

What is Konnyaku?



Konjac glucomannan (KGM), also known as konjac, conjac, or konnyaku (BeMiller, 2019), is extracted from the tubers of *Amorphophallus konjac* K. Koch, which is also known as the elephant foot yam. The tubers are harvested after 2-3 years when the glucomannan content has reached up to 30-50% (Pegg, 2012).

Konjac flour is used to make Konnyaku, a traditional Japanese jelly which has a light taste and elastic texture (Sharma et al., 2016). The component that gives konjac jelly their viscous attributes is called glucomannan gum (Williams, 2012).

KGM chain has short side branches and acetyl groups that are randomly present (approx. every 9-19 residues) (Pegg, 2012). Deacetylation occurs with alkali treatment, creating a chewy, irreversible gel

(Nussinovitch & Hirashima, 2014). Additionally, thermal reversible gels can be formed when it interacts with other polysaccharides such as xanthan, carrageenan and agar. The addition of sugar enhances the strength of the synergistic gel, while salt inhibits the formation of the synergistic gel. These properties can be manipulated to control the gel-forming capacity in food (Cui et al., 2013).

Konjac has been used as food and food additives in China and Japan for more than 1000 years and it has been introduced in many Asian and European countries over the few decades (Behera & Ray, 2016). As food, this natural ingredient has been applied in Shirataki noodles, a traditional Japanese food. The noodles are made by heating glucomannan solution with limewater to form a thermally stable gel, which is then cut into thin strips and used as a meal component (Pegg, 2012). The noodles made from konjac fibre are thin, translucent and gelatinous (Kemp & Daly, 2016). Besides the noodles, konjac gum is used in conjunction with carrageenan in dessert jellies and aspics to give the desired firm but elastic texture (Pegg, 2012).

As a food additive, KGM acts as an emulsifier, thickener, meat binder and also gelation enhancer in numerous food-related applications. Some examples of gelation enhancement includes low quality surimi (Iglesias-Otero et al., 2010; Liu et al., 2013a), egg white gel (Liu et al., 2013b), as fat replacement in meat products (Ruiz-Capillas et al., 2012; Jiménez-Colmenero et al., 2013) and mayonnaise (Li et al., 2014). As these KGM-based products contain very few calories, they are regarded as weight-control foods (Marcano et al., 2015).

Sourcing for Konjac gum? Get connected with DPO International at dpo.ind.idn@dpointernational.com or info@dpointernational.com and our knowledgeable sales representatives will contact you.

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