

# Applications of *Tamarindus indica* Seed Powder, An Aging Free Starch in Food Industry

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**Abstract**—*Tamarindus indica* seed powder (TS) has many such properties that make it a material of commercial importance. *Tamarindus indica* belongs to the family fabaceae and many parts of plant have medicinal value. India produces about 0.3 million tons of tamarind yearly, of which the seed constitutes about 30–34% of the whole fruit. The tamarind seed is non endospermic, and the polysaccharide is present in the thickened walls of the cotyledonary cells. TS is obtained from de-husked, broken, cleaned and ground seeds. TS comes into the category of natural gums and is biocompatible, biodegradable, and nontoxic polymer. TS has physical and engineering properties such as high hydration, good rheological properties, and good functional and nutritional characteristics that make it an important additive in food industry. The major component of TS is xyloglucan, known as ‘tamarind gum’, it forms a hard gel and is used for thickening, stabilising and gelling in food. TS is mainly made up of the neutral polysaccharide consisting of D-galactose, D-xylose and D-glucose (1:3:4) and a little free L- arabinose. In the food industry, TS can replace starch because aqueous solution of TS is slightly sticky and its viscosity is very similar to that of starch. Due to its rich content of carbohydrates and protein, it is majorly used in the food processing industry and applied largely in ketchup, ice creams, sauces, sherbet, baked food, pet food, meat product and instant noodles. TS is also used as a dehydrating agent in making powdered products, and as emulsifying agent for essential oils, in cakes and chewing gums. Roasted TS can be used to prepare jelly and fortified bread and biscuit.

**Keywords:** *Tamarindus indica* seed powder; food additive; emulsifying agent; aging free starch; thickner; polysaccharide.