

# HEALTHY PLANT-BASED CARBS: MALTODEXTRINS & GLUCOSE SYRUP IN DEVELOPING HEALTHY FOODS: A REPORT



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Protein Food & Nutrition Development Association of India (PFNDAI) conducted a webinar in association with Roquette on the topic "Healthy Plant-Based Carbs: Maltodextrins and Glucose Syrup in Developing Healthy Foods".

After Dr. J. S. Pai, Executive Director, PFNDAI welcomed the audience, Ms. Dolly Soni, Executive- Marketing & Digital, PFNDAI introduced the speakers.

## Know Your Carbohydrates- Dr. B Sesikeran

Dr. Sesikeran in his talk emphasized the role of carbohydrates and their importance in our diet.

Carbohydrates have a wide range of variety so considering all carbohydrates to be the same is wrong. Here are some highlights from his presentation-

- Carbohydrates as an energy source follow the process of digestion and absorption in the small intestine. Carbohydrates that provides glucose for metabolism are referred to as glycemic carbohydrate. For example, most mono and disaccharides, some oligosaccharides, maltodextrins, and rapidly digested starch.

Carbohydrates that pass to the large intestine before being metabolized is called non-glycemic carbohydrate e.g.- remaining oligosaccharides, NSPs, and RS.

- Glycemic response to carbohydrates depends on the intrinsic properties of food and also extrinsic factors such as the composition of the meal, the overall diet, and the biological variation of the

host.

- The healthiest carbohydrate sources include unprocessed or minimally processed whole grains, vegetables, fruits, and beans. And unhealthy sources of carbohydrates include white bread, pastries, sodas, and other highly processed or refined foods.

- Carbohydrates play a major role in energy management as they readily generate energy compared to fats and proteins.

- Red blood cells, brain, eye lens, renal medulla, adipose tissues, and muscles significantly use glucose. Dr. Sesikeran concluded his presentation by emphasizing that carbohydrates are essential so considering all carbohydrates unhealthy is wrong. Hence choosing wisely is the best option.



The speakers for the webinar were, Dr. B Sesikeran, Former Director, NIN, ICMR, Hyd., Chairman - Sci. Advisory Committee, PFNDAI, Mr. Rohit Salgaonkar, Application Development Team Leader, Roquette, Mr. Damien Pierre LESOT, Head - Technical Developers, Roquette, and Ms. Charmie Patel, Head - Technical Developers, Roquette. Ms. Meenu Yadav, Manager, Technical Regulatory Affairs, Marico, Mr. Shashank Joshi, Head - GM operations, Chitale Bandhu Mithaiwale, Dr. Madhavi Marathe, Senior Manager, Healthcare Nutrition Science, Danone, and Mr. Rohan Rajeshirke, R&D Group Leader AMEA, Mondelez India were panelists.



**Protein Foods & Nutrition Development Association of India**  
 In collaboration with Roquette  
 had organized Webinar on

**"Healthy Plant- Based Carbs : Maltodextrins & Glucose Syrup in Developing Healthy Foods"**

**Dr B Sesikeran**  
(Moderator)

**Dr Jagadish Pai**

**Mr Damien Pierre LESOT**

**Ms Charmie Patel**

**Mr Rohit Salgaonkar**

Healthy Plant-Based Carbs- Maltodextrins & Dried Glucose Syrups in Developing Healthy Foods -Ms. Charmie Patel & Mr. Rohit Salgaonkar

The second presentation was given by Ms. Charmie Patel and Mr. Rohit Salgaonkar. In their talk, they enlightened the participants about the role of maltodextrin and glucose syrup in developing different products to overcome the challenges that may occur while developing a product. Here are highlights from their presentation-

- Carbohydrates are an important food group and are an indispensable part of a healthy diet. As a macronutrient, they are essential for proper body functioning and they are needed in large amounts.
- Starch can be hydrolyzed to obtain different products like dextrose, maltose, fructose, glucose, and maltodextrin. Waxy maize, wheat, potato, and pea are commonly used for deriving these products.
- Depending on the rate of hydrolysis different plant-based carbs can be obtained e. g. maltodextrin (DE less than 20), dry

glucose syrup (DE greater than 20), and glucose (DE=100).

- As the DE increases the properties like viscosity, binding power, water activity, anti-crystallization, freezing point decrease. Whereas the properties like sweetness, hygroscopicity, browning, flavour enhancement, fermentability, and osmolarity increase with the increase in DE.
- Maltodextrin and dried glucose syrup solids help in solving formulating challenges. They can be used in flavour manufacturing, beverages, dairy, spray drying, confectionery, and bakery.



• While developing a product challenges like retrogradation, high-fat content, higher oil degradation textural challenges, adhesion, high viscosity, breakage, uneven expansion and loss of volatiles may occur. So here maltodextrin comes into play by enabling the manufacturer to overcome these challenges.



Applications of Carbohydrate Ingredients in Food Industry: Global

#### Scenario with Indian Glimpse - Mr Damien Pierre LESOT

Mr. Damien Pierre explained the global scenario for the application of carbohydrate ingredients. Following are some key points from his presentation-

- There are different consumer trends when it comes to carbohydrates due to factors like a healthier diet, sugar being in the spotlight, sports going mainstream, and specific needs for each life stage.



To address the challenges of carbohydrates sugar management, energy management and staying active are three ways. For sugar management maltodextrin and

dried glucose syrup can be used to partially



reduce the sugar leading to reformulation.

- Carbohydrates are the major energy source and are important in sports nutrition. For athletes, carbs are required along with proteins for endurance efforts to prepare for recovery.

Each presentation was followed by a question and answer session where the respective speaker answered the questions raised by the audience.

After the completion of all the expert talks, a panel discussion on the various aspects of plant-based carbs and their role in developing a product was conducted. The panel discussion was moderated by Dr. Sesikeran.



After the completion of the panel discussion, Ms. Charmie Patel declared the results of the recipe and poster competition.

#### 1. Recipe contest-

The recipe contest was conducted in two rounds and under different



categories. The judges for the recipe contest were Ms. Nitika Vig, Nutrition Manager, Marico Limited and Ms. Ruby Sound, Nutritionist & Consultant Dietitian Proprietor, Eatwise Nutrition & Wellness Clinics Secretary-IDA, Mumbai Chapter. Here are the results for both rounds-

Round 1- Creativity unlimited with millet flour

1. Ms. Vidhi Tukaram Prabhu – Millety Spinach Pesto
2. Ms. Mital Chetan Shah- Millet Norimaki Sushi
3. Ms. P. R. Durga Devi- Plant-based Yoghurt using Foxtail Millet



The webinar concluded with a vote of thanks by Ms. Dolly Soni



#### Round 2- Creativity unlimited with Roquette ingredients

##### A] Functionality-

1. Ms. Pranali Rajesh Patil- Cheese Powder
2. Ms. Dolly Jain- Choco Cookies

##### B] Innovation-

1. Ms. Ishwari Milind Desai- Baked Oatmeal Cup
2. Mr. Saamir Akhtar- Vege Dosa Waffle

##### C] Nutrition-

1. Ms. Khushdeep Kaur- Multigrain vadda



#### 2. Poster contest-

The judges for the poster contest were Dr. Jagmeet Madan, Principal- Dept. of Food, Nutrition & Dietetics, SVT College of Home Sci., President, IDA and Ms. Sukhada Bhatte, Sr Manager- Regulatory & Nutrition Hexagon Nutrition Ltd. Registered Dietitian, IDA. Here are the results of the poster contest-

1. Ms. Vidhi Tukaram Prabhu- Health carbs in a balanced diet
2. Ms. Khushi Ashish Karia- Don't Fight carbs eat the right ones
3. Ms. Aamna Qaisar- Healthy Carbs In Balanced Diet



**Dr B Sesikaran  
(Moderator)**



**Dr Jagadish  
Pai**



**Ms Meenu  
Yadav**



**Mr Shashank  
Joshi**



**Dr Madhavi  
Marathe**



**Mr Rohan  
Rajeshirke**



**Ms Dolly Soni  
(Webinar Convenor)**

## **Panel Discussion**