Maize – The Most Effective Material For Modified Starch Production

Maize is the most versatile crop as it is loaded with rich nutrients and widely consumed worldwide, both in raw and processed forms. Until the industrial modification of crops into starch, it was primarily used in papyrus bonding, paper production, and cosmetic creams. Today, maize is the primary source of starch, contributing to over 85% of the starch produced worldwide. The demand for starch from maize has increased multifold due to the rising population and disposable income of consumers.

[Maize starch](#) is applied in various industries such as food & beverages, pharma, textiles, and paper & board, to name a few. Besides being used as a sweetener, maize starch enhances the quality and usability of the end-product by acting as a binding agent, thickening agent, stabilizer, adhesive, and providing stiffness and smooth texture.

Maize has the highest starch content among the whole grain, making it one of the starchiest staple foods. Maize starch is produced by extracting a fine powder from the starchy centre of maize kernels known as the endosperm. The process of "maize wet-milling" enables utilizing each part of the grain to produce quality products. Further processing of maize starch

generates different kinds of modified starch products, such as Maltodextrin, Dextrose, Glucose Syrups, Polyols, etc., used in different industrial applications.

In the starch-making process, many by-products are released in the form of maize bran, gluten, maize germ and steep liquor. These are nutrient-rich substances and contain carbs, proteins, oils and minerals. Previously discarded as "waste," these by-products are now utilized in other industries, such as poultry, animal feed, and edible oil production. (For instance, maize gluten is extremely rich in proteins and is used as animal fodder. Maize germ is used as a raw material in producing edible oil.)

The annual maize production in India is around 21 million metric tonnes. Most of the maize produced in India is consumed in its unprocessed form.

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