

# Approaches used in organic and low input food processing: Impact on food quality and safety

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# Study design

- > **Consultation of 250 selected experts in 13 countries in Europe in 2 rounds**
- > **Two standardised questionnaires were sent around: first more explorative, second detailed based on the results of the first consultation**
- > **The most important and currently discussed aspects regarding organic food processing have been taken up**
- > **120 persons, answered the first survey, 83 persons answered the second survey**
- > **Experts selection: food processing companies, adviser, research institutes, processing standard setting/certification organisations, government agencies, consumer organisations**

# Reasons why to reflect more about principles in organic food processing?

- > Increasing demand for more processed organic food (long shelf life, convenience)  
=> challenge for the organic food sector
- > Frequent discussions to the underlying principles on organic food processing  
=> no principles or regulations in the EU Regulation 2092/91
- > Consumer demand of organic food with a high quality regarding different quality parameters like **sensory quality, health aspect, use of additives**
- > To link the ideas and expectations regarding organic processed food from the field to the table

# What we want to achieve and to avoid

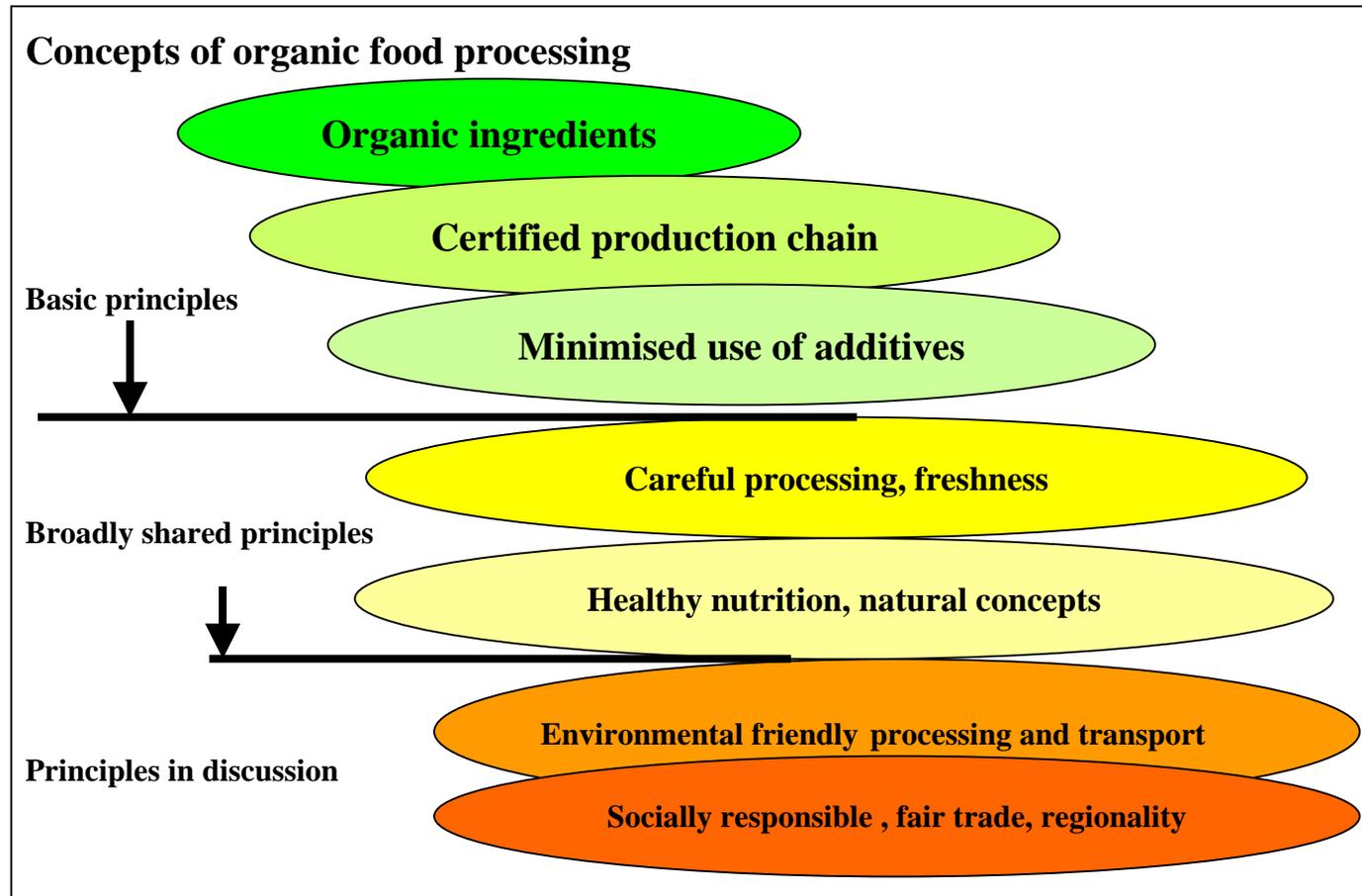
## *To achieve:*

- > **A high consensus about suitable concepts for organic food processing**
- > **Clearer framework, clearer criteria for decision-makers**
- > **more guidance for actors**

## *To avoid:*

- > **Disharmonised implementation with competitively problems and loss of consumer trust**
- > **A „beaurocratic overkill“ with new regulations and standards => propose new means to re-act**

# Underlying principles for organic food processing



# Result: Defining important terms in organic food processing

The definitions with the best acceptations are as follow:

- > *Careful processing*: “**the maximum to keep the important compounds and the maximum to avoid undesired compounds or nutritional losses**”.
- > *E.g. UHT milk; with the use of the direct process we avoid the cooking flavour/taste*

# Result: Defining important terms in organic food processing

- > *Fresh product*: **“Product with a short shelf life, needs to be stored at a specific temperature or under controlled temperature conditions”.**
- > *Authenticity*: **“Production and processing steps and the origin are visible/recognizable to the consumer”**

# Result: Defining important terms in organic food processing

- > **55% support a definition of the term *careful processing***
  - > **the question is, if instead of a definition it is better to define the production methods**
  
- > **58% support a definition of the term *fresh product***
  - > **difficulty to have a definition which covers all product groups**
  - > **differentiation between fresh product versus fresh produced**
  - > **product specific definition to reach a consensus in the declaration in whole Europe and with that a better consumer information**
  
- > **48% support a definition of the term *authenticity***
  - > **with a good declaration praxis the most named definition could be realized**

# Which criteria are important for an organic product to be successful on the food market?

From 12 possible criteria

- >The most important criteria was **sensory quality**
- >The second most the **minimum use of additives and processing aids**
- >Third most **freshness**, followed by **authenticity**
- > all quality aspects that are recognizable to the consumer

The general aspect health is for the experts in the food processing sector an important but not the most important aspect.

# **Important aspects in organic food processing to be successful on the market**

**The importance of the subjects sensory quality and freshness for the success on the market reflect clearly:**

- > consumer of organic food is expecting more than “organic”**
- > it is important to advance the quality understanding by the different market player (included farmer)**
- > the innovation prize at the Biofach is already one of a possible instrument, also the bread degustation of Demeter Germany as well the sensory prize of Bio Suisse at the Bio Marché**

## Important aspects in organic food processing to be successful on the market: *minimum use of additives*

- > The experts clearly supported the reduction of the use of additives in organic processed food. A further development in this area is really needed.
- > It could be a three step scenario:
  - >standardizing evaluation processes for the authorization of additives
  - >reduction of the already allowed additives on a minimum
  - >replacement of additives on agriculture origin with certified organic additives (e.g. organic soy lecithin)

## ***Results regarding minimum use of additives***

- > On the question “is organic healthier” some clear answers are given, two of them are:**
  - > the risk of residues is as less as possible***
  - > organic processed food contains ten time less of additives than conventional food***

## ***Results regarding minimum use of additives***

	<b>New</b>	<b>Consequences</b>
<b>Flavours</b>	<b>Flavours certified organic</b>	<b>New quality understanding on flavouring</b>  <b>Question: is there really a need of flavours?</b>  <b>No use of flavours means:</b>  <b>-&gt; products with a own character, own sensory quality</b>
<b>Antioxidants</b>	<b>Antioxidants certified organic and of non synthetic origin</b>	<b>Development of alternative substances e. g. rosemary extract</b>

## ***Results regarding minimum use of additives***

	<b>New</b>	<b>Consequences</b>
<b>Emulsifiers</b>	<b>Certified organic</b>	<b>No GMO problematic with e.g. soy lecithin</b>
<b>Enzymes</b>	<b>Specific requirements depending on the use</b>	<b>e.g. prohibition of enzymes in the bread production -&gt; no continuous bakery process</b>
<b>Micro-organisms</b>	<b>Certified organic</b>	<b>Less carry over of additives by the micro-organisms</b>

# Results regarding Labelling

	<b>New</b>	
<b>E.g. Labelling of the origin</b>	<b>Indication of the origin</b>	<b>New sensitivity of the origin of the raw material -&gt; more regional-&gt;with that more seasonal-&gt; shorter storage -&gt; final a better product quality</b>

**Important aspects in organic food processing to be successful on the market: *authenticity***

**> high relevance of aspect authenticity**

**->reflects the sensitisation of the consumer on the different scandals in food processing**

**There are two steps to take account to this expectation:**

**->consumer sensitivity in the product development of organic food:**

**a cream sauce should be made with cream and not be a mixture of low fat milk powder, palm fat, water, emulsifier and a little cream**

**->a more detailed declaration in the EU-legislation**

# Processing methods

- > goal to strive for: *the use of the most cautious and environmentally friendly techniques for the processing of organic foods*
  - > This goal is supported by the experts and is one important perception of the consumers

## Situation:

- > specific processing methods for organic food production are generally expected
- > on the question; which methods are acceptable for processed organic food -> no explicit result in the survey
- > the discussion has to be broken down on the level of product groups or single products
  - > An obligation of the declaration of the processing methods could activate a re-consideration of this problematic

# Environmental friendly processing

- > **The goal of *the use of the most cautious and environmentally friendly techniques* is**
  1. **a important perception of the consumer**
  2. **a logical consequence on the principle of organic agriculture**

**It needs to take account into this discussion the following problematic:**

**The most cautious technique is not always the best for the product quality**

**e.g. UHT milk:**

1. **produced by the indirect techniques we need less energy but we have a milk with the typical cooking flavor**
2. **Produced by the direct method we need more energy but we have no off flavor**

## Research needs: proposals of the experts

- > Research needs were mostly named regarding
  - > careful processing
  - > minimum use of additives
  - > develop suitable production and processing methods in respect to the requirements
- > General focus of future research regarding food processing should be on premium, sustainable produced quality, to upgrade the sensory quality of processed organic food.

## **In cooperation with:**

- > University of Kassel, Department of Organic Food Quality and Food Culture**
- > University of Helsinki, Mikkeli Centre for Rural Research and Training**
- > Danish Research Centre for Organic Farming Technical University of Denmark, Lyngby**
- > Research Institute of Organic Agriculture FIBL**

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**Last but not least**

**Don't forget: to eat means also to enjoy!**

**Thank you for your attention**



**Approaches to quality, health and nutritional aspects of organic products, Odense, May 30<sup>th</sup>, 2006**