OMICS International
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Aimee Sheree A Barrion et al., J Food Process Technol 2015, 6:9
http://dx.doi.org/10.4172/2157-7110.S1.026

International Conference on
Food Safety and Regulatory Measures
August 17-19, 2015 Birmingham, UK

Efficiency of washing and soaking on the removal of organophospahate and carbamate residues in tomatoes, string beans and Chinese pechay

Aimee Sheree A Barrion, Ma Paulinne L Chavez, Wilma A Hurtada, Marites G Yee and **Ma Faye R Nguyen Orca**
University of the Philippines, Philippines

Introduction: Pesticides are used essentially to ensure quantity and quality of food crops however its indiscriminate use may pose possible risk to human health and the environment hence the importance of regularly monitoring its residue concentration on food crops. The efficiency of washing and soaking on pesticide removal in tomatoes, string beans and Chinese pechay using tap water and vinegar solution was determined.

Methods: The rapid test kit for pesticide developed at the National Crop Protection of the University of the Philippines Los Banos of the was utilized to determine the reduction of organophospahate and carbamate residues in the tomatoes, string beans and Chinese pechay samples after washing and soaking using tap water and vinegar solution.

Results: Washing and soaking were significantly different from each other with the following order of efficiency: Soaking for 5 minutes>soaking for 2 minutes>washing. The reduction in organophospahate and carbamate residues when the fruit and vegetable samples were washed in tap water and vinegar solution ranged from 26-31%, 15-16 % and 12-59%, 21-80%, respectively. Upon soaking for 5 minutes in tap water and vinegar solution, the reduction in organophospahate and carbamate residues ranged from 74-100%, 81-100% and 57-86%, 67-83% respectively. No significant difference on the effect of washing solutions used (tap water and organic washing solution) was noted. Reduction in the concentration of organophospahates residues was higher than the reduction in the concentration of carbamates residues in tomatoes and Chinese pechay soaked for 5 minutes in different solutions.

Conclusions: These reductions are extremely important in evaluating the risk associated with ingestion of pesticide residues, especially in vegetables which are eaten by all people at different socioeconomic status.

Biography

Aimee Sheree A. Barrion is a licensed Nutritionist-Dietitian in the Philippines. She is an Associate Professor at the Institute of Human Nutrition and Food, College of Human Ecology, UP Los Baños(UPLB). She got her BS Nutrition, MS Applied Nutrition and PhD in Food Science degrees at UPLB. She has been teaching at the University for more than 15 years. Before her teaching stint, she used to work as a foodservice manager for two years at KFC South Manila branches. Aside from teaching, Dr. Barrion has extended numerous works as resource person, trainer and evaluator in different local and national food and nutrition activities and projects. She is also an active member of several professional organizations in the field of nutrition and dietetics. In terms of research, she has presented a number of papers and posters in different scientific fora. She has also accumulated a list of non-ISI and ISI publications. Her field of research interests lie on food and nutrition and food safety. Her future plans include developing a natural antimicrobial wash formula for cleaning foodservice utensils and equipment and also aid local government in ensuring and maintaining food safety among the various small and medium scale foodservice units.

aabarrion1@up.edu.ph