Hany Serag Elmesiry

36 : 24th September, 1977

Bioresources Engineering

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Dr. Hany Serag Elmesiry Egyptian joined the Department of Crop Handling and Processing, Agricultural Engineering Research Institute, Agricultural Research Center, Egypt in 2000 as a Senior Researcher. His research focuses are: Postharvest Technology and Process Engineering of Fruits and Vegetables; Thermal Processing of Foods; Handling, packaging, Drying, and Storage of Agricultural products and Evaluation of Food Industries Projects; Optimization and Modeling of Food Processes, and Engineering properties of foods in relation to quality preservation. Currently, He is a postdoctoral fellow in Food Processing Engineering unit of the School of Engineering, Bioresources Engineering, University of KwaZulu-Natal, Pietermaritzburg, South Africa.

CURRENT RESEARCH

Topic

Effect of different dehydrations methods on the textural and color characteristics of fruits.

Mathematical modelling on thin layer microwave drying of apple and onion slices

Methodology

- Effect of pre-treatment, slices thickness, drying methods and conditions on drying kinetics and quality of okra.
- Determination of quality parameters of okra (colure , texture, rehydration and shrinkage ratio)
- Determination of energy consumption and thermal efficiency during the drying okra using infrared radiation.
- The effect of drying methods and storage on quality characterises of fruits and vegetables .

Application

Application of Microwave Energy and Infrared Radiation in Drying of Food and Agricultural Products

UKZN main Publications

1. Hany S. EL-Mesery and Gikuru Mwithiga. (2012). The drying of onion slices in two types of hot-air convective dryers. African Journal of Agricultural Research Vol. 7(30), pp. 4284-4296.
2. Hany S. EL-Mesery and Gikuru Mwithiga. (2012). Comparison of gas-fired hot-air dryer with an electrically-heated hot-air dryer in terms of drying process, energy consumption and quality of dried onion slice. African Journal of Agricultural research. African Journal of Agricultural Research Vol. 7(31), pp. 4440-4452.

Past Researches

1. Helmy, M. A., H. Sorour, M. M. El-Kholy, and H. S. El-Mesery, (2005): Effect of two types of grain silos on safe storage of high moisture rough rice, Misr Journal Agricultural Engineering , 22 (4).
2. Helmy, M. A., H. Sorour, M. M. El-Kholy and H. S. El-Mesery, (2005): Safe storage periods of high moisture rice crop using different types of sacks, Misr Journal Agricultural Engineering , 22 (4).
3. Helmy, M. A., H. Sorour, M. M. El-Kholy, and H. S. El-Mesery, (2010): Drying Figs Using Development Mechanical Dryer, Misr Journal Agricultural Engineering, 28 (1).
4. Helmy, M. A., H. Sorour, M. M. El-Kholy, and H. S .El-Mesery, (2010): Mathematical Modeling For Drying Figs In Thin-Layer Using Mechanical Dryer, Misr Journal Agricultural Engineering, 28(1).

Future Interests

1. Application of Microwave Energy in Drying of Beef (Biltong).
2. Comparison of energy consumption and specific energy requirements of different methods.

Extra Interests

Horse riding