



**International Workshop on Food Safety
in a Sustainable Postharvest System of Agricultural Products
October 16-18, 2007 Kahramanmaraş Sütçü İmam University
Kahramanmaraş/TURKEY**



ALTERNATIVES TO TRADITIONAL GRAIN PROTECTANTS: ANYTHING NEW?

Christos ATHANASSIOU

*Agricultural University of Athens, Lab. of Agr. Zoology and Entomology,
75 Iera Odos 11855 Athens Greece*

E-mail: athanas@aua.gr

Grain protectants, particularly organophosphorus and pyrethroids, are among the main control strategies used in stored grain protection against insects. However, the development of resistance by many insect species, and also the consumer demand for residue-free food, constitute the essential elements in our objective of evaluating alternative, ecologically-compatible and reduced-risk, control methods. These methods include a) biological control, which is based on the use of predators and parasitoids, b) microbiological control, which is based on insect pathogens, c) inert materials, which are mainly siliceous deposits, d) several plant extracts and derivatives, e) pheromones and f) new chemicals, of low mammalian toxicity. Many of these substances have been proved very effective against a wide range of insect pests, in both field and laboratory tests. Nevertheless, up to date, their use, in most cases, remains limited. In the present work, the most promising alternatives to traditional pesticides are presented and discussed. Emphasis is given on the specific advantages and drawbacks of each method, by presenting data from newer studies regarding their use. Generally, it is expected that some of these methods will play an important role in the future, under the basis of a judicious IPM-control strategy in stored grains.

Keywords: Grain protectant, inert materials, microbiological control, plant extract, pheromone, biological control