Quality Control Laboratory of Cereals and Bakery Products

OBJECTIVES

Taking into consideration that cereal products provide over 50% of humankind's food sources, the research carried out in the Quality Control Laboratory of Cereals and Bakery Products aims to find new ways of superior development as regards raw materials, that may allow both production of food ranges adapted to local specific features and to consumer's taste, and providing superior quality from the point of view of its innocuousness. Also, through our activities we want to insure human resources training, which are able to guarantee safety and quality of end products by applying the modern biotechnologies associated with the new faster analyzing methods.

ACTIVITIES

- Analyses of local crops quality
- Measurement of flours' tenacity, extensibility, elasticity and baking strength
- Determination of moisture absorption capacity of flour of a given consistency
- Selection and improvement of flour plastic quality
- Monitoring dough tolerance and weakening during the kneading process
- Measurement of α-amylases in flours
- Monitoring the relationship between rheological properties and micro structural characteristics of dough

MAIN EQUIPMENT

Stereomicroscope

Falling Number Perten

Alveoconsistograph Chopin

MAIN THEMATICS

- **Research concerning higher capitalization of local vegetable resources to get some products with functional food materials role.** Due to the main humankind concerns regarding the increase of population health state in general and obesity control in particular, the development of some cereal and pseudo-cereal processing technologies becomes of fundamental importance.

- **Research regarding the influence of different types of α-amylases on quality of bread.** Our objectives were to study the effects of α-amylase addition on dough and bread attributes and to relate these performance differences to amylolytic mechanisms and to differences between types of amylolytic sources (malt, fungal and bacterial), and, also to see if we could obtain a significant increasing in the area of shelf life extension.

- **Evaluation of Mycotoxins impacts on the processing industry** The agro-food products are excellent culture media for different molds. These fungi produce mycotoxins that have been found to be highly toxic and carcinogenic for humans and cattle. Even at very low concentrations, chronic effects can occur such as the reduction of fertility and of immune-resistance. Practical strategies to eliminate these mycotoxins from feed and food are required, although some progress is being made at level of individual compound or group of compounds.

- **THE LABORATORY**

Head of the research team:
Associate professor PhD Gabriela POP
Phone: 0230/216147 int.289
e-mail: gabipop@usv.ro

Members:
Lecturer PhD Silvia MIRONEASA
Assistant eng. Georgiana CODINA

Scientific production 2005-2007: 8 publications, 2 books, 2 researches grants with local producers

Main collaborations: Laboratory of Enzymes et Derivates Romania, Institute of Food Bioresources Romania, Kansas State University, U.S.A., The College of Agriculture and Life Sciences, Iowa State University of Science and Technology, Iowa, USA, Escola Superior de Biotecnologia, Porto, Portugal, Technical University of Moldavia

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