

REPORT OF PFNDAI Webinar ON EXPLORING BENEFITS OF DAIRY MATRIX, WITH SPECIAL EMPHASIS ON MILK PROTEIN UTILIZATION, TO MAKE HEALTHIER FOOD PRODUCTS

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Protein Foods and Nutrition Development Association of India (PFNDAI) organized a webinar on "Exploring Benefits of Dairy Matrix, with Special Emphasis on Milk Protein Utilization, to make Healthier Food products" sponsored by Hexagon Nutrition and Agropur on May 7, 2021.

Dr J S Pai, Executive Director, PFNDAI welcomed all speakers, chairpersons and panellists and thanked the delegates for attending the session in such large numbers. He also thanked Hexagon Nutrition and Agropur for providing the necessary support for the webinar.

Ms. Swechha Soni, Manager Food & Nutrition, PFNDAI welcomed the participants and introduced the speakers: Mr. Gokulkrishnan S S , Senior Manager - QA and R & D , Amul Dairy, Mr. Rohit Mittal,

Category Manufacturing Services Manager at Nestle India Ltd and Ms. Joanie Zhang, Technical Support Scientist at Agropur US Operation and panel members Mr. Manish Singh, Chief Operating Officer for Fonterra Future Dairy, Dr Madhavi Marathe, Senior Manager, Healthcare Nutrition Science at Danone, Dr Nandan Joshi, Head- Medical Affairs Nutrition, India & Emerging Markets at Dr Reddy's Laboratories and Ms. Mani Misra Scientific Regulatory affairs and Nutrition, Corporate Nutritionist Mother Dairy.

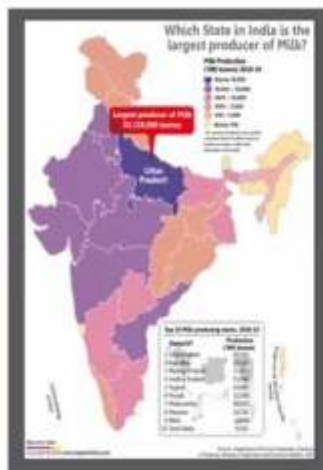
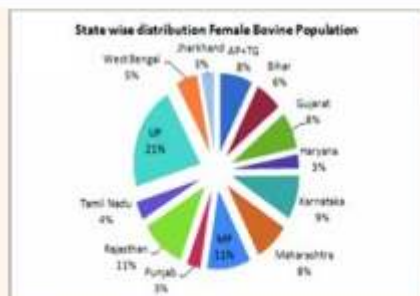
The first speaker of the afternoon was [Mr. Gokulkrishnan S. S.](#) He presented the topic "[Strategies for Sustainable Dairy Industry in India](#)" in which he presented a study on how many of the advanced

countries like Europe etc. are lagging behind Dairy Business and many of the farmers are closing their farms as they are not able to sustain the dues. He mentioned the Indian context where Uttar Pradesh is the largest milk producing state and mentioned about the federal production and distribution of milk.

Mr. Gokul also mentioned the short scenario of India Milk Demand and a study of per capita national income across India in the financial years 2015 and 2017, with estimates for 2021. Further, he talked about the Covid Impact about the dairy industry and how it is growing and helping the poor farmers in this pandemic.

He ended his presentation with a briefing on various aspects and strategy of Dairy Industry, which included points like Milk Producer, pricing of milk, availability of land and labour, availability of feed, availability of veterinary services, availability of government policies, availability of advanced technologies, wealth from waste, and affinity to business.

Indian Context...



Mr Gokulkrishnan

Mr. Rohit Mittal presented on *Application of Milk Proteins in Food Product /Nutritional Supplement Powders*. He informed the audience about protein, its limits, quantity and quality and mentioned that proteins are the key components of human body which are essential for cell and tissue growth and mentioned the 20 amino acids as building blocks, essential and non-essential and in terms of protein, the maximum limit for protein in adults should be 0.80 to 0.83 g per kg body weight and the elements that need to be considered are protein sources, protein quality and protein quantity.

He explained that protein quality has been defined by nutritionists as the ability of a dietary protein to meet the requirement for regular metabolism and maintenance or growth of body tissues. He further explained the milk tree and the process of milk to various end products. He also informed about the term Milk Cracking, which describes the process of conversion or fragmentation of milk into different factors and explained a flow chart depicting the 14 different types of components of skimmed milk. He also explained the membrane process used for fractionation of milk. Further, he informed about Whey Demineralization and Manufacturing Process and discussed how casein and Whey

Proteins bring different functionalities in Food Products and ended his presentation with a

briefing on applications of Milk Derivatives in different products.

Casein and Whey Proteins bring Different Functionality to Food Products

	Casein	Whey Proteins
Solubility	Insoluble at pH 4.6	Soluble at any pH if not denatured
Viscosity	High at neutral or alkaline pH	Viscous solution except when denatured
Hydration	High water retention at high concentration	Water retention increases with denaturation
Gelation	No heat gelation except in presence of Ca.	Heat gelation at T>70 deg C affected by pH & salts
Emulsifying power	Excellent particularly at neutral; and alkaline pH	Good except at pH 4-5 if denatured
Foaming Power	Good but low stability of foam	Good and good foam stability



Mr Rohit Mittal

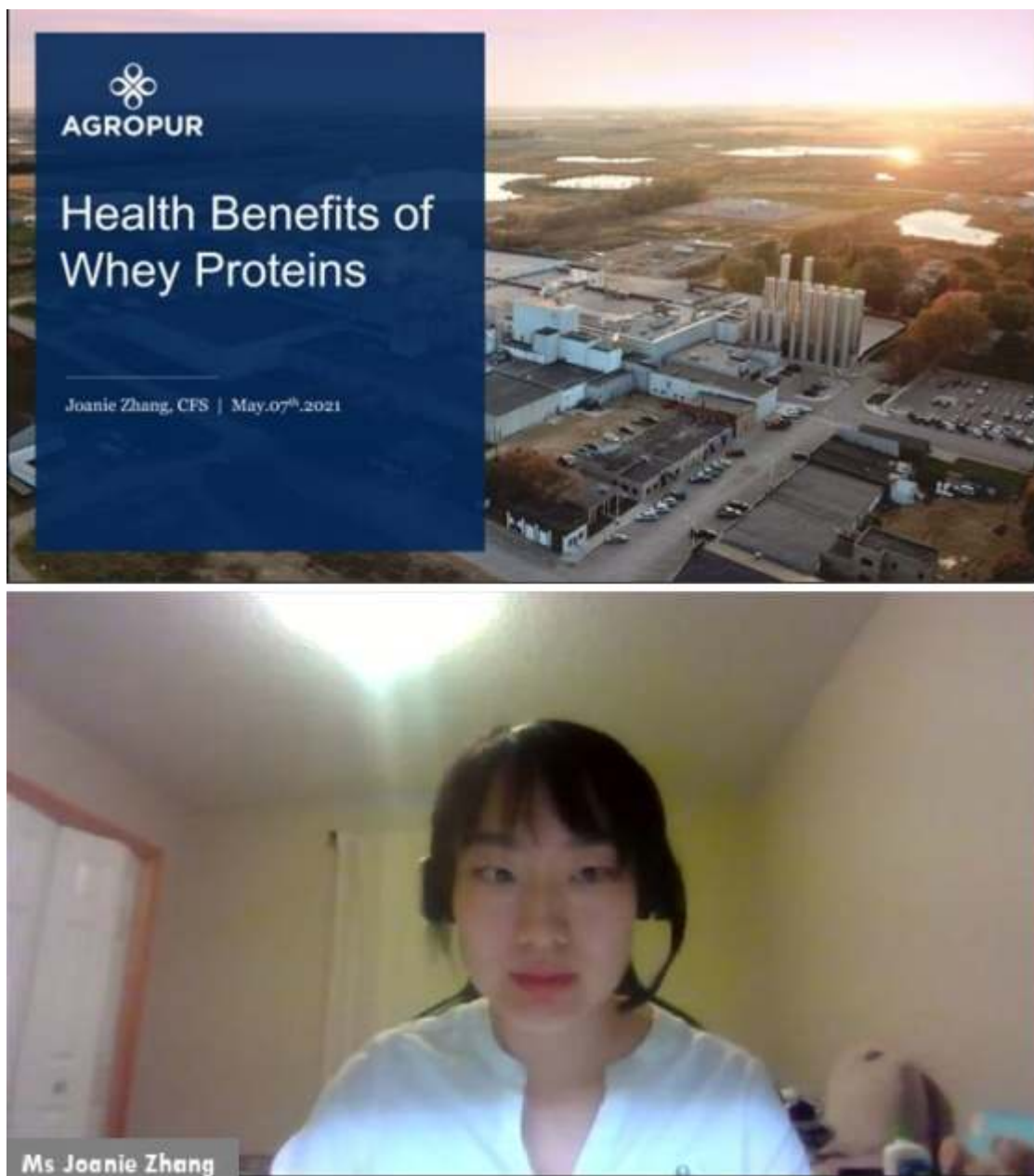
The last speaker of the session was [Ms. Joanie Zhang](#) who gave a presentation on [Health Benefits from Whey Proteins](#) where she gave an overview of what whey protein is and the types of whey protein ingredients and gave detailed information on the protein content of whey protein ingredients developed by Agropur - WPI (Whey Protein Isolate) protein content 90% dry base, WPC (Whey Protein Concentrate) protein content 35-85% & WPH (Whey Protein Hydrolysate) enzyme hydrolyzed proteins. Ms. Zhang went on to talk about why whey protein is of high nutritional value, mentioning that it contains a high source of protein, is rich in branched chain amino acids, is digested and absorbed quickly, and is high in cysteine, which can improve oxidation. She further gave an overview of the amino acid profile in whey proteins and informed the audience about the nutritional value of whey proteins and talked about various interesting aspects including - high quality protein, mainstream nutrition, sports nutrition, healthy ageing, improving immunity. She also highlighted how whey protein can help in dietary management of type 2 diabetes and how it can also be used as a complete diet for the COVID -19 patients. She ended her presentation by addressing the high nutritional value of Whey Protein, products that can be developed using whey protein, and how important Whey Protein is for all stages of life.

Following the presentations by the speakers, a panel discussion was held which was chaired by Dr J S Pai and Ms Swetchha Soni. The panellists for the session were Mr. Manish Singh, Dr Madhavi Marathe, Dr Nandan Joshi and Ms. Mani Misra. The moderator asked some questions on various aspects such as the importance and role of milk protein in Indian diet, why are milk protein concentrates or isolates used in high protein powders for athletes, the difference between whey and casein - both in terms of nutritional value and properties, consumption of whey protein in

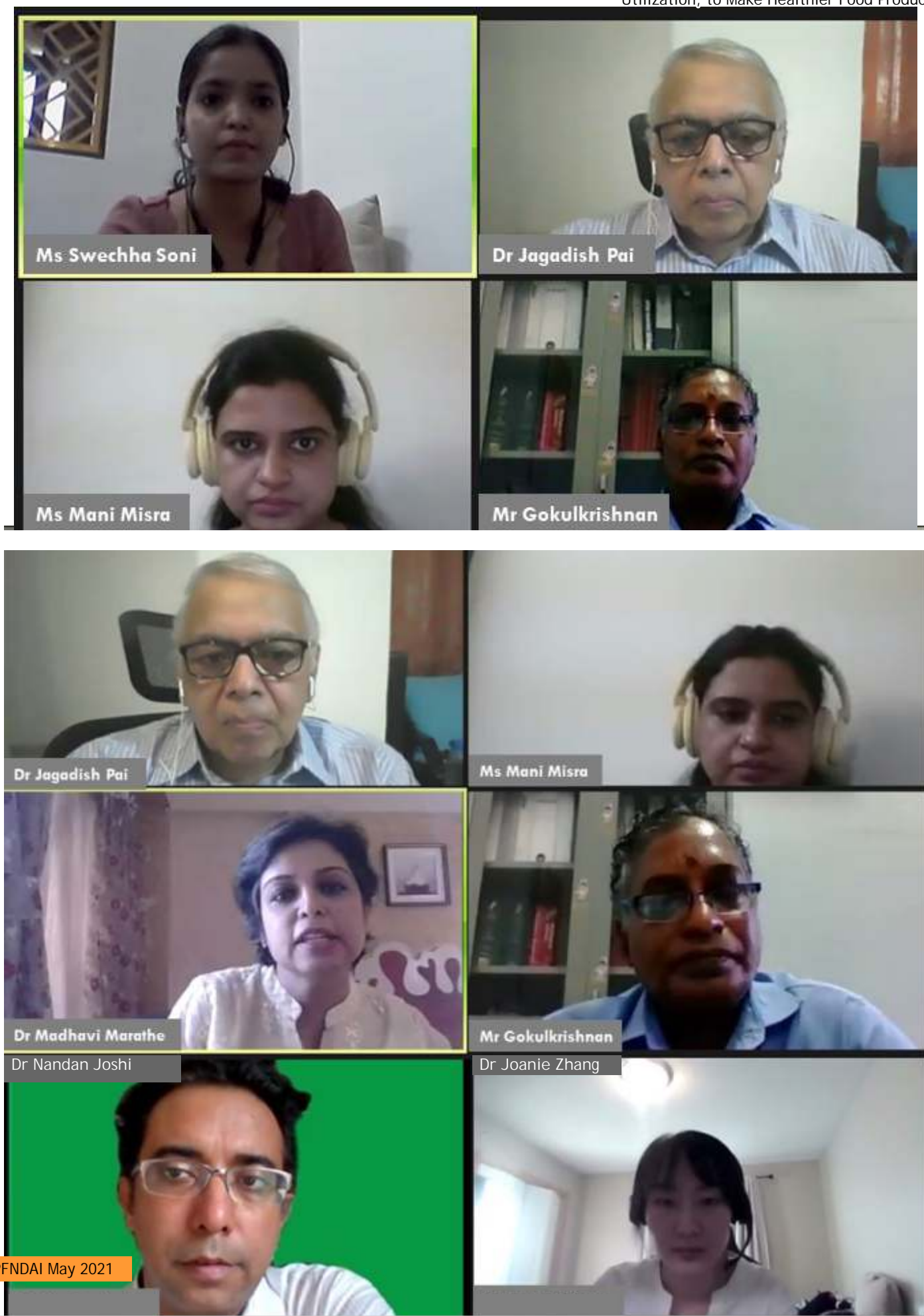
lactose intolerance and the difference between whey protein concentrate, whey protein isolate and hydrolysed whey protein.

The panel discussion was followed by a short question and answer session where some of the questions asked by the audience were answered.

The webinar ended with a thank you speech by Ms Megha Mandke from Hexagon Nutrition to all Honourable Speakers, sponsors and the delegates.










**Protein Foods & Nutrition Development Association of India
Presents a Virtual Seminar on**

“EXPLORING BENEFITS OF DAIRY MATRIX”

MODERATORS




Dr Jagadish Pai
Executive Director
PFNDAI




Ms Swechha Soni
Manager- Food & Nutrition
PFNDAI

SUPPORTED BY




AGROPUR




HEXAGON NUTRITION

PANELISTS




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Sr. Mgr.-QA and R&D
Amul Dairy




Mr Rohit Mittal
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Ms Joanie Zhang
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Dr Madhavi Marathe
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Mr Manish Singh
Chief Operating Officer
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