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BOOK OF ABSTRACTS



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PREFACE

A Word from the Editor

Agriculture has played a key role in the development of human civilization. Agriculture is also central in the current debate on sustainable development. In fact, agriculture development is essential for the achievement of many Sustainable Development Goals (SDGs) in the context of the 2030 Agenda for Sustainable Development.

Development and diffusion of agricultural techniques in the last century (cf. Green revolution) has steadily increased agricultural productivity with positive impacts in terms of food security and rural development. A remarkable shift in agricultural practices – and consequently agricultural/farming systems as well as food systems – has occurred in response to introduction of new technologies. The last century has seen the intensification, concentration and specialization of agriculture; agriculture increasingly depends on new technologies and inputs such as chemicals (e.g. fertilizers, pesticides), mechanization, irrigation and plant breeding (hybrids and GMOs).

The agricultural sector is called nowadays to adapt to climate change while increasing efficiency and reducing negative externalities (e.g. water pollution). Therefore, there is a transition towards sustainability in agriculture to address concerns related to socio-economic justice, resources conservation, environment protection, etc. Science and innovation are crucial to address these new sustainability challenges. Recent trends would indicate that the incorporation of scientific knowledge (e.g. principles of ecosystem management and agro-ecology) into farming practices can enhance productivity and allow achieving ‘sustainable intensification’ in all agriculture subsectors (crop production, animal production, forestry, fisheries).

In your hands is the Book of Abstracts of the 9th International Scientific Agricultural Symposium "AGROSYM 2018", which I hope you will find useful in your research, education and professional activities. Symposium themes cover all branches of agriculture and are divided into seven sections: 1) Plant production, 2) Plant protection and food safety, 3) Organic agriculture, 4) Environmental protection and natural resources management, 5) Animal Husbandry, 6) Rural Development and Agro-economy, and 7) Forestry and agroforestry.

The aim of AGROSYM 2018 is to make an important contribution to agriculture science and practice in the Balkan region and beyond. This Book of Abstracts encompasses 1206 contributions from about 1200 participants representing 85 countries. Full texts of the submitted communications will be available in electronic form (CD and web: <http://agrosym.ues.rs.ba>).

AGROSYM 2018 was made possible through the commitment and contributions of a wide range of partners and sponsors. Many thanks to all the authors, reviewers and colleagues for their help in editing this Book of Abstracts. Special thanks go to all co-organizers for their unselfish collaboration and comprehensive support.

East Sarajevo, 1st October 2018

Prof. Dušan Kovačević, PhD

Editor in Chief



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¹Centro de Investigação de Montanha (CIMO), Instituto Politécnico de Bragança, Bragança, Portugal

²TecPan- Tecnologia e Produtos para Pastelaria e Panificação, Lda. Rua D, 28, Zona Industrial, 5370-565 Mirandela, Portugal

*Corresponding author: amilcar@ipb.pt

Abstract

Given that some intolerance and allergic reactions have been associated with the consumption of artificial additives, in recent decades consumers have been choosing to ingest food containing natural alternatives [1,2]. The present work presents some preliminary results regarding the incorporation of natural colorants in products of the pastry industry. The juices of different natural matrices namely beet, blackberry and cherry were incorporated into a pastry product (at TecPan Lda.). The samples were divided into small sets, to evaluate the nutritional value, the microbial load and the parameters of color and pH over time. Here, we present the results of the first three months of storage of the pastry products. The values obtained were compared with control samples (without any natural/artificial colorant) and with products incorporated with an artificial colorant used by the company. Moreover, the products were stored, exposed and protected from light, in order to verify the stability of the additives, and the results were compared. The nutritional value of the samples remained practically unchanged over time, and no changes were observed regarding the microbial load of the samples. However, some variations were observed in the pH and color values. The products prepared with berry juices tended to present the highest pH values. Regarding the color parameter, products prepared without any coloring agent showed the highest L^* values, whilst those prepared with the artificial colorant were less bright. In what regards a^* , as expected, control products presented the lowest value. Concerning b^* , the minimum values were registered in products prepared with the artificial colorant, and the maximum ones observed in control samples. Overall, the storage time did not induce any significant change in any case, and the results obtained from stored samples protected from light and exposed to light were very similar.

Keywords: *Natural food additives, pastry industry, incorporation of natural ingredients.*

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