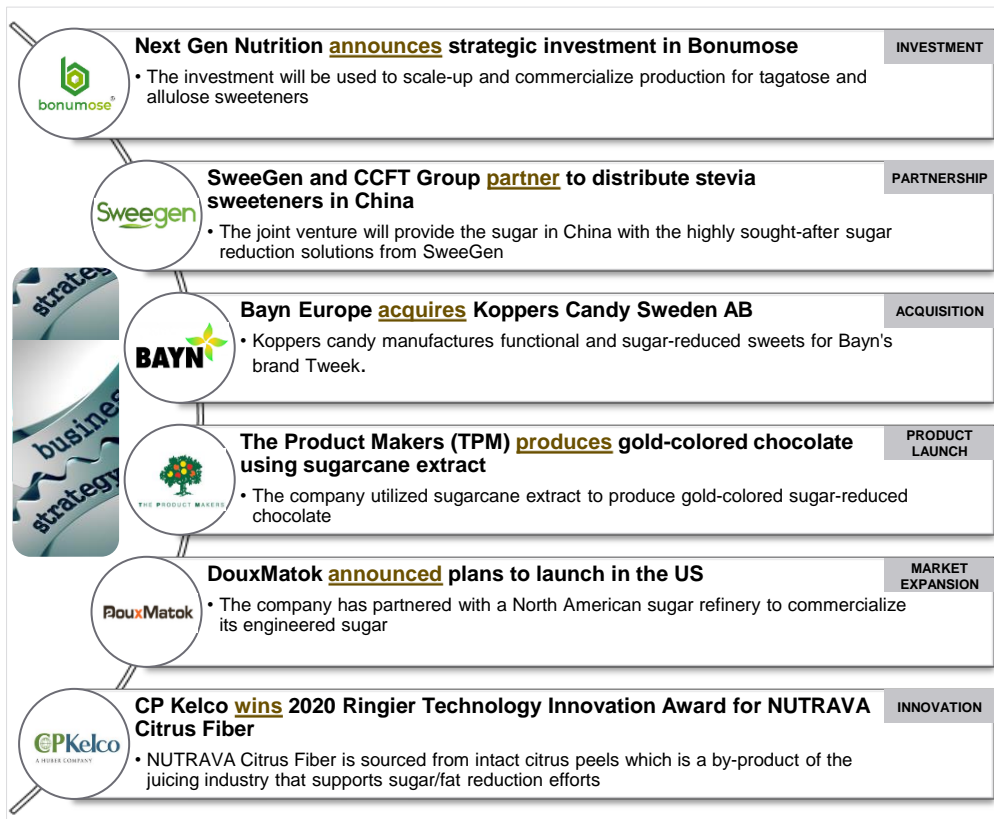
BRAIN's initiative **PepDancer Project** is working on **taste modulation** of **Brazzein** protein after a **single amino acid substitution**

SPOTLIGHT

Sugar reduction ingredient providers are resorting to different strategic approaches such as investment, partnership, and acquisition to enhance their portfolio

#SugarReduction IngredientProviders

- Sugar reduction ingredient providers are highly active in August 2020 with investment, launches, and awards due to the increased focus on healthy eating during COVID-19 lockdown.
- The partnership, acquisition, investment, and other strategies of sugar reduction ingredient providers will help the companies enhance their portfolio and expand their market presence.
- Bonumose investment will help the company commercialize its products. The company's patent describes a method to enzymatically produce tagatose from polysaccharide with phosphate recycling.
- DouxMatok's patent provides a sweetener composition that contains engineered sugars, which allow higher sweetening with lower calories output.



Patents from assignees active in August 2020

- Patent:** [US2020199637A1](#)
- Title:** Enzymatic production of d-tagatose
- Assignee:** Bonumose
- Publication date:** 25th June 2020
- Key takeaways:**
- The patent describes a method to enzymatically convert polysaccharides into D-tagatose
 - The process also recycles phosphate and does not require addition of adenosine triphosphate (ATP) as a source

- Patent:** [US20190150492A1](#)
- Title:** Sweetener compositions
- Assignee:** DouxMatok
- Publication date:** 23rd May 2019

- Key takeaways:**
- The patent describes a method to provide a composition that includes a core nano-particle along with a carbohydrate-based sweetener
 - The process allows higher sweetening and lower calorie output



#Research

- BRAIN’s PepDancer Project will help in further research on **modulating sweet** flavor on **sweet proteins** without the use of **sweetener substitution**.
- **Brazzein sweetener** producers such as **Magellan Life Sciences** and **Natur Research Ingredients** provide the sweetener in the **North American** and **European** regions.
- **Joywell Foods** is currently **developing** its **brazzein sweetener portfolio**.

25 August 2020, Tuesday

BRAIN’s initiative PepDancer Project is working on taste modulation of Brazzein protein after a single amino acid substitution

PepDancer Project

- The Biotechnology Research and Information Network’s (BRAIN) PepDancer project explores the effect of exchanging a single amino acid to the stability and the sensory profile of the sweet protein-Brazzein
- The project is in collaboration with French INRA
- The project is funded by a strategic alliance between Natural Life Excellence Network 2020 and the Federal Ministry of Education and Research (BMBF)



Project Details

Gene sequence library of around 2000 Brazzein variants



Gene sequence is expressed in *Pichia pastoris*

The proteins generated is tested for aspects such as - just as sweet or less sweet, if sweetness sets in sooner or later, whether it disappears quickly or lingers

The sensory profile of Brazzein variants can be better compared with Brazzein wild type if a single amino acid in the protein sequence is exchanged

Other brazzein sweeteners

U **Company:** Joywell Foods
Founded: 2014
Headquarters: US
Technology: The company is working on developing the brazzein protein products



C **Company:** Magellan Life Sciences
Founded: 2014
Headquarters: UK
Technology: The company utilizes biotechnology to produce brazzein protein-XSeed



C **Company:** Natur Research Ingredients
Founded: 2014
Headquarters: US
Technology: The company provides brazzein protein high intensity sweetener –Csweet



LEGEND

- Partnership
- U** Product under-development
- C** Product commercialized

Read this story

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