

Galactomannans

Raw Material

The cultivation of the plants is usually by an ecological dry-field system, which helps preserve the often meagre water resources.

UNIPEKTIN buys the raw material direct from local producers and processors. The imported raw material is examined by certified quality control parameter and classified for the further processing.

Tara Gum
(Peru, Bolivia)

Locust Bean Gum
(Mediterranean area)

Guar Gum
(India, Pakistan)



Properties of Galactomannans

	Native Guar Gum (standard quality, not modified) <i>* Does only partly apply to special products like e.g. VIDOCREM</i>	Native Tara Gum (standard quality, not modified) <i>* Does only partly apply to special products like e.g. VIDO GUM SP-SYN</i>	Native Locust Bean Gum, (standard quality, not modified)
Commercial Aspects			
Dosage to achieve comparable hot viscosity.	100%	100%	110%
Price	low	intermediate	High
Fluctuation in price	Limited	medium	Strong

	Native Guar Gum	Native Tara Gum	Native Locust Bean Gum
Solubility			
Cold solubility	Approx. 80% of the hot viscosity is achieved at 25°C and 1h stirring time	Approx. 70% of the hot viscosity is achieved at 25°C and 1h stirring time.	Approx. 5% of the hot viscosity is achieved at 25°C and 1 h stirring time
Solubility up to	35 ° Brix (35 % sugar)	55° Brix (55% sugar)	55° Brix (55% sugar)
Suitability for instant products (e.g. powder for instant drinks)	Yes	Limited suitable.	No
Freeze – thaw stability	Yes	Yes	No
Viscosity increase in combination with other hydrocolloids.			
Modified Starch	Yes	Yes	Yes
Xanthan Gum	Very strong viscosity increase.	Viscosity increase and gel formation.	Viscosity increase and gel formation.
Viscosity reduction when heated.	25°C = 100% 75°C = 65%	25°C = 100% 75°C = 34%	25°C = 100% 75°C = 29%

	Native Guar Gum	Native Tara Gum	Native Locust Bean Gum
Sensory Aspects			
Off-flavour	Relatively strong, but premium qualities without any off-flavour are available.	no off-flavour	no off-flavour
Flavour release	The flavour is masked notably by Guar Gum.	Good flavour release.	Good flavour release.
Mouthfeel	Not creamy. At higher dosages (> 0.4%) quite slimy. Not suitable as fat replacer (exception = VIDOCREM).	Mouth-feel is between Guar Gum and LBG, but definitely closer to LBG. Provides a pleasant mouthfeel in many applications. Suitable as a fat replacer.	Creamy and pleasant mouth-feel. Suitable as a fat replacer.
Flow Behaviour	Solutions of Guar Gum have a slimy and longish texture but do not flow without interruption (e.g. from a spoon) = Yield Point. Quite pseudoplastic behaviour which is recognized as negative in many applications. Exception: Especially in dressings and seasoning sauces this property is often required and therefore widely used.	Solutions with Tara Gum are flowing continuously (without interruption), low Yield Point. Intermediate pseudoplastic behaviour which provides a nice flow behaviour.	Solutions with LBG are flowing continuously and smoothly (e.g. from a spoon), very low Yield Point (the force necessary to make a substance flow).

	Native Guar Gum	Native Tara Gum	Native Locust Bean Gum
Gel strength increase with			
k-Carrageenan	No increase	Some increase – especially interesting if a certain gel strength is required but the product still has to be creamy (e.g. processed cheese, curd cheese whipped, custard).	Strong increase – especially if quite a strong gel is required – e.g. ‘jellies’.
Xanthan Gum	No increase	Builds a smooth gel which can be useful in sauces and mayonnaise which should not be too gelatinous.	Builds a quite strong gel. Useful in mayonnaise with a gelatinous texture.
Agar-Agar	No increase	Low to medium interaction. Though the effect is not extremely high, the dosage of Agar-Agar can be reduced.	Medium interaction. Recommended if the gel strength should be the most important property of the product.
Acid stability, heat stability, homogenisation stability	Properties are very similar for all three Galactomannans.		
Syneresis prevention	Properties are very similar for all three Galactomannans.		
Turbidity of the solution.	Properties are very similar for all three Galactomannans.		
Colour of the solution	Beige-brown. White solutions with VIDO GUM GH.	More neutral than VIDO GUM G 200 I (native guar gum).	More neutral than VIDO GUM G 200 I (native guar gum).
Freeze-thaw stability	Yes	Yes	No