

Organic Food Processing - Principles, Concepts and Recommendations for the Future

**Results of a European research project on the quality of low
input foods**

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4.5. Concept paper on processing methods and their labelling

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4.5.1. Introduction

Processing methods have, on the one hand, a strong influence on the quality of food, both on the nutritional quality as well as on food safety. On the other hand, one can use different processing methods to improve the quality of food, e.g. fermentation processes. Nevertheless, most processing methods dilute the natural properties and the nutritional quality of food.

Organic food should be of high nutritional and high natural quality. Some private standards or private companies demand that organic food should fulfil criteria of wholesome nutrition, where processing methods must be seen as relevant tools.

Transparency is an important part of the organic food concept. Transparency of processing methods as an additional part of labelling has been under discussion recently. The general EU food legislation only recommends or requires the labelling of some selected methods, such as GMO or irradiation.

This concept paper outlines and discusses the way in which a more extended labelling of processing methods could be realised.

4.5.2. State of the art and status of current regulations

Labelling of processing methods

Only very little information about processing methods can be found on labels of foods. Sometimes additional leaflets give a clearer picture of how the food was produced. On the other hand, there are a number of processing methods that can be recognised directly when a consumer buys a specific food. Bread is always baked and frozen vegetables are obviously frozen. That means no additional information is needed.

The situation is much trickier if bread that is sold as 'fresh' is baked from frozen dough. Normally, consumers have no chance of finding out about that process unless they get additional information directly from the retailer or the baker.

With current EU regulations and national food laws only selected processing methods have to be labelled. For example, GMO methods, irradiation or the heating methods for milk must be labelled. Mandatory labelling is recommended for e.g. homogenisation of milk or dairy products.

In the organic food sector EU Regulation 2092/91 does not require any further labelling in relation to the processing methods. Nearly the same situation applies to private standards for processing of organic food. There are some exceptions for some standards (like Demeter, Bioland, Naturland in Germany and Bio Suisse in Switzerland), where at least some of the processing methods have to be listed (e.g. in the Bio Suisse processing standards: homogenisation, pasteurisation, thermisation, sterilisation, blanching, deep-freezing, use of enzymes, etc.). Only some companies give additional information about their processing methods on the labels or in product-related information material.

EU Regulation 2092/91 deals with processing methods only by excluding some methods. Some private standards have developed a type of positive description/list of accepted processing methods. But, once again, special labelling requirements cannot be found, with some minor exceptions.

4.5.3 Discussion

Influence of processing methods on the food quality

Most processing methods have more or less strong influences on product properties. Heat treatments have in general a negative impact on food with regard to nutritional quality; but with regard to food safety heat treatments have a positive impact. Heat treatments have negative impacts on lipids, proteins and vitamins. Microwave heating has an impact on lipids and proteins. By using filtration methods we change the natural relationships between different compounds.

Fermentation has positive influences on food. During fermentation lactic acid bacteria and enzymes are formed. Lactic acid bacteria produce bioactive peptides, which are also good for health.

Consumer's right to know relevant processing methods

One can argue that interested consumers have the right to know which processing methods are being applied.

However, consumers' knowledge of processing methods is generally very poor. They make decisions or form their opinions based on their feelings or information they have got from different media: newspapers, TV, radio, Internet and so on. Therefore, it is very important to analyse very critically how much information we give to consumers. On the other hand, consumers who buy organic food are more interested in their health and also require accurate information. In any case, it is clear that consumers have to be educated to understand the meaning of basic food processes. And this requires money and that must be resourced.

There are a number of problems that might arise when giving more information to consumers about processing methods:

- Too much additional information about processing methods can also be misunderstood by consumers. Some consumers can assume that the organic foods are more strongly processed than the conventional ones and might be frightened by getting this kind of additional information about processing methods for an organic food that is not obligatory for food in general.
- The size of the label of food product is normally very small. Food companies are being required to give more and more information about the product because of the requirements of EU-food legislation. Therefore, it might be difficult to find enough space on labels for new information.
- Organic food products and the organic food market differ from country to country in the EU. In some countries organic food processing has just started and it is important that regulations not be too complicated. On the other hand, in some countries organic food is very common and the market is mature. From their point of view it is important to give as much information as possible about products and processing methods. Additional information concerning processing methods might also be one way for companies to differentiate themselves from the competitors.
- When making health claims there are some legal restrictions to follow. If some processes are stated in labelling as being good for health, like fermentation, the state authorities might require that such claims be documented with clinical experiments. Although organic food is often considered 'healthy' based on the EU regulation 2092/91, special general health claims are not allowed on the products.

There is a whole debate about misleading claims in the Codex Alimentarius food labelling committee, which shows how difficult this issue is to handle.

4.5.4. Scenarios

Transparency will be an increasingly important question in future. In addition, attitudes about food additives and processing aids including enzymes will be stronger. Consumers would like to buy home-made food from supermarkets.

There are three scenarios that could be followed:

- Scenario I: Labelling of certified organic food additives: A positive labelling of some of the relevant processing technologies.
- Scenario II: Labelling of processing technologies which might mislead consumers (e.g. reconstitution of fruit juice concentrates) or might be less favourable for achieving high nutritional quality, but which do not have to be labelled by law.
- Scenario III: A special labelling of certain processing steps with special positive effects on quality and on the environment. This would make sense for labelling fermentation processes, which are perceived positively by the consumers.

Basically these three scenarios can be implemented alone, in combination or all together.

4.5.5. Possible instruments and tools

There are private as well as public instruments and tools to achieve better labelling:

- The EU legislation should provide recommendations regarding, what is allowed to be labelled and what cannot be labelled.
- The country authorities and private standard-setting bodies have the opportunity to decide in their standards what kind of information about processing methods companies should be putting on the labels of their products.

4.5.6 Recommendations

Accurate labelling is a very important part of the organic food concept. Therefore, the aspect of how to develop labelling concepts further down the line is important. Private companies and labelling organisations have to take the first step by developing new labelling concepts such as this. It is of the utmost importance that the consumers understand those new messages. Therefore, key questions have to be identified as is proposed in this chapter.

Creative labelling solutions must be developed to enable consumers to understand the communication and to avoid additional labelling that leads to misunderstandings. In the worst case scenario consumers could have the impression that, for example, additionally labelled ingredients mean that the product is processed with more additives than comparable conventional products. New communication concepts of working with text and pictures are needed.

Perhaps new types of labelling systems that guarantee that the product is, for example 'carefully processed' or 'hand-crafted' could also be considered.

We anticipate that expanded labelling could cause problems, for example with competing regulations. Therefore, labelling regulations and other relevant regulations have to be checked to see whether conflicts may arise.

The following recommendations are given:

	Private sector	Competent authorities	European Commission
Ingredients, food additives and processing aids	<ul style="list-style-type: none"> ▪ The use and labelling of organic certified additives and other ingredients with technological functionalities should be promoted ▪ Develop a system for labelling carry-over substances ▪ Additives should be listed in the list of ingredients by name ▪ Labelling systems for the processing aids used should be developed 		<ul style="list-style-type: none"> ▪ The EU legal framework for new labelling systems has to be reconsidered and adapted ▪ EU should accept the certification of substances mentioned in Annex VI A as organic
Processing technology	<p>Should develop labelling systems for:</p> <ul style="list-style-type: none"> ▪ Blanching ▪ Pasteurisation and sterilisation ▪ Concentrating ▪ Extrusion ▪ Ultrafiltration ▪ Post-pasteurisation ▪ Drying of dairy products ▪ Reverse osmosis ▪ Microwave/infrared heating ▪ Reconstitution of dried products ▪ Packaging material 		<ul style="list-style-type: none"> ▪ The EU legal framework for new labelling systems has to be reconsidered and adapted
Processing methods having positive effects on the nutritional quality of the product or on the environment.	<p>Should develop labelling systems for:</p> <p>a) Fermentation: Should be mentioned because lactic acid bacteria is good for human health; lactic acid bacteria produce bioactive peptides</p> <p>b) If –not used: should be mentioned if the process typical for the conventional manufacturing is not used, like homogenisation in milk processing</p> <p>c) Biodegradable packaging materials: positive effects on environment</p>		<ul style="list-style-type: none"> ▪ The EU legal framework for new labelling systems has to be reconsidered and adapted.