



Organic Food Quality & Health

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# Organic Food Quality and Health

**State of the art  
of Research by FQH members**

**Oktober 2008**

Scientific Workshop for FQH members

Modena, June 17th, 2008

# Questions

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- **Who does what?**
- **Which subjects are covered?**
- **What shows the overview of the whole field?**

# Who? – 14 Research members of FQH

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- Bioforsk Økologisk (Norway)
- BRAD (Denmark)
- ElmFarm (UK)
- FiBL (Switzerland)
- FiBL-Austria (Austria)
- ICROFS (Denmark) (former DARCOF)
- ITAB (France)
- Kassel-BioDynamic (Germany)
- Kassel-Org Food Quality (Germany)
- Kwalis (Germany)
- Laverstoke (UK)
- Louis Bolk Institute (Netherlands)
- RIKILT (Netherlands)
- Warsaw University (Poland)

# Who does what? - 1

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## **Bioforsk Økologisk : *Quality of animal products, lifestyle***

- **Quality analysis of critical control points within the whole food chain and their impact on food quality, safety and health (QACCP)**
- **ORGMILK – Organic production methods and milk quality**
- **iPOPY - Innovative Public Organic food Procurement for Youth**
- **Minimizing medicine use in organic dairy herds through animal health and welfare planning (AniPlan)**
- **SWATICK - Disease resistance and robustness related to tick-borne fever in sheep**
- **Organic protein feed and edible oil from oilseed crops**
- **PHYTOMILK - CORE ORGANIC**

# Who does what? - 2

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## **BRAD: *Biocrystallization, milk quality***

- Optimization of the crystallization procedure
- Development of a bio-crystallization method for examining effects of homeopathic metal potencies on germinating seeds
- Production of organic cheese on the basis of milk from hay-fed herds

# Who does what? - 3

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## **ICROFS (Denmark) (former DARCOF): *Quality of animal products, cropping systems, consumers***

- Organic food and health
- Organic cropping systems for vegetable production
- Integrity and quality of organic meet and eggs
- Organic milk of high quality
- Organic aquaculture
- Effect of cropping systems on production and the environment
- The viability and stability of demand
- Public policies and demand for organic food
- Health and integrity in organic dairy production
- High quality seed
- Sustainability of organic farming in a global food chains perspective

# Who does what? - 4

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## **Elm Farm Research Centre: *Cropping systems, poultry***

- Organic cereal variety and mixtures trials
- Generating & evaluating a novel genetic resource in wheat in diverse environments
- Poultry Research : Breed and Feed Trials

# Who does what? - 5

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## **FiBL- Switzerland: *Quality of plant products, animal production, health effects***

- **GDV – a correlation method to standard quality**
- **Quality assessments in tomatoes and carrots**
- **Quality assessments in wheat and potatoes grown in long term organically and conventionally managed field plots (Dynamic, Organic, Conventional)**
- **Effects of agricultural practise on microbial diversity on foods (i.e. apples)**
- **Quality assessment of new and old pest- and disease tolerant cultivars with apples, pears, cherries, wine and table graps**
- **pro-Q - reduction of antibiotics and improvement of udder health in Swiss and German dairy farms: For 6 years a network of more than 100 dairy farms in Switzerland and South Germany is established in order to practice an enhanced animal health concept by preventive methods, management improvement and residue free therapy methods**
- **Quality analysis of critical control points within the whole food chain and their impact on food quality, safety and health**
- **Preserving of antioxidants in organic apple juices by different processing methodes**
- **Influences of organically and conventionally processed diets affecting the fertility of rabbits**
- **Organic food for a better quality of life (clinical trail)**

# Who does what? - 6

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## **FiBL – Austria: *Feeding experiments with animals***

- Feeding experiment with laboratory mice to investigate potential influences of carrots from organic and conventional growing systems
- Food preference tests with laboratory rats for the evaluation of the nutritional quality of differently grown wheat (participation in QLIF)
- Long-term feeding experiments with laboratory mice to investigate potential nutritional risks of Bt corn

# Who does what? - 7

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## ***ITAB: Quality and health effects of plant products, methods***

- Global analysis methods
- Wheat and allergies
- Quality of Organic bread

# Who does what? - 8

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## **Louis Bolk Institute: *Concept development, crystallisation, lifestyle and health, quality of plant and animal products***

- Programme to validate the food quality concept of “Inner Quality” and a “Inner Quality Index”
- Parameters for Apple Quality 1 & 2, Parameters for Carrot Quality 1 & 2
- Validation of the biocrystallization method, Optimization of the crystallization procedure
- Parsifal-project
- KOALA-project
- Organic - More healthy?
- A concept of Health as self regulation
- Monitoring of contaminants in organic and conventional primary crops.
- Risk analysis of pathogens with the use of animal manure in organic and conventional vegetable production
- Milk Quality
- Quality of tomatoes
- Development of a biocrystallization method for examining effects of homeopathic metal potencies on germinating seeds

# Who does what? - 9

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## **Kassel – BioDynamic: *Quality and health effects of animal products***

- **Animal selfmedication**
- **Homeopathy and mastitis**
- **Biodynamic and organic milk quality**
- **Farmer`s experience**

# Who does what? - 10

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## **Kassel – Organic Food Quality: *Methods / Biocrystallization, lifestyle***

- Validation of analytical and holistic methods for organic food quality analysis
- Development of a sensory training program for handcraft food processing of organic cereal and milk products
- Lifestyles - nutrition regimes - appreciation of nature

# Who does what? - 11

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## **Kwalis: *Quality of plant products***

- Analysis of Fruits, Vegetables, Cereals, Fruit juices and other by non-conv. methods

# Who does what? - 12

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## Laverstoke: *Quality of plant products*

- Taste tests
- Food Quality

# Who does what? - 13

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## Rikilt: *food safety*

- Food Safety

# Who does what? - 14

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## **Warsaw University of Life Sciences: *Quality of plant products, feeding experiments, lifestyle***

- Evaluation of the bio-compounds level in organic vs. conventionally produced plant crops and their preserves
- Animal dietary intervention study of effect of organic vs conventional food production methods on health and well – being of rats
- Different aspects of organic and conventional food consumers' lifestyle

# Subjects in Research

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- **Concept development**
- **Method development**
- **Quality of plant products and how to influence this**
- **Quality of animal products and how to influence this**
- **Health effects of food (animals)**
- **Health effects of food (humans)**
- **Consumers and lifestyle**

# Concept development

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## Bioforsk

- Quality analysis of critical control points within the whole food chain and their impact on food quality, safety and health (QACCP)

## Louis Bolk Institute

- Programme to validate the food quality concept of “Inner Quality” and a “Inner Quality Index”
- Parameters for Apple Quality 1 & 2, Parameters for Carrot Quality 1 & 2
- Concept of Health as self regulation

# Method development

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## **BRAD, Kassel-Org Food Quality and LBI = TRIANGLE group**

- Optimization and validation of the biocrystallization procedure

## **BRAD**

- Development of a biocrystallization method for examining effects of homeopathic metal potencies on germinating seeds

## **FiBL-Switzerland**

- GDV – a correlation method to standard quality

## **ITAB**

- Global analysis methods

## **ICROFS**

- Organic Food and Health

## **Kassel-Org Food Quality**

- Development of a sensory training program for handcraft food processing of organic cereal and milk products

## **Kwalis**

- Analysis of Fruits, Vegetables, Cereals, Fruit juices and other by non conv. methods

## **Louis Bolk Institute**

- Development of a biocrystallization method for examining effects of homeopathic metal potencies on germinating seeds
- Organic – More healthy?

# Quality of plant products – 1

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## **Bioforsk**

- Organic protein feed and edible oil from oilseed crops

## **DARCOF**

- Organic cropping systems for vegetable production
- High quality seed

## **ElmFarm**

- Organic cereal variety and mixtures trials
- Generating & evaluating a novel genetic resource in wheat in diverse environments

## **FiBL- Switzerland**

- Effects of agricultural practise on microbial diversity on foods (i.e. apples)
- Quality assessments in tomatoes and carrots
- Quality assessments in wheat and potatoes grown in long term organically and conventionally managed field plots (Dynamic, Organic, Conventional)
- Quality assessment of new and old pest- and disease tolerant cultivars with apples, pears, cherries, wine and table graps
- Quality analysis of critical control points within the whole food chain and their impact on food quality, safety and health
- Preserving of antioxidants in organic apple juices by different processing methodes

# Quality of plant products - 2

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## **ITAB**

- Quality of Organic bread

## **Kwalis**

- Analysis of Fruits, Vegetables, Cereals, Fruit juices and other

## **Laverstoke**

- Taste tests
- Food Quality

## **Louis Bolk Institute**

- Parameters for Apple Quality 1 & 2, Parameters for Carrot Quality 1 & 2
- Monitoring of contaminants in organic and conventional primary crops
- Risk analysis of pathogens with the use of animal manure in organic and conventional vegetable production
- Quality of tomatoes

## **Warsaw University of Life Sciences**

- Evaluation of the bio-compounds level in organic vs. conventionally produced plant crops and their preserves

# Quality of animal products

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## Bioforsk

- ORGMILK – Organic production methods and milk quality
- PHYTOMILK - CORE ORGANIC

## BRAD

- Production of organic cheese on the basis of milk from hay-fed herds.

## DARCOF

- Integrity and quality of organic meat and eggs
- Organic milk of high quality
- Health and integrity in organic dairy production

## ElmFarm

- Poultry Research : Breed and Feed Trials

## FiBL- Switzerland

- pro-Q - reduction of antibiotics and improvement of udder health in Swiss and German dairy farms: For 6 years a network of more than 100 dairy farms in Switzerland and South Germany is established in order to practice an enhanced animal health concept by preventive methods, management improvement and residue free therapy methods
- Quality analysis of critical control points within the whole food chain and their impact on food quality, safety and health

## Kassel-BioDynamic

- Biodynamic and organic milk quality

## Louis Bolk Institute

- Milk Quality

# Health effects – animals

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## **Bioforsk**

- Minimising medicine use in organic dairy herds through animal health and welfare planning (AniPlan)

## **FiBL- Switzerland**

- Influences of organically and conventionally processed diets affecting the fertility of rabbits

## **FiBL-Austria**

- Feeding experiment with laboratory mice to investigate potential influences of carrots from organic and conventional growing systems
- Food preference tests with laboratory rats for the evaluation of the nutritional quality of differently grown wheat (participation in QLIF)
- Long-term feeding experiments with laboratory mice to investigate potential nutritional risks of Bt corn

## **Kassel-BioDynamic**

- Animal self medication

## **Louis Bolk Institute**

- Organic - More healthy?

## **Warsaw University of Life Sciences**

- Animal dietary intervention study of effect of organic vs conventional food production methods on health and well – being of rats

# Health – effects - humans

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## **DARCOF**

- Organic food and health

## **FiBL- Switzerland**

- Organic food for a better quality of life (clinical trail)

## **ITAB**

- Wheat and allergies

## **Kassel-BioDynamic**

- Biodynamic and organic milk quality

## **Louis Bolk Institute**

- Parsifal-project
- KOALA-project

# Consumers and lifestyle

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## **Bioforsk**

- iPOPY - Innovative Public Organic food Procurement for Youth

## **DARCOF**

- The viability and stability of demand
- Public policies and demands for organic food
- Sustainability of organic farming in a global food chains perspective

## **Kassel-Org Food Quality**

- Lifestyles - nutrition regimes - appreciation of nature

## **Louis Bolk Institute**

- Parsifal-project
- KOALA-project

## **Warsaw University of Life Sciences**

- Different aspects of organic and conventional food consumers' lifestyle

# Overview

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- **Concepts: 2 institutions, 4 projects**
- **Methods : 7 institutions, 9 projects**
- **Quality of plant products: 9 institutions, 20 projects**
- **Quality of animal products: 7 institutions, 11 projects**
- **Health effects of food (animals): 5 institutions, 7 projects**
- **Health effects of food (humans): 5 institutions, 6 projects**
- **Consumers and lifestyle: 5 institutions, 8 projects**