



Locust Bean Gum - *idealcarob*



LBG: ORIGIN

LBG is from the Carob tree (*Ceratonia Siliqua*) native in the Mediterranean basin.

The Ancient Egyptians used Carob Gum to bind the strips used for wrapping mummies.

The carob seed gave its name to the modern “CARAT” since it was used by the Arabs as a standard weight unit for precious metals.



LBG: PRODUCTION

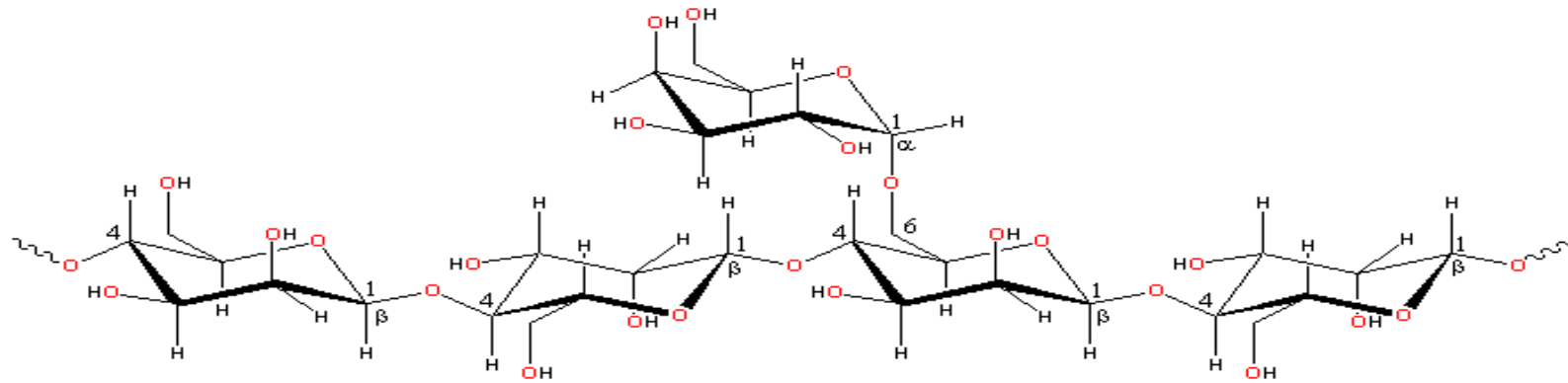
Carob seeds are extracted by breaking up (kibbling) the Carob pods.

From the beans, flours are obtained by milling splits, which are separated from the germ and husk by a thermo-mechanical or acid process.



LBG: STRUCTURE AND PROPERTIES

- Locust Bean Gum is a white to yellow-white powder. It consists of high molecular weight polysaccharide, composed of galactose and mannose units combined through glycosidic linkages, which may be described chemically as galactomannan.
- Stable over a wide pH range.
- Soluble in hot water over 80°C.
- Texture: viscous with low yield-point (long flowing), smooth mouthfeel.
- Maximum viscosity: about 3,000 cps



LBG: KEY INFLUENCING PARAMETERS

- **Temperature:** to achieve complete dissolution and functionality of LBG, it is important to reach 80°C during the process.
- **pH value:** not affecting the dissolution of the product.
- **Presence of other hydrocolloids:** It is important to know if other gums like Xanthan Gum or Carrageenan are present in the system. LBG has strong synergistic effects with them.
- **Dispersion:** To avoid lumps formation it is important to pre-blend LBG with other powder ingredients (sugar/salt) and disperse this dry-mix under stirring in the liquid phase.

LBG: SYNERGIES WITH OTHER HYDROCOLLOIDS

➤ LBG + Xanthan gum

Low %-age (0.1-0.5%) of Xanthan added to LBG increases the viscosity up to 4,000 cps.

A mix of 50% LBG and 50% Xanthan gum forms a gel, like pectin or carrageenan.

➤ LBG + k-Carrageenan

A small amount of LBG (2-5%) added to k-Carrageenan increases the gel strength and reduces the syneresis of the gel (gel becomes more elastic-brittle).

LBG: MAIN APPLICATIONS

- Ice cream and ice lollies
- Sauces
- Fruit preparations
- Processed meat
- Spreadable/Cream cheese
- Baked goods
- Water jellies
- Pet food



ICE CREAM

- LBG is used at 0,1- 0,25% in ice cream, alone or in combination with other gums (e.g. guar gum, sodium alginate, carrageenan).
- LBG forms a three-dimensional network in the system which prevents formation of large ice crystals.
- LBG improves the creaminess and melting behaviour.
- As LBG is not affected by the pH-value it can be used also in fruit ice cream and sorbet (low pH).
- LBG has a cleaner mouth feel and less sticky texture compared with guar gum.



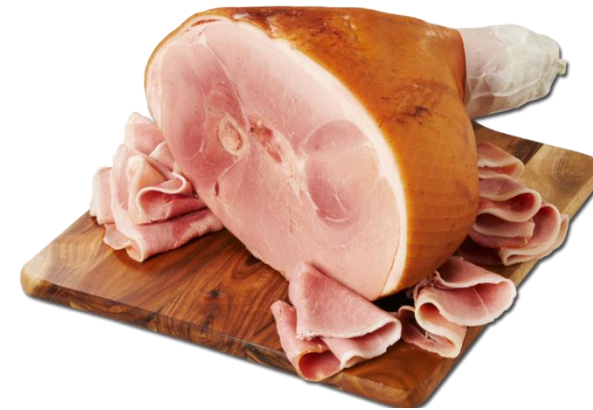
SAUCES

- LBG is used in stabiliser blends for mayonnaise, in combination with Guar gum and Xanthan gum.
- The synergistic effect with Xanthan gum helps the mayonnaise to maintain the jellified structure.
- LBG is also used in soups with light texture.



PROCESSED MEAT

- LBG is used in processed meat (cooked ham, meat or fish pate) in combination with Carrageenan.
- The synergistic effect with Carrageenan helps to bind more water and avoids syneresis.
- In cooked ham this property increases the yield.



SPREADABLE CHEESE

- LBG is used in spreadable cheese to improve the creaminess and to avoid syneresis.
- LBG for this application is combined with Carrageenan which forms the gel, and also often with starch.
- For this application is important to use a high-grade LBG like **idealcroob A-01**, otherwise black specks could be visible in the white cheese.



BAKED GOODS

- LBG is used in bakery products such as bread and croissants as a dough conditioner.
- LBG improves the stability of the dough texture, increases the stability after baking and prevents the formation of ice crystals in frozen products.
- LBG in bread helps to maintain the softness over shelf-life (by binding water).



WATER JELLIES

- LBG is used in combination with Carrageenan in water jellies and tart glazings.
- A small amount of LBG is forming a soft gel without syneresis.

PET FOOD

- LBG is used in combination with Carrageenan and other gums in canned pet food.
- A small amount of LBG increases the gel strength of the product.



idealcarob LOCUST BEAN GUM

MAIN PRODUCTS:

- ***idealcarob A-01***: Premium-grade LBG, used in *cream cheese, ice cream, desserts, and other dairy products.*
- ***idealcarob A-02***: Regular-grade LBG, used in *ice cream, sauces, cheese, and other dairy products.*
- ***idealcarob A-03***: Food-grade LBG, used in *canned meat or fish, bakery products, sauces, budget ice cream and ice lollies, frozen foods.*