“Comparison of lamb carcass and meat quality of breeds in Western Balkan and Norway achieving improved palatability, sale and sustainability “

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Participating Institutions

Leading institutions:
- Norwegian University of Life Sciences/UMB
- Department of Chemistry, Biotechnology and food Science (IKBM)
- Animalia – Norwegian Meat & Poultry Research Centre
- NORTURA - Norway

Cooperating institutions in Western Balkans:
- Bosnia & Herzegovina:
  University of Banja Luka, Faculty of Agriculture
- Montenegro:
  University of Montenegro, Biotechnical Faculty
- Republic of Macedonia:
  Saints Cyril and Methodius University of Skopje
  Faculty of Agricultural Science and Food
Project aims

- To describe meat and meat products of Pramenka breed from WB
- To improve dried/cured products from sheep meat in BiH
- To get persons who are trained and certificated classificators for sheep and lamb carcass
- To transfer knowledge from Norwegian meat industry in BiH meat industry regarding sheep dried/cured meat products
- To transfer knowledge from UMB to WB Universities relate to curriculum development in meat technology and meat quality control
Activities 2013

• Classification
• Education of the students
• Article publishing
• Presentation at ICoMST 2013 (Izmir)
• New syllabus at WB Universities
• Transfer of knowledge in the field of dry/cured meats to WB
• Special properties of local Pramenka sheep
Training for classification of lamb carcass
Activities 2013 - Classification

- Classification of sheep/lambs (implementation of SEUROPE standard)
- Education of the first certified classifiers in WB
  - The candidates have passed the practical part of the exam
  - 2 of the candidates are now in training at Norwegian meat industries
  - The writing part of the exam remains
Education of the students

• PhD student continues her education according to the curriculum

• Master candidate from WB:
  ❖ Master Candidate from B & H has completed his thesis on the topic "Classification, texture and color of meat lamb carcasses of different genotypes" - the task is accepted.
  ❖ Master candidate from MN has worked with lamb meat quality during the summer, and will submit the thesis in the school year of 2013/2014.
  ❖ A new master student is coming from B&H and will be working with cured meats.
Publishing of the articles

Article published:

“Determination of the myoglobin states in ground beef using non-invasive reflectance spectrometry and multivariate regression analysis” (Meat Science)
• Under writing:
  “Sheep meat quality of meat from different breeds and different grazing regions“
  
  "Comparison of dry cured sheep hams from Pramenka breed of Western Balkan“

Information note about PAHs in local cured meats
Presentation of the project results: ICoMST 2013 Izmir

“Comparison of Meat and Quality Characteristics Between Norwegian White Sheep and Western Balkan Pramenka Sheep”
Announcement of activities in the immediate future

- 15th and 16th November at the congress to be held on the 50th anniversary of the establishment of the Faculty of Technology in Banja Luka, we will have a presentation of two scientific papers which result from this project. Professor Bjorg Egelansdal will give a lecture on the latest research, which we will remember the color of meat and transfer of knowledge in the field of colleagues from the University and the people of the meat industry.

All are welcome to our celebration!
• “Classification of sheep and lamb carcasses by the SEUROP system and the current state of the classification system in BiH”
• Determination the difference in the quality of meat and quality characteristics between Norwegian White Sheep and Western Balkan Pramenka sheep
• Recent achievements in meat color
Are there specific phenotypic characteristics with Pramenka sheep?  
(reference is Norwegian White Sheep)

This is the first work to document what kind of meat quality Pramenka-breed may have

- We consider:
- Tenderness
- Color Stability
- Vitamin E content:
- Antioxidative properties (DPPH) and Oxidation
- Aroma (volatile kompoenter, not finished)
- Sensory (not finished, is now in Novi Sad, collaborate)

Conclusion (for now)

We'll find properties that make these two breeds (Norwegian breed, WB breed) identify with different quality profiles

Considering follow-up with genetic analysis (working with IHA)
A challenge that challenges MNs animals vary greatly
New curriculum introduced at WB Universities through the project

- Curriculum Development (status)
- Enhanced
  - **Macedonia**
- Awaiting info
  - **Bosnia and Herzegovina**
- "The biological basis for livestock production" and "Sheep and goat breeding"
- **Montenegro**
- Rating Scale for sheep farming is included in the curriculum for the subjects: "Technology of meat processing", "Cattle breeding" and "Sheep breeding"
- New courses have been established at the MN University
  - "Biotechnology in husbandry"
Transfer of knowledge about dry/cured meats to WB

- The project visited the Food Fair in Budva (MN) with sensory judgments (Norway Championships), with Ola Stuberg from Norway (ABCorneliussen)
- Product degustation
- Discussion about the product quality with manufacturers
- A lot of smoke flavor (adapted for MN market but a little different from other European markets) (should be retained but not exceed the PAH limit)
- Varied salt content in products (should be reduced)

- Making a brochure that provides advice
- TRANSLATE Norwegian rules for quality improvement through competition (Norway Championships in meat products)
- Next year a fair is planned together with the meat companies
- Quality improvement (recommendations in terms of product quality improvement and upgrading of production).
Media

Radio of Montenegro: Ola Stuberg, AB Corneliusen
"Ordinary session focused on agriculture and rural development"
Desires of the Western Balkans

- Cattle classification (want to get trained personnel also in this)
- Hygiene Package development (such as Norway has)

- Genetic characterization of breeds: get follow up work on the link between phenotypic benefits and genetics
Thank you for your attention!