

Application note PromOat general information

Lantmännen's PromOat Oat beta-glucan is a natural, clean label, non-GMO oat fibre that delivers health benefits and functionality without imparting the graininess normally present in oats.



Level of Inclusion

The level of inclusion depends on the reason to add PromOat in the formulation.

If PromOat is included to declare a health claim, there is an amount of beta-glucan that the food product must contain according to the health authorities of the country. If the product is to be sold in Europe, Canada or the United States, section 2 refers to the amounts required by their health authorities.

If PromOat is included for its functional properties, the level of inclusion will vary depending on the application, the desired texture and mouthfeel and the tolerable viscosity during processing.

Percentage Solution of PromOat	CPS at Ambient Temperature	CPS at 90° C
1%	150-250	
2%	750-850	
6%	6,000-8,000	700-800
10%	20,000	1,000

By way of guidance, PromOat solutions in water generate the following typical viscosities:

[CPS = Centipoise. For comparison, the viscosity of water at room temperature is 1 CPS]

A 10% solution of PromOat would give a viscosity of around 20,000 cps - this is a gel at ambient temperature and not possible to pump.

At 90°C, this viscosity drops to around 1,000 cps. Such a solution is readily pumped between vessels (it should be noted that the initial viscosity is recovered when the product is cooled down). There is considerable variation in the innate viscosities of various applications. Therefore, it is recommended that the combinations of these materials with PromOat, at different levels of addition, are initially screened for resultant viscosity, processability and pumpability at typical processing temperatures.



Including PromOat for health claims:

PromOat has a high beta-glucan content (34% dwb), which makes it possible to add health claims in food products. Health authorities from different countries may differ in the health claims approved for beta-glucans and the requirements to include the claims. In Europe, Canada and the US, the health claims for oat beta-glucans are:

Cholesterol reduction:

EFSA: 1 g beta-glucan per portion in EU (3.13 g PromOat per serving, 3 g/ day*). Health Canada and FDA: 0.75 g beta-glucan per portion (2.34 g PromOat per serving, 3 g/day*)

To reach this claim, it is sufficient to have 1 g beta-glucan per portion. The consumer then needs to be informed that 3 g of beta-glucan should be consumed per day. It should be noted that the 3 g do not need to come from the same product and that other sources of cereal beta-glucans can be consumed, such as oat porridge, barley, etc.

Blood glucose reduction:

4 g beta-glucan per 30 g available carbohydrate in a portion (11.8 g of PromOat per 25 g of available carbohydrate in the recipe)

Including PromOat for functionality:

- PromOat beta-glucan is a creamy white, neutral tasting powder that integrates easily into food recipes.
- PromOat contains soluble beta-glucans of high molecular weight that bind water. Soluble beta-glucans thicken liquid products and stabilise creamy emulsions, creating a smooth texture and an indulgent creamy mouthfeel.
- PromOat improves moisture management.
- PromOat has fat mimicking properties and can be used as fat replacer in many different applications, such as yoghurt, cream cheese, butter spreads, ice cream and sauces.
- PromOat can be used in combination with other hydrocolloids to provide a unique mouthfeel.
- PromOat can be used as a binding agent.



Recommendations and other observations:

PromOat is stable at pH between 3.5 and 8. At very acidic levels (pH 3 and below), PromOat, like all polysaccharides, will start to depolymerise. This can start to occur between pH 3 and pH 3.5 if the temperature is raised.

PromOat is stable when used across a wide range of temperatures. It can be sterilised or pasteurised as part of a food or drink system when in solution.

Mixing recommendations:

The beta-glucan component (34% dwb) of PromOat is a typical hydrocolloid; hence, PromOat should be added to systems using methods suitable for hydrocolloids such as guar gum, swelling starches, xanthan gum and the like.

A high-shear mixer, blender or homogeniser should be used to ensure good dispersion and to break up any lumps formed during dissolution into the food product.

In products in which more than one dry powder additive is to be included, it is recommended to vigorously dry-slurry, dry-mix, or dry co-mill PromOat with the other dry ingredients. This makes the dissolution of PromOat faster and more efficient.

PromOat is readily dispersible in oil. It is possible to mix PromOat in the oil phase before incorporating the water phase to the mixture. This option is recommended for applications that contain high percentages of fat.

