

# Application n° 12

## Screening of Tapioca Starch

INNOVATION. NOT IMITATION.



**Tapioca** is a starch extracted from the root of the plant species *Manihot esculenta*. It is now cultivated worldwide and has many names, including cassava, bitter-cassava, manioc, "mandioca", "aipim", "macaxeira", "manioca", "boba", "yuca" (not to be confused with yucca), "Sagudana" (literally, Sagu drops)--with local variation of "Sabudana"--and "kappa". In Vietnam, it is called bột năng. While in Indonesia, it is called ubi kayu or singkong.

**Tapioca** is a staple food in some regions and is used worldwide as a thickening agent, mainly in foods. **Tapioca** is gluten free, and almost completely protein free. 'Tapioca' in Britain often refers to a milk pudding thickened with arrowroot while in Asia the sap of the Sago palm is often part of its preparation.



The Cassava / **Tapioca** plant has either red or green branches with blue spindles on them. The toxin found in the root of the red-branched variant is less harmful to humans than the green-branched variety. Therefore, while the root of the red/purple-branched variant can be consumed directly, the root of the green-branched variant requires treatment to remove the toxin. Konzo (also called mantakassa) is a paralytic disease associated with several weeks of almost exclusive consumption of insufficiently processed bitter cassava.

Commercially, the starch is processed into several forms: powder, fine or coarse flakes or meal, rectangular sticks, and spherical "pearls". Pearls are the most widely available shape; sizes range from about 1 mm to 8 mm in diameter, with 2–3 mm being the most common.

Flakes, sticks, and pearls must be soaked well before cooking, to rehydrate them; they will easily absorb water equal to twice their volume, becoming leathery and swollen. All these products traditionally are white, but sticks and pearls may be coloured. The oldest and most common colour is brown, but pastel colours are now available. In all its forms tapioca starch is opaque before cooking; and become translucent when cooked.



Nigeria, Brazil, and Thailand are the world's largest producers of **Tapioca**. Thailand accounts for 60% of worldwide exports.

A large number of Tumbler Screening machines have been supplied to the **Tapioca** starch industry. In most cases the starches are dried down to about 12 % moisture and are screened at 120 micron (120 mesh) to 250 micron (60 mesh). Usually, a very small amount of oversize particles has to be removed.

The state of the art cleaning system is GKM's ultrasonic cleaning system "ULTRA-VARIO-SONIC". This cleaning system in combination with the ball cleaning achieves the highest throughput. The following capacities can be reached:

Mesh Size	KTS 1200	KTS 2000	KTS 2400	KTS 2600
80 mesh	110 t/day	230 t/day	400 t/day	500 t/day
100 mesh	35 t/day	80 t/day	140 t/day	170 t/day

**Any questions? Please ask us:**

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