



TAL 797 – Seminário

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CHALLENGES OF FOOD INDUSTRY IN CARBOHYDRATES REDUCTION

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Currently, there is a growing concern about the foods that are inserted into the diet. Carbohydrate is one of the main nutrients present in the food of the world population. However, refined carbohydrates and sugars are commonly associated with type 2 diabetes, metabolic syndrome, and vascular and renal changes. Owing to this, the food industry needs to search for alternatives to reduce the use of carbohydrates in food. However, it is necessary to carefully evaluate since carbohydrates play important roles in the physicochemical and sensory quality of foods, for example, sucrose, in addition to providing sweetness, performs other functions, such as retaining moisture, crystallization, decreasing water activity, and plays an important role in the color and aroma of the product. As an alternative, some substitutes can be used, such as polyols, which similar to sucrose has several hydroxyl groups that make them hygroscopic, however, most polyols have negative impacts, especially on baked goods, such as reduced volume, increased hardness, and color change. Another limiting factor is the laxative effect when consumed in large quantities. Non-nutritive sweetener substitutes, NNS are also named sweeteners and may be natural or synthetic in origin. They have a certain disadvantage of having an aftertaste of saccharin, aspartame, sucralose, and stevia. Owing to the small amount of NNS used in food, it is necessary to use bulking agents for reformulations. Another important carbohydrate is starch. It performs the functions of adhesion and binder, coating element, foam booster, gelling agent, moisture retention, stabilizing, texturizing and thickening agent. Substitutes to perform starch properties without affecting product quality is a challenge, work has been carried out, using fibrillates cellulose and chestnut flours. Therefore, through the various changes in quality and physical-chemical properties that occur in foods, it

is important to study to obtain the improvement of these products.

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