AGRARIAN POLICY MINISTRY
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INSTITUTE OF EUROPEAN INTEGRATION

ECOTROPHOLOGY. ASPECTS OF FOOD SECURITY AND FOOD SAFETY

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Approaches to supplying of population by safe and qualitative foodstuff and solving problems of optimal human nutrition are represented in the proceeding. Aspects of State food security, ways of food production ecologization, improvement of research methods of foodstuff were established. New approaches to population health improvement and also education in the context of nutrition ecology are proposed. Ways of practical use of the ecotrophology achievements are discussed.

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tegrating the sciences of nutrition with holistic thinking makes it possible to proceed to a transdisciplinary concept.

With advances in epistemological approaches, in nutritional knowledge, in methodology, in computational tools, and in research strategies, we are now able to go beyond the research on parts to learn more about optimal nutrition.

Thus, to enhance level of national health the state policy in the field of population nutrition needs radical improvement in a way of adequate State legal system establishment to control food safety, public education reform and high level of nutritional culture for the people.

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THE BASEFOOD PROJECT: INVESTIGATIONS TOWARDS THE DEVELOPMENT OF TRADITIONAL FOODS CONCEPT IN UKRAINE

Traditional food products (TFP) are closely related to ethnic and cultural identity. Among the several attempt for the definition of this concept, some of them, more recently developed, are based on stronger scientific background than it happened in the past this really newly developed concept [1–3]. The classical works based on the great example of the healthy Mediterranean diet influence on human health provided a clear explanation about how and why we should sustain TFP [1, 2]. In such studies the evidence indicating that the traditional Greek Mediterranean diet is compatible with the European guidelines for a healthy diet has been presented, and the data concerning to the contribution to the beneficial health effects of Greek traditional foods have been summarised. Starting from a rather different approach, a consumer-based definition and general image of traditional foods in Europe was also currently published [3].

In this study interesting insights for future developments of TFP markets have been described. An overall positive perception and image structure of traditional foods was found across Europe (Belgium, France, Italy, Norway, Poland and Spain). By means of semantic and textual statistical analyses using the software ALCESTE the four main dimensions were identified for the concept of TFP: habit-natural, origin-locality, processing-elaboration and sensory properties,

and five dimensions emerged around the concept of innovation: novelty-change, variety, processing-technology, origin-ethnicity and convenience.

With respect to the health promoting properties of food, in relation to their content of so-called bioactive substances, a wealth of literature has been produced during the last twenty years. The rationalisation of this knowledge, aimed at its more read availability for potential users, is one of the goals of an internet-deployed databank system (EuroFIR BASIS). This is being developed to provide access to both compositional and biological activity data for bioactive substances with anticipated health beneficial effects present in food plants [4-7].

The databases includes: (i) unique combination of compositional and biological effects data, (ii) data linked to authoritative plant and plant part lists, (iii) comprehensive coverage of plant bioactives, (iv) use of the LanguaL food description system, (v) use of a systematic approach throughout, (vi) critical assessment and quality scoring of all data by expert evaluators, (vii) flexible, user-driven extraction and reporting functions. The databank system will become a valuable resource for food authorities and advisory bodies, for academics, and for scientists in the food industry. For example, it is expected that the EFSA Scientific Panels could make considerable use of the information for their work on health claims, novel foods, GM food plants, plant-based ingredients as food additives, contaminants.

Introduction to the BaSeFood project. BaSeFood is a FP7 small cooperation research program, launched on April 1st, 2009. The Consortium, coordinated by the University of Bologna, Italy, is made of 13 partners, from Italy (UNIBO, SPES-GEIE), UK (IFR), Portugal (INSA), Greece (HFF), Bulgaria (UFT), Romania (ASE), Serbia (IMR), Turkey (YEDITEPE), Ukraine (ONAFT and UzhNU), Russia (MSUFP) and Georgia (ELKANA). The overall aim of the project is to investigate traditional plant based foods of the Black Sea area, with an emphasis on those that are potential sources of health-promoting bioactive substances.

The basic fundamental concepts on which BaSeFood structure and activities have been developed can be summarised as follows: i) an increased concern, especially in Western, industrialised world, for chronic-degenerative diseases connected to non-optimal nutritional habits. Modern nutritional science is acquiring a deeper understanding of the mechanisms by which the assumption of certain food components may affect relevant human metabolic pathways and improve health status; ii) several plant components (bioactives) are presently being studied for their potential positive effects on human health.

Several thousands of scientific papers have been produced, even if sometimes resulting quite different one from the other in terms of approaches and methods; for this reason, it is still rather difficult to find a uniform answer to

the challenge of producing health claims in order to appropriately develop the food and health sector; iii) unifying approaches have been therefore taken, setting up international standards for database management and format for data acquisition, to which BaSeFood will refer; iv) the health promoting concept is considered a potent tool to add values to food and, as such, highly considered by the European Food industry; v) both the scientific approach to study bioactives and the industrial approach to produce R&D-based innovation are often led by technology or science push, not taking sufficiently into account the food chain perspective and the opinion of end users. This causes a high rate of failure in new products and scarce trust of people on science; vi) traditional food is often considered as a concentrate of positive traits, connected to several aspects of the production chain, including positive spontaneous relation with healthy properties.

In comparison to foods of other areas, such as Eastern Asia or the Mediterranean, Black Sea Area foods are still less known; vii) BaSeFood will contribute at studying bioactives of Black Sea Area traditional foods by means of rigorous analytical and biological assays, in the context of unifying methodologies and data acquisition, but also considering a vast array of characteristics of traditional foods and consumers issues, in order to put health claims in a favourable context to be properly understood by people and exploited by processing stakeholders.

Tasks for the Ukrainian partners. The work will focus on foods of plant origin or with a prominent plant ingredient. Foods from the following plant sources, and related bioactive components, are expected to be included: 1) cereals: dietary fibre, phenolics, phytosterols, phytochromanols; 2) vegetables: phenolics, glucosinolates, cysteine sulphoxides, carotenoids; 3) fruits, with special respect to minor fruits and berries: phenolics, carotenoids, dietary fibre; 4) oilseeds: essential or healthy fatty acids, phytosterols, phytochromanols; 5) herbs and spices: phenolics, terpenoids; 6) fermented foods and beverages: potentially all sources of bioactives, in dependence of the raw material, plus microbial metabolites; these foods are very typical of the Black sea area.

UzhNU is responsible of the microbiological characterisation of traditional foods. In the preliminary phase, UzhNU will document the main microbiological populations of the selected foods, both from a food safety and technology point of view. UzhNU and ONAFT (Prof. Sergey Fedosov and Prof. Leonid Kaprelyants) will also carry out determinations of key microorganisms for processing and for food safety purposes. UzhNU supposes to develop target studies starting from the background that the human immune system is most sensitive to «external environmental factors» and food antigens are among these. Their negative impact finally leads to the appearance of secondary im-

munosuppression or development of autoimmune reactions by means of malfunction of cytogenetic homeostasis.

The prevention of immune response disorders and secondary immunodeficiencies, together with the normalization of the host microflora may be considered as a means of reducing the risk of various diseases, including so called «civilization diseases» (gastrointestinal, cardiovascular, oncological).

UzhNU will study how gut flora is affected by the effect of some bioactives, and analyse the possible consequences of the control of cardiovascular disease. The final core part of the human addressed research will consist in two distinct intervention studies; one of them will be done in Transcarpathian Regional Cardio-Centre.

A group of healthy volunteers and patient with symptoms of cardiovascular disease will be submitted to diets with a number of selected traditional foods. Some clinical indicators of risk factors will be monitored during the experiments, according to the preliminary chosen methodology. Technological-chain effects on bioactives in traditional foods will be led by ONAFT. The flow chart of traditional food recipes will be critically assessed for applied unit operations and for their possible effect on the content of key bioactives. The effect of processing procedures on bioactives will be examined during critical steps of processing in real conditions.

The specific goal of this part of the project is interacting with stakeholders in order to obtain some high bioactives products, derived from traditional foods to consumers' attention, in order to evaluate their reaction, and will represent therefore a first step towards the application of some research results.

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THE CALIFORNIA PLATE METHOD EDUCATION INTERVENTION TO INCREASE FRUIT AND VEGETABLE CONSUMPTION IN LOW-INCOME INDIVIDUALS AND FAMILIES

Nutrition, Family and Consumer Science Advisors with the University of California Cooperative Extension Programs administer federally funded nutrition education programs designed to improve healthy eating behaviors in low-income individuals and families. Increasing fruit and vegetable consumption is often perceived as not possible by clientele due to accessibility barriers and perceived cost.

Over the past two years, California's Cooperative Extension nutrition education programs, FSNEP and EFNEP, have been adapting a new shared curriculum to provide essential information for low-income Californians. To augment this curriculum, NFCS advisors planned a brief supplement that would focus on adding a visual to enhance the material. Advisors identified the Plate Method, previously used primarily in diabetes control education, as a potentially effective way of enhancing the EFNEP/FSNEP nutrition education curriculum. The method uses a simple graphic of a dinner plate with portions of different foods placed on it to help promote a variety of foods and appropriate portions of different foods.

The new method termed The California Plate pilot study was coordinated with the roll out of the new EFNEP curriculum. Advisors developed the California Plate intervention curriculum that included posters, hand outs, a puzzle magnet, and activities to reinforce nutrition messages, helping participants understand the importance of increasing consumption of fruits and vegetables by trying to have half of their plate full of fruits and vegetables at each meal. A Visually Enhanced Food Behavior Checklist was used to collect data on fruit and vegetable consumption.