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**TRADITIONAL FOOD NETWORK TO IMPROVE THE
TRANSFER OF KNOWLEDGE FOR INNOVATION**

1st MSW WP8 Novi Sad

WP2 Grains

From TWSs towards SRIA



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1. TWSs



Seven TWSs organized (2015)

- 12-05 Wageningen (NBC, NL): ‘The story of special grains’
- 14/15-05 Cork (UCC, IE): ‘Creating value in wheat- and gluten-free based bakery production chain’
- 03/04-06 Maribor (UL, SL): ‘Buckwheat between tradition and innovation’
- 22-06 Bad Boll (SEC, D): ‘Tradition and innovation in the bakery sector’
- 13-10 Wageningen (NBC, NL): ‘Sourdough Workshop with ancient grains’
- 10/11-11 Stuttgart (SEZ + Württemb. Bäckerhandw. D): ‘Baking with ancient grains’
- 19-11 Montpellier (INRA, F): ‘Durum wheat – Innovation to serve tradition’

12-05 Wageningen (NBC, NL): 'The story of special grains'

- The issues (110 participants)
 - Biodiversity and taste diversity
 - Spelt, einkorn, emmer, durum, oats, teff, millet, amaranth, buckwheat, quinoa
 - Whole grain and health
 - Agricultural demands
 - Low input; sowing-seed quality (reduction of weed seed content); separated production chain; suitable cultivation area
 - Traceability and local mills
 - Changing consumer's appreciation
 - New production chains and new markets

14/15-05 Cork (UCC, IE): 'Creating value in wheat and gluten-free based bakery production chain'

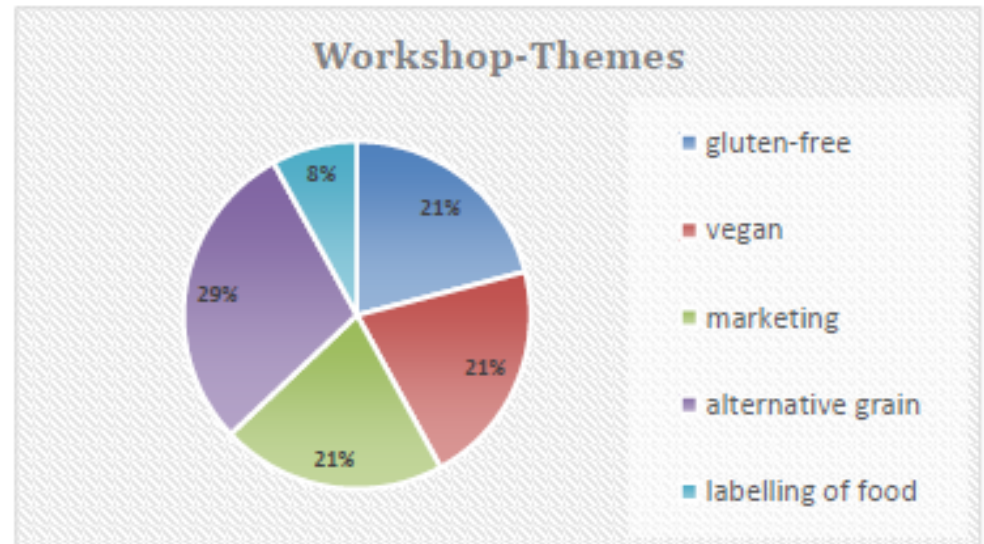
- The issues (~150 participants)
 - Consumer behaviour
 - Milling and baking trends
 - Yeast fermentation and sourdough technology; mycotoxin analysis
 - Salt reduction
 - Sensory
 - Gluten-free
 - Market trends; diversity in raw materials; sourdough; starches; regulations; management of traditional SMEs

03/04-06 Maribor (UL, SL): 'Buckwheat between tradition and innovation'

- The issues
 - Theoretical workshop (6 sessions) (90 participants)
 - Cultivation, and usage of grains and green mass
 - Technology
 - Nutrition and health
 - Tradition and certification of grain products
 - Practical solutions
 - Good practice in product development
 - Practical workshop (12 participants)
 - Bread
 - Pastry
 - New collaboration established between Universities, Research Centers and Companies

22-06 Bad Boll (SEC, G): 'Tradition and innovation in the bakery sector'

- The issues (80 participants)
 - Gluten-free
 - Vegan
 - Marketing
 - Alternative grains
 - Food labelling



13-10 Wageningen (NBC, NL): 'Sourdough Workshop with ancient grains'

- The issues (20 participants)
 - Practical workshop to SMEs
 - Emmer, spelt, common wheat
 - Specific characteristics in sourdough and baking
 - Practical sourdough process details and baking technologies

10/11-11 Stuttgart (SEZ + Württemb. Bäckerhandw., D): 'Baking with ancient grains'

- The issues
 - Practical workshop to SMEs
 - Introduction to various ancient grains
 - Dough processing and baking technologies
 - Marketing products from ancient grains
 - Marketing products from gluten-free grains

19-11 Montpellier (INRA, F): 'Durum wheat – Innovation to serve tradition'

- The issues (training subjects)
 - Quality, food safety and regulations
 - Packaging innovations, functionalities and costs
 - Raw material knowledge
 - Marketing, labelling and consumer science
 - Transformation processes (GMO) and eco-conception

2. Resulting issues from TWSs



Common/relevant issues from TWSs

- Increasing biodiversity with ancient grains
- Whole grain and health
- Agricultural demands; cultivation
- Traceability; authenticity
- Adaptations of dough and baking technologies
- Salt
- Sensory and taste
- Production chain separation (grain-specific; gluten-free)
- Product marketing; packaging
- Management of traditional SMEs
- Consumer's behaviour/appreciation
- Regulations
- GMO

3. From IoNs and MSWs/TWSs towards SRIA



Towards SRIA: SEZ (G)

- Research topics
 - Substitution of additives / allergens by natural compounds (clean label)
 - Prolongation of shelf-life through new natural bioactive ingredients/processing
 - Vegan pastries –how to substitute non-vegan ingredients by keeping taste and texture
 - Rapid sensor-based analytical method for on-site proof of authentication of varieties – transparency in securing quality, purity and authenticity
 - Traceability of grains by improved exchange of data between different stakeholders in the value chain
- Innovation topics
 - Ancient grains as new resources for the baking sector – challenge for processing and marketing
 - Gluten-free cereals as new resources for baking and pasta sector – challenge for processing and marketing
 - New marketing concepts for traditional bakeries using social media

Towards SRIA: UCC (IE)

- Investigation of alternative gluten-free grains
 - Regarding low carbon and water footprint (local)
 - Regarding high nutritional value and functional activities (active peptides)
- Minimal processing of food products(clean label; friendly label)
- Natural solution for improving shelf-life of product
- Fundamental understanding of the mutual interaction of gluten-free ingredients in complex formulations (recipes)
- Batch-to-batch consistency – improvement of standardised procedures
- Improvement of food waste management

Towards SRIA: IAR&FR PAS (P)

- Connection of innovation and tradition in the bakery sector between Poland and Germany
- Application of buckwheat in innovative bakery products with healthy properties for the population living in NE Poland (Warmia - Mazury)

Towards SRIA: INRA (F) (1)

- Expected innovations of SME's interest in durum wheat (rating [5 = max])
 - New food products (4.0)
 - Optimizing protein potential (3.9)
 - Improvement nutritional and preservation properties of end-products (3.9)
 - Set-up of grain quality indicators (3.8)
 - New communication strategies (3.8)
 - Innovative packaging (3.6)
 - New short supply chain system (3.6)
 - Innovative crop management techniques (3.6)
 - New durum wheat varieties (3.5)
 - Lowering energy consumption of transformation equipments (3.5)

Towards SRIA: INRA (F) (2)

- Eco-efficient and sustainable production and transformation of durum wheat
 - varieties; cropping systems; N-fertiliser; ‘eco-concept’ into action; valorisation co- and by-products
- Attractive traditional products adapted to consumer’s expectations
 - New processes; traditional processes and nutritional/health value; marketing and quality management to traditional SMEs
- Increase competitiveness and economic profit to SMEs
 - New business models and marketing strategies; labelling and brands; logistics
- Regulations
 - For fair competition with multinationals and retail; understanding; documents regarding EU laws
- R&D
 - Support in establishment of PPPs

Towards SRIA: UL (SL)

- Enhancement of business marketing, and increase of sales and margin
- Certification of origin
- Improvement of labelling
- Practical/technological knowledge transfer

Towards SRIA: NBC & DLO (NL)

- Quality assurance of source materials (authentication)
 - Spelt; other wheat species and specific varieties
 - Mycotoxin management in ancient wheat species and varieties
- Fermentation types: legal definitions for processes and products
- Establishment of a broker function
 - Coordination of supply and demand through database management of source materials
 - Development of ICT tool
 - Online info regarding packaging (material) and labelling (according to EU legislation)
- Nutritional benefits of sourdough products (spelt, wheat varieties)
 - Effects on intestinal microflora; development of physiological markers (blood analyses)
- Elaboration of example case study
 - Bakery Society / Bakery Institute: on TWS 29-06-2016 in Warsaw, Poland

Common/relevant issues for SRIA

Provisional inventory of issues, collected from WP2 partners *preceding* the Athens meeting (2015):

- Alternative/traditional grains and ingredients (incl. gluten-free)
 - Authentication and grain quality (certifications)
 - Production chain management (incl. cultivation requirements)
 - Mycotoxins in traditional grains
 - Batch-to-batch inconsistency
- Source materials
- Vegan and substitution of ingredients
 - Processing and (intestinal) health
 - Processing and legal definitions (e.g. sourdough bread)
 - Co-ordination of supply and demand of source materials (ICT/database)
 - Shelf life
- Processing
- Packaging and labelling
 - Marketing and social media (communication; story telling)
 - Food waste management
 - Sustainable production
- Products
- Management of (individual) SMEs
 - R&D support to SMEs (knowledge transfer)
 - Consumer's attitude
 - International cooperation
 - Regulations
- Market and marketing

Plans for 2016

- Prioritising Needs for SRIA according to
 - Source materials
 - Processing
 - Products
 - Market and marketing
- Elaboration of SRIA during
 - Transnational Workshops
 - Netherlands (NBC) June: Sourdough and traditional wheat species
 - Germany (SEZ) July: Sourdough and traditional wheat species
 - Poland (PAN) June: Buckwheat – Oats – Gluten-free
 - Cooperation and communication
 - TRADEIT (e-magazine)
 - AO ECS (local gluten-free TWSs)
 - Actions towards EU

Lists of Needs for WP2 TWSs (Spring 2016)

- The Lists of Needs, composed during and after the Athens meeting and arranged according to Source materials – Processing – Products – Market and marketing, will be guiding WP2 towards the final SRIA, to be composed during the various TWSs in Poland, Germany, France and The Netherlands, and to be finalised in the SRIA-meeting in August.
- These lists include for now:

1. Primary production	Punctuation
1.1 Breeding: new technologies, new varieties, rehabilitation of ancient grains and varieties, use of participatory breeding methods (for both organic and conventional productions)	
1.2 Alternative cropping systems (mixed crops, agroforestry, etc.) based on energy and input saving	
1.3 Optimizing cultivation management of abiotic stresses (such as water & nitrogen use efficiency) and biotic stresses (such as use of crop protection agents & plant resistances)	
1.4 Improvement of batch to batch consistency regarding grain quality (different harvests: year to year, different cultivation areas) combined with development of rapid analytical methods to measure a set of indicators and guarantee same grains quality	
1.5 Authenticity/Authentication/Certification for the different grain species and for gluten free grains and products combined with development of rapid analytical methods to measure a set of indicators and guarantee same grains quality, incl. on-site proof systems	
1.6 Measuring and lowering residues in grains: pesticides, levels of mycotoxins, alkaloids & toxic residues (potential problem in traditional grains)	
1.7 Optimization of wheat protein potential (e.g. for pasta or bread products)	

2. Processing (technology, energy, etc.)	Punctuation
2.1 Rapid analytical methods for authentication of varieties (raw materials; sensor-based, on-site proof)	
2.2 Lowering the energy consumption of machinery and processes (by the use of novel sensors and modelling)	
2.3 Natural prolongation (without additives) of shelf-life through new processing methods (for bread, fresh pasta, gluten-free products, etc.)	
2.4 Prevention of cross-contamination gluten-free bakery/pasta products	
2.5 Improvement of milling processes for food safety and higher environmental, functional, nutritional and sensorial quality of flour or semolina	
2.6 Improvement of extrusion and drying processes for pasta with higher environmental, functional, nutritional and sensorial quality	
2.7 Guidelines for sourdough long-term fermentation and control of fermentation with clear parameters	
2.8 Malting: establishing a small-scale malting facility for minor grains	
2.9 New resources and processing technologies for gluten-free products	
2.10 Fundamental understanding of gluten-free ingredients and their interactions in a complex formulation (in a traditional product incl. sourdough bread)	
2.11 Fundamental understanding of the durum wheat-legumes interaction in pasta products	
2.12 Improving processes so as to avoid technical enzymes & additives in the bakery sector	
2.13 New processes and concepts for the co- & by-product valorisation (hulls, straw, etc.) and the processing-waste management	

3. Product (labelling, packaging, health/food safety, etc.)	Punctuation
3.1 Traceability - Rapid analytical methods to guarantee consistent end-product quality (incl. authenticity of ingredients)	
3.2 Natural prolongation (without additives) of shelf-life through improved natural/organic/"clean label" ingredients or processes (for bread, fresh pasta, gluten-free products, etc.)	
3.3 Further studies to quantify the influence of traditional recipes and processing on nutritional and health quality of end-products	
3.4 Availability of information/advice regarding packaging (material, providers) and labelling (online info shop)	
3.5 Innovative packaging for longer shelf life (fresh products) and for higher attractiveness of traditional products	
3.6 New quality marks/labels for local/regional and traditional production and processing methods	
3.7 Novel studies and research for the development of new products (bakery and pasta sectors) based on ancient grains, durum wheat, buckwheat and other grains to meet novel consumers' expectations (health improvement, good taste, convenience, etc.)	
3.8 Guaranteed labelling of gluten-free products according to gluten-free legal regulations	
3.9 Technical improvements of gluten free-products (taste, nutritional value by test panels, shelf life and adaptation of bakery facilities)	
3.10 Vegan pastries - how to substitute non vegan ingredients	



4. Business (marketing, organization, consumers, regulations, etc.)	Punctuation
4.1 Development of (local, national) databases, to link input from suppliers (about grain variety, availability, price etc.) with demands from companies	
4.2 Improve information flow within food supply chain regarding possible contaminants (chemical residues, gluten etc.)	
4.3 Story telling as marketing tool (incl. use of social media, informed shop staff)	
4.4 Development of recommendations for novel marketing strategies for small-scale or regional products	
4.5 Support towards SMEs regarding R&D and new processes (technological platforms, on-site advices, seminars, training workshops, etc.)	
4.6 Alternative distribution channels and supply chains to increase SMEs competitiveness (coordination of production chain regarding logistics, shared online shopping systems, etc.)	
4.7 Support towards SMEs regarding compliance with national and European regulations	
4.8 Connection & international cooperation on cereals (exchange of products and knowledge)	
4.9 Legal regulation on sourdough, authentic bread production: recipes, formulation, processing	
4.10 Legal regulation of product composition regarding ingredients: authenticity of grain species and varieties	
4.11 Improving knowledge of SMEs regarding safety and handling, and taste and nutritional value of gluten-free products	
4.12 Marketing concepts for the co- & by-product valorisation (hulls, straw, etc.) and the processing-waste management	



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Thanks for your
attention