Locust Bean Gum Alternatives:

LBG + Guar Gum systems

LBG + Tara Gum systems

Why to consider looking into alternatives to LBG?

Locust Bean Gum is the hydrocolloid of choice for a broad range of food products offering excellent texture and stability as well as strong synergies with other ingredients, plus a ‘natural’ consumer image.

The price of Locust Bean Gum, though not so much its availability, has fluctuated pretty strongly a few times in the past. Currently the price is on a historically high level paired with a reduced short- term availability due to the continuing and strongly increasing demand and the production capacity lagging behind.

As the LBG market cannot be expected to begin ‘normalizing’ in the near future, and Tara gum no longer being a valid 100% replacement due to significant price increases and reduced availability, it is now a good time for LBG users to consider what other options they have, and to familiarize themselves with these.

Alternative systems based on LBG and Guar Gum or Tara Gum, and optimized for dairy products, offer similar performance and characteristics at lower cost than pure LBG, and good availability.

Properties of Galactomannans

	Native Guar Gum (standard quality, not modified) * *Does only partly apply to special products like e.g. VIDOCREM*	Native Tara Gum (standard quality, not modified) * *Does only partly apply to special products like e.g. VIDOGUM SP-SYN*	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**	**Critical**

	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 and1h 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 us 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 VIDOGUM GH.	More neutral than VIDOGUM G 200 I (native guar gum).	More neutral than VIDOGUM G 200 I (native guar gum).
Freeze-thaw stability	Yes	Yes	No

Alternatives for VIDOGUM L (Locust Bean Gum)

- **VIDOGUM L + VIDOGUM GH (neutral flavour Guar Gum)**
  - VIDOGUM LS 35
- **VIDOGUM L + VIDOCREM (technologically optimized Guar Gum)**
  - VIDOGUM LS 35/E

- **VIDOGUM L + VIDOGUM SP (native Tara Gum)**
  - VIDOGUM LB 60
  - VIDOGUM LB 40
- **VIDOGUM L + VIDOGUM SP-SYN (technologically optimized Tara Gum)**
  - VIDOGUM LB 60/E

VIDOGUM LS 35

VIDOGUM LS 35 is a blend of Locust Bean Gum with a 'neutral flavour' and high viscosity grade Guar Gum.

The combination of Locust Bean Gum with Guar Gum is a combination offering similar characteristics like pure Locust Bean Gum. However, the synergistic effect with other hydrocolloids is lower in comparison to pure Locust Bean Gum.

VIDOGUM LS 35 can replace pure Locust Bean Gum with a similar dosage in various applications.

VIDOGUM LS 35/E

VIDOGUM LS 35/E is a blend of Locust Bean Gum with a special 'neutral flavour and technologically optimized' Guar Gum.

The combination of Locust Bean Gum with a special Guar Gum is an ideal combination offering similar characteristics like pure Locust Bean Gum. However, the synergistic effect with other hydrocolloids is lower in comparison to pure Locust Bean Gum.

VIDOGUM LS 35/E can replace pure Locust Bean Gum with a similar dosage in various applications.

VIDOGUM LB 60, VIDOGUM LB 40

VIDOGUM LB 60 and LB 40 are customized and well-defined blends of native Tara Gum and Locust Bean Gum.

Combining the high viscosity of Tara Gum with the strong synergistic effect of Locust Bean Gum creates effective stabilizer systems for applications where the interaction with k-Carrageenan is required.

In addition, it creates an excellent texture profile.

VIDOGUM LB 60 can replace a pure Locust Bean Gum with an up to 20% lower dosage in various applications.

VIDOGUM LB 40 can replace a pure Locust Bean Gum at comparable dosage.

VIDOGUM LB 60/E

VIDOGUM LB 60/E is a customized and well-defined blend of technologically optimized Tara Gum and Locust Bean Gum.

Viscosity comparable with VIDOGUM L 150 (3,000 mPa.s).

Combining a special Tara Gum with the strong synergistic effect of Locust Bean Gum creates an effective stabilizer for various applications, with an excellent texture profile.

VIDOGUM LB 60/E would replace pure LBG at a dosage of 90 – 110%, depending on the application.