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## Pectin

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- Gelling agent from virgin apple pectin for the production of jam, marmalade, fruit spread and jelly -

(standardised with dextrose and calcium citrate, also permissible for the production of organic products)

### Technical informations and use instructions

#### What is pectin?

**Pectin** is a "bonding substance" naturally occurring in all fruits, which brings about the consistency of fruit pulp.

Pulpy fruits such as strawberries, cherries and grapes contain little pectin. In contrast, apples, quinces and black currants are pectin-rich fruits.

During the **preparation of jams and fruit spreads**, this pectin brings about the gelation of a fruit pulp boiled under the addition of sugar and then cooled down. Very pectin-rich pome fruit (e.g. quinces) gels without additionally added **pectin**.

In contrast, during the processing of pome & soft fruit as well as citrus fruits and during the production of **jellies** from fruit juice or wine, **pectin** must be added in order to obtain products with a reasonable consistency.

#### The Konfitürenverordnung:

With respect to recipes, no limits are set on the imagination of those who process and cook fruit at home for their personal use. However, the provisions of the German **Konfitürenverordnung** (KonfV: regulation concerning jams and other similar products) apply to commercially produced products and products intended for sale.

It governs production, consistency and declaration (e.g. minimum contents in fruit, dry matter or sugar, and other permitted ingredients such as honey, lemon juice and spirits). The German **Additives Admission Ordinance (ZZuIV)** designates thickening agents, acidifiers, sweetening agents and sweeteners as well as the requirements for their use.

#### Gelling sugar or pectin?

In contrast to "gelling sugar", our **pectin** makes gelation and sweetening independent from one another. This means freedom of decision concerning the **fruit content, quantity and origin of sugar** (sugar cane / sugar beet, conventional / organic, refined / brown) or **alternative sweetening** (fruit syrup, sugar substitutes). In addition to products which are particularly aromatic in terms of fruit or reduced calorific value, the result can also be specialities.

The calcium content of our **pectin** necessary for gelation is adjusted so that the desired consistency can easily be adjusted solely via the dosage of **pectin**.

Our **pectin** extracted from apples is neither chemically modified, nor contains any preservatives. As a result, it is also suitable for organic products and all those products which may not be chemically preserved according to the KonfV.

#### Shelf life of end products:

Jams, marmalades, jellies and fruit spreads are fruit preserves which should normally be non-perishable in an unopened jar without cooling. Requirements for this purpose are healthy, clean fruits, hygienic working method, a sufficiently high acid content in the recipe (pH value less than 3.5), heat treatment (boil the entire recipe for at least 5 minutes) and above all the careful filling with an airtight, closing screw-on lid. If the headspace of the cooled jar does not consist of a vacuum, but consists of air, the formation of mould already in the original sealed jar must be anticipated. The reason for this are mould spores which exist everywhere, withstand pasteurisation and which only prevents the absolute absence of atmospheric oxygen in the germination and formation of visible mould.

The recipe's acid content and sugar content are decisive for the shelf life after opening. The less acid and sugar the product has, the worse its shelf life is after opening.

That is why opened jars should be stored in a refrigerator and consumed within one week (jams and jellies) or a few days (fruit spreads). Short shelf life after opening is already to be taken into consideration before filling by selecting smaller jars. Where permitted by food law, shelf life could be extended through the addition of chemical preservatives (e.g. sorbic acid).

### Introduction of pectin:

Pectin - premixed dry with part of the sugar - can be quite easily stirred clump-free into the liquid. But a hand-held blender also makes this much easier during the preparation of jelly.

### Gelling sample:

Immediately before filling it should be checked whether a tablespoon full of the boiling mixture gels slightly firmer than de-sired after cooling on a cold plate. Since water evaporates in the process, the consistency of the same mixture will turn out to be rather less in the jar.

### Filling:

The technically flawless, careful filling succeeds in the following steps:

- Skim off the foam that forms when cooking.
- Fill the hot mass **up to the brim** in clean, possibly preheated jars and immediately seal firmly.
- Turn the jars over on the lid and allow to completely cool down **without vibration**.

### Recipe examples:

#### Fruit spread (approx. 7.5-8 kg)

- Mix 100 g of "pectin" with 300 g of sugar.
- Stir this mixture into 5 kg of pureed fruits; dissolve and boil while stirring.
- Stir in 2.2 kg of sugar and bring to a boil again.
- During the processing of fruits with less acid, add approx. 30 g of citric acid or 500 mL of lemon juice (pH<3.5!).
- Continue to boil while stirring for 3-4 minutes.
- Fill the hot mass.

#### Juice / wine jelly (approx. 7.5 kg)

- Mix 100 g of "pectin" with 300 g of sugar.
- Stir this mixture into 4-4.5 litres of fruit juice or wine; dissolve and boil while stirring.
- Stir in 2.7 kg of sugar and bring to a boil again.
- During the processing of juices with less acid, add approx. 30 g of citric acid or approx. 500 mL of lemon juice (pH<3.5!).
- Continue to boil while stirring for 3-4 minutes.
- Fill the hot mixture.

### Possible end product defects:

A dosage of pectin that is too low or too high can cause the product to have low viscosity or consistency that is too firm. But recipe ingredients (e.g. rhubarb, fresh chilli peppers) can also impair the gelling ability of the pectin. The abovementioned ingredients require a higher dosage of pectin, possibly also a change in the order of adding the ingredients.

An incomplete dissolution of pectin while stirring in the recipe's fruit content can lead to irregular gelation. In addition, there is a risk that one skims off floating undissolved pectin when skimming, which is then lacking for the subsequently desired gelation.

Another requirement for a homogeneous, thoroughly gelled product is that the gelation only starts and takes place during the cooling of filled jars. But high mineral contents in the recipe (e.g. raw sugar, heavy red wines) can already lead to partially early gelation of the pectin during the cooking process. Then the results are jellies which do not show any smooth cut surface and cause and bring about a grainy consistency. The use of refined sugar instead of raw sugar - at least in pre-mixture with pectin - could prevent this error. Perhaps our pure **pectin without the addition of calcium** also helps. Please feel free to contact us!

Browning reactions make many end products, which have a bright colour when freshly produced, fade or become brownish over time. This natural quality loss can be slightly delayed with the addition of ascorbic acid (approx. 0.3 g/kg) to the fruit content immediately at the start of processing as well as through cool, dark storage.

### Composition:

Gelling agent pectin E440, glucose, firming agent calcium citrate E333

### Storage:

Dry and cool.

### Container sizes:

100 g can	(No. 5550)
1 kg bag	(No. 5551)
5 kg pail	(No. 5552)

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