



# SCIENCE AS GATEWAY TO INNOVATION, COOPERATION AND DEVELOPMENT

Head of Technology and Knowledge Transfer Office  
LLU Faculty of Food Technology  
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## EDUCATION

Providing both higher academic and professional education in all 8 faculties:

- Agriculture
- Veterinary Medicine
- Food Technology
- Engineering
- Forest
- Environment and Civil Engineering
- Economics and Social Development
- Information Technologies

## SCIENCE

Developing science for internationally important research areas :

- Multifunctional agriculture
- Energetics
- Information technologies
- Multidiscipline science
- Forest science
- Environmental science
- Sustainable rural development

## CULTURE

- Traditions during the ages
- Various amateur art clusters
- Student activities



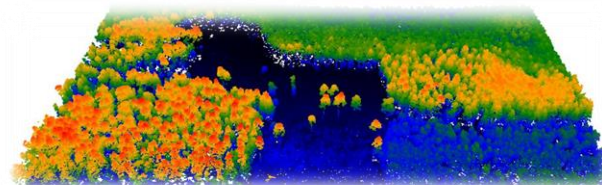
**The uniqueness of the LLU:  
a wide spectrum of sectors, that develops a  
multifunctional intersectional disciplines**





## Forest Faculty

- Forestry
- Forest Exploitation
- Wood Processing



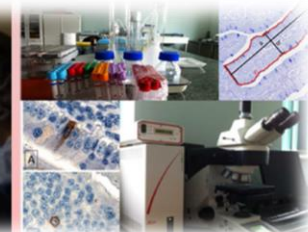
**Aeroborne laser scanning - new methods for Forest Inventory**



## Faculty of Veterinary Medicine



- **Veterinary medicine**
- **Food hygiene**



## Faculty of Engineering

### Engineering Science areas

- Automobile transport
- Agricultural machinery
- Agricultural energetics



### Pedagogy areas

- Home environment in education
- Teacher of professional education
- Pedagogy
- Career consultant

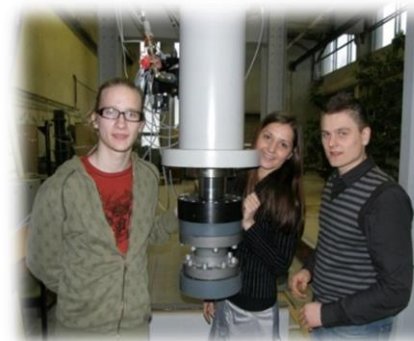
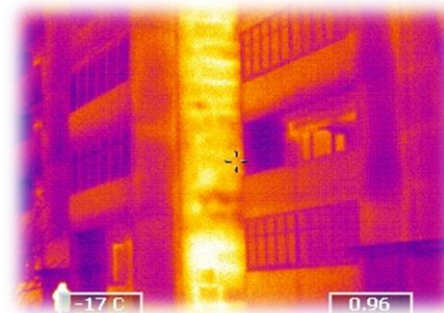






## Faculty of ENVIRONMENT AND CIVIL Engineering

- Environmental engineering and water management
- Land use planning
- Civil engineering
- Landscape architecture
- Environmental science



## Faculty of Economics and Social Development



- Economics
- Public administration
- Project management
- Business management
- Finance and credit
- External relations of organizations
- Regional development and management
- Marketing and agrarian economics
- Accounting and accounting theory
- Sociology of organizations and public administration
- Accountancy, control and analysis of business functions

## Faculty of Information Technologies



- Programming
- Information technologies
- Computer control and computer science







## Faculty of Agriculture

- Horticulture
- Crop Cultivation
- Animal Husbandry
- Entrepreneurship in Agriculture



## Faculty of Food Technology

- Food technology
- Food science
- Hotel and restaurant management

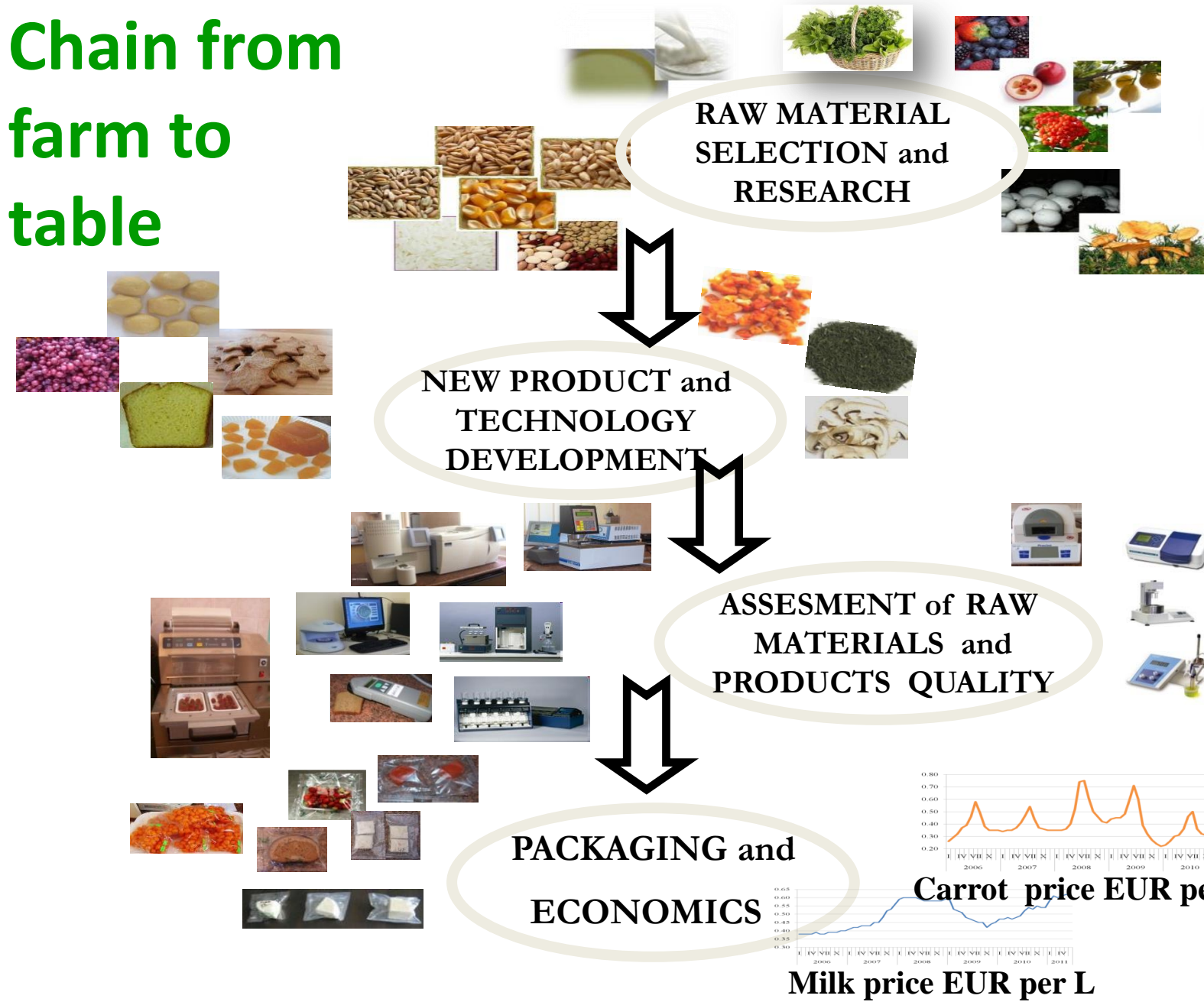


## Research fields

- New products from the raw materials of plant and animal origin, their production technologies and nutrition
- The studies of nutrients
- Food safety and risk management in catering enterprises
- The study of biologically active compounds in agricultural origin and food raw materials and products
- The study of food packaging solutions



# Chain from farm to table



**Carrot price EUR per kg**



**Milk price EUR per L**



## Material technical base

Latvia University of Agriculture  
*Education. Science. Culture*

# Study and research centre of Faculty of Food Technology

**E**ntrepreneurs are interested to make successful cooperation with scientists in new product implementation.

**I**n the new building are located small pilot units and laboratories with modern manufacturing facilities.







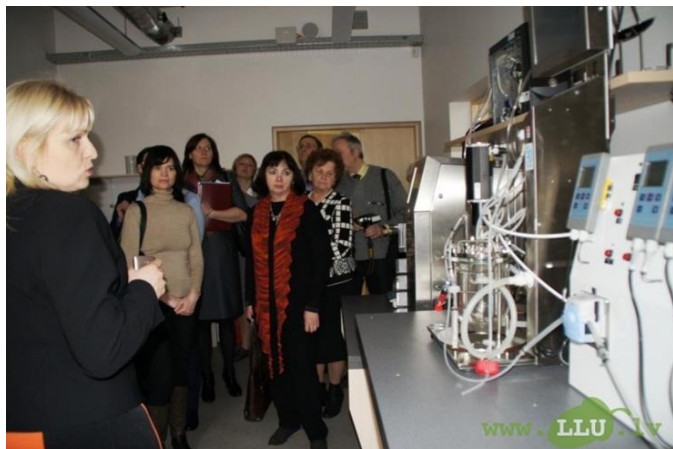
## Food processing pilot laboratories

- **Milk product technology**
- **Meat product technology**
- **Fermented beverage technology**
- **Fruit and vegetable processing**
- **Bread technology**



# Material technical base

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# Material technical base

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Laboratory  
of Sensory  
Evaluation



Microbiology  
Scientific  
Laboratory





# Packaging Material Property Testing Laboratory

## Packaging materials and technologies

- ✓ Use of various packaging materials (conventional and biodegradable) for foods (bread, meat, herbs, berries, fruits and vegetables);
- ✓ Selection of the most suitable food packaging technology (MAP, EMAP, Active and Intelligent packaging (oxygen scavengers, moisture absorbers etc.).



Conception of  
packaging –  
ability to elongate  
food products  
storage time

## Actual topic / question / problem







## Research areas for Faculty of Food Technology

Processing technology and nutritional value of new and improved products from both plant and animal origin.

Suitability of non-traditional raw materials for processing.

Food safety and risk assesment.

Bioactive substances in raw materials and products.

Sensory evaluation of food products

Application of new packaging materials and technologies in food processing.



# Collaboration with enterprises

Desire to develop new products with additional value

Consulting

- Possible use of available raw materials,
- Technologies necessary for production,
- Receptions

Time saving

Financial support





# Collaboration with enterprises

Selection of raw materials

Testing

Recepies

**New product prototype**

- Production parameters,
- Analysis of physical, chemical, microbiological parameters,
- Sensory evaluation of new products

Selection of appriopriate packaging

**Determination of optimal shelf life of products**

- Analysis of physical, chemical, microbiological parameters,
- Sensory evaluation of products

**THE PLACE FOR YOUR ORDER**

Offering research findings and scientific competence of the LLU researchers



**LLU TPK**  
**“Technology and Knowledge Transfer Office”**

**Protection of intellectual property of LLU**

**Cooperation with incubators:**

- Zemgale;
- Vidzeme;
- Kurzeme.

**Cooperation with:**

- Entrepreneurs
- Centres of other universities
- Jelgava City Council
- Jelgava Municipality Council
- Zemgale Planning region

**Maintenance of Data Basis**

**Organizing and participation:**

- seminars
- conferences

- Commercialization of the LLU research results
- Technology transfer

Consulting producers and research

**Since 2006** Technology and Knowledge Transfer Office is established in Latvia University of Agriculture in order to promote developed research results and innovations into the market and to foster cooperation between research, innovations and entrepreneurs.

The activities of the Centre is co-financed by European Regional Development Fund (Agreement No L-TPK-08-0007) and it gives the opportunity for introduction of research results in industry making significant contribution to networking and cooperation in local and international scale.

# Models of coopertions

Contracts between:

- scientists and entrepreneurs;
- scientists, entrepreneurs and incubators;
- scientists and associations;
- scientists and authorities;

Projects;

Courses;

Educational seminars;

etc. forms of cooperation.







# Some success stories

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## BIO VEGETABLE PUREE FOR BABIES «RÜDOLFS»

Ltd «Lat Eko Food»

LLU / LVAI



Development of idea and technology, products establishment

Company joining in the incubator

JIC Business Incubator

LLU, Lat Eko Food un JIC cooperation

### PRODUCT AWARDS

- "Gold Medal" for excellent quality
- "Latvian eco-product 2012"
- "The most significant Latvian scientific achievements in 2014" Latvian Academy of Sciences Award

Products in the market



## Apple and pear chips "Garden Snack"

Ltd "Garden Snack"

Ltd. "GardenSnack" produced apple and pear chips, a technological solution and recipes evolved in collaboration with the researchers of LLU Faculty of Food Technology.



- Developed chips consumers impresses with crispness and flavor of diversity as well as the fact that the cooking process does not use oil or other fatty. Developed snacks are most naturally.
- The new product range includes chips, enriched with pumpkin and sesame seeds, cocoa, cheese and chilli flavor, as well as almonds, sunflower seeds, walnuts and ginger.



# Some success stories

Latvia University of Agriculture  
Education. Science. Culture



## Grain Flakes MILZU! Ltd. "MILZU!"

Ltd. MILZU! produces extruded grain flakes which are designed in collaboration with the researchers of LLU Faculty of Food Technology.

In the production process of the product high quality wholegrains are used – wheat, rye, oats – grains which are characteristic to the Baltic region. As a result MILZU! products contains more fibre, vitamins and minerals.

### Major awards:

- Latvian Academy of Sciences Award: "**Latvian science achievement in 2015 for practical applications.**"
- 1st place in the nomination "**Import Substitute 2015**" LIAA and EM competition organized by the "**Export and Innovatuon prize**"
- 1st place in the nomination "**The trademark of Latvia 2014**" Latvian Patent Office and the Latvian Chamber of Commerce created by competition "**Mark 2014**".
- 1st place in the category "**Commercial packaging of food products in 2015**" "Latvian Packing Association organized contest.





## Some success stories

Latvia University of Agriculture  
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## Chewing bee bread pastilles Ltd. "Bee Bite"



Ltd. "Bee Bee" in cooperation with the scientists of LLU Faculty of Food Technology have developed a **solution for ease of bee bread use – creating pastilles**, packed in individual portion packs, which placed in doypack (suitable for long-term storage).

Bee bread (ambrosia) is a natural product made with the world's largest biologically active substances in the quantity and diversity. Bee bread consists of 240 biologically active substances that are necessary for normal functioning of the human body, but its use is inconvenient, that is why we've created this new solution for product presentation.

## NATURAL HEALTHY DRINK FROM PLANTS

### SIA "Dabas Dots"



- Consist of three natural products - tea, berry juice and natural sweetener (honey etc.)
- Unique concept (tea+juice) with different tastes: camomile, mint, aronia etc.

## DIETETIC FOOD PRODUCTS FROM NATURAL INGREDIENTS FOR PERSONS WITH HEALTH PROBLEMS

### SIA «KEEFA»



- Products for enthal food – novelty in international level
- Additionally new formulas for persons during health regaining period, athlete and for those eating healthy food



## Legume product «PUPUCHI»

SIA “Zekants”



- Traditional Latvian plant - broad beans - not popular nowadays
- New product high in proteins and fibres - snack «Pupuchi».

## New generation healthy peas snack – PEAS KRIPPU

- ❖ Snack – peas crackers KRIPPU – healthy, crispy
  - high in proteins: 25-27%\*.
  - high in fibres and rich in mineral substances.
  - NO allergens, food additives, colourants etc.



## Processed Vegetable Products Ltd. "Paplāte Nr.1 ", Ltd. "Nissi"



**The products ( Ready-to-eat) are produced using a specific technology – peeled and cut vegetables are steamed in their juice in the vacuum packaging.**

The advantage of the technology includes preserving the vegetable quality, taste and intensity of the colour, as well as comparatively long expiry date of the product which is until 180 days in room temperature.

All the products are produced from vegetables grown by Latvian farmers without E-substances, keeping healthy qualities of products.





## Cereal Mixes “Musli Graci” «Felici», Ltd.



**“Felici”, Ltd produces cereal mixes GRACI which is rich in nutrients.**

The composition of muesli “Graci” is unique because it contains not only usual muesli ingredients, but also triticale, hulless barley, spelt, linseed, black currants, pumpkins and artichokes.

The processing of ingredients is unique making the product very valuable – muesli contains sprouted and chopped whole grain, rolled and micronized whole grain, as well as dried and cut fruit.

## Cheese balls «ARCHEE»

«VZM» Ltd.



- Natural
- Healthy
- Crunchy
- Tasty







**International exhibitions:**  
Riga;  
Tartu;  
Dublin;  
Istanbul;  
Etc.





Scientist

Local Government



Producer



**Thank you for  
attention!**

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