

## **SHORT CURRICULUM VITAE**

### **WILLIS O. OWINO PhD (AUGUST 2019)**

#### **1. PERSONAL INFORMATION**

Department of Food Science & Technology,  
Jomo Kenyatta University of Agriculture & Technology (JKUAT). P. O. Box 62, 000 00200 Nairobi,  
**Email:** willis@agr.jkuat.ac.ke / [willis.owino@gmail.com](mailto:willis.owino@gmail.com) ☎ **Mobile:** 0723 006 204/ 0735 720 91

#### **2. EDUCATIONAL/ACADEMIC QUALIFICATIONS**

March 2004 **PhD** Food Science & Technology, Okayama University, Japan.  
February 2001 **M. Sc. Degree** Bioscience Systems, Okayama University, Japan  
November 1996 **B.Sc. in Food Science and Technology.** JKUAT, Nairobi, Kenya

#### **3. PROFESSIONAL WORK EXPERIENCE**

April 2016 to date

Associate Professor at the Department of Food Science and Technology, Jomo Kenyatta University, (JKUAT), Nairobi, Kenya.

Aug 2010 to April 2016

Senior Lecturer at the Department of Food Science and Technology (JKUAT) Nairobi, Kenya.

May 2004 to Aug 2010

Lecturer at the Department of Food Science and Technology, JKUAT

Sept 2004 to Nov 2006

Postdoctoral Research Fellow at the Gene Research Centre, University of Tsukuba, Japan under the Japanese Society for Promotion of Science (JSPS) fellowship.

#### **4. ADMINISTRATIVE RESPONSIBILITIES IN THE UNIVERSITY**

- |  |                 |
|--|-----------------|
| 1. Manager, Food Technology Centre (FOTEC)-JKUAT                             | 2014 -2018      |
| 2. Acting CEO, Sorghum Value Chain Development Consortium Limited.           | March-Dec 2013. |
| 3. Faculty of Agriculture representative to the University Senate            | 2010 to 2015    |
| 4. Examination Coordinator for the Department of Food Science and Technology | 2008-2010       |

#### **5. SYNERGISTIC RESPONSIBILITIES**

1. Member of the Institute of Food Technologist (IFT-USA) and the International Society for Horticultural Science (ISHS)
2. Editor of the Horticulture Journal
3. External Examiner of Agro Industrial Technology Department, Masinde Muliro University of Science and Technology and Food Science and Technology program at Chuka University.

## 6. FUNDED RESEARCH PROJECTS-ONGOING

	FUNDING SOURCE	GRANT TITLE	AMOUNT	PERIOD	ROLE
1.	BioInnovate Africa Programme (BAP) Phase II supported by the Swedish International Development Cooperation Agency (SIDA)	Small-Scale Community Biorefining Of Sorghum for Food, Sugar, and Biomaterials in Rain Fed Areas of Eastern Africa. Collaborative project between The Ethiopian Biotechnology Institute (EBTi); The National Livestock Resources Research Institute (NALIRRI), Uganda; Bomvitae Agro-Industries Limited (BAIL), Uganda, and Jomo Kenyatta University Of Agriculture And Technology (JKUAT).	Total budget US\$ 750,000	2018-2021	Co-PI
2.	Global Challenges Research Fund (GCRF)-United Kingdom through the University of Reading,	Developing a Network to Improve Productivity and Nutritional value of Kenyan grain Amaranth	£40,000	2018-2019	Co-PI
3.	The German Federal Agency for Agriculture and Food (BLE).	Enhancing local food security and nutrition through promoting the use of Baobab in rural communities in Eastern Africa. Collaboration with Rhine-Waal University of Applied Sciences, Kleve, Germany, University of Kordofan, Sudan, Mzuzu University, Malawi and Wild Living Resources, Kenya	Total budget = €988,575	2016-2019	Co-PI

## 7. SELECTED RECENT PUBLICATIONS IN PEER REVIEWED JOURNALS

1. Nyangena, I., W. Owino, J. Ambuko and S. Imathiu (2018). Effect of selected pretreatments prior to drying on physical quality attributes of dried mango chips. *Journal of Food Science and Technology*. Accepted-in Press
2. Maina B., Ambuko J., Hutchinson M.J., Owino. W.O. 2019. The Effect of Different Waxing Technologies on Shelf Life Of 'Apple' Mango Fruits Stored Under Different Storage Conditions. *Journal of Food Advances*. Accepted in press.
3. Cheptoo, G., Owino, W.O., Kenji. G. 2019. Nutritional Quality, Bioactive Compounds and Antioxidant Activity of Selected African Indigenous Leafy Vegetables as Influenced by Maturity and Minimal Processing. *African Journal of Food, Agriculture, Nutrition and Development (AJFAND)*. In press
4. Momanyi, D., Owino, W. O., Makokha, A., Evang, E., Tsige, H., Krawinkel, M. 2019. Gaps in Food Security, Food Consumption and Malnutrition in Households Residing along the Baobab Belt in Kenya. *Nutrition and Food Science*. <https://doi.org/10.1108/NFS-11-2018-0304>
5. Atieno L, **Owino W**, Ateka EM, Ambuko J. 2019. Influence of Coating Application Methods on the Postharvest Quality of Cassava. *International Journal of Food Science*. Volume 2019, Article ID 2148914.

6. Neguse, T. B., Wanzala, F. K. R., Ali, W. M., Mwangi, G. S., and **Owino, W. O.** (2019). Mango (*Mangifera indica* L.) production practices and constraints in major production regions of Ethiopia. *African journal of agricultural research* 14(4):185-196
7. Tembe, K. O., Chemining'wa, G. N., J. Ambuko, **W. Owino**. 2018. Evaluation of African tomato landraces (*Solanum lycopersicum*) based on morphological and horticultural traits. *Agriculture and Natural Resources*. 52:6 pp 536-542.
8. Mitalo, O.W., Asiche, W.O., Kasahara, Y., Tosa, Y., **Owino, W.O.**, Mworio, E.G., Ushijima, K., Nakano, R. and Kubo, Y., 2018. Characterization of Ripening-related Genes Involved in Ethylene-independent Low Temperature-modulated Ripening in 'Rainbow Red' Kiwifruit during Storage and On-vine. *The Horticulture Journal*, 87(3), pp.421-429.
9. Ognakossan, K.E., Mutungi, C.M., Otieno, T.O., Affognon, H.D., Sila, D.N. and **Owino, W.O.**, 2018. Quantitative and quality losses caused by rodents in on-farm stored maize: a case study in the low land tropical zone of Kenya. *Food Security*, pp.1-13
10. Asiche, W.O., Mitalo, O.W., Kasahara, Y., Tosa, Y., Mworio, E.G., **Owino, W.O.**, Ushijima, K., Nakano, R., Yano, K. and Kubo, Y., 2018. Comparative transcriptome analysis reveals distinct ethylene-independent regulation of ripening in response to low temperature in kiwifruit. *BMC plant biology*, 18(1), p.47.
11. Mungai, G.W., **Owino, W.**, Ambuko, J., Giovannoni, J.J., Nyende, A.B. and Michuki, G., 2018. Genetic diversity within African tomato using next generation sequencing. *Plant Genetic Resources*, pp.1-10.
12. Mbondo, N.N., **Owino, W.O.**, Ambuko, J. and Sila, D.N., 2018. Effect of drying methods on the retention of bioactive compounds in African eggplant. *Food science & nutrition*, 6(4), pp.814-823.
13. Mwende, R., **Owino, W.** and Imathiu, S., 2018. Effects of pretreatment during drying on the antioxidant properties and color of selected tomato varieties. *Food science & nutrition*, 6(2), pp.503-511.
14. Mibei, E. K., **Owino, W. O.**, Ambuko, J., Giovannoni, J. J. and Onyango, A. N. 2018. Metabolomic analyses to evaluate the effect of drought stress on selected African Eggplant accessions. *Journal of the science of food and agriculture*. doi:10.1002/jsfa.8458.

## **8. CONSULTANCY ENGAGEMENTS**

1. I carried out study a Postharvest loss assessment of vegetables Kenya, in collaboration The World Vegetable Centre - AVRDC with funding from US Agency for International Development – USAID from May-October 2013. The objective of this study was to capture the current pre-harvest practices such as varieties of crop cultivated and seed sources for production, postharvest practices and constraints faced by farmers, traders and other actors in the tomato and amaranth value chain; To quantify losses in vegetable crops at the farm gate, during transportation and storage as well as during marketing; and to identify suitable interventions in the vegetable value chain to reduce postharvest losses. As part of this study a Postharvest Loss Assessment

stakeholder's workshop comprising Extension officers, Universities (Jomo Kenyatta University of Agriculture and Technology and University of Nairobi), Research (KARI and ICIPE), Ministry of Agriculture, Agro input dealers (Amiran Kenya Ltd, Plant Raisers-vegetable seedlings producer and Kenya highland seeds), processors (Njoro canning factory) and vegetable traders (Uchumi Supermarket Chain) was conducted. This workshop titled "Postharvest Handling of Vegetables in Kenya", was held at Utalii Hotel, Nairobi from 20<sup>th</sup> -21<sup>st</sup> August 2013.

2. I was the technical consultant for the Home Garden Scaling Project funded by the USAID through the World Vegetable Centre, Arusha from 2015-2017. The project goal was to contribute to reduced malnutrition, especially of women and children in Kenya through diet diversification by promoting the production and consumption of vegetables as affordable sources of essential vitamins and micronutrients through the accelerated production and deployment of diet-enhancing vegetable home garden seed kits. The project scaled up the homegarden concepts and specifically target vulnerable USAID Feed the Future communities in selected districts of Machakos County (Eastern Province), Bungoma County (Western Province) and Kisumu County (Western Province) of Kenya for farming systems and dietary diversification, while complementing other USAID-funded initiatives. The project was able to Improve nutritional literacy and dietary habits of vulnerable groups including women and schoolchildren fostering healthy diets and lifestyles; Increased adoption, dietary diversity, household nutritional productivity and utilization of nutrient-dense vegetables introduced in home gardens as per proposed targets especially in rural areas and conducted an effective promotion, capacity building, and behavioral communication for households and schools.

## **9: SUPERVISION OF POSTGRADUATE STUDENTS**

#	Name of Student	Thesis Title	MSc/ PhD,	Year enrolled	Year graduated	Status
1.	Everlyn M. Okoth	Assessment, Improvement and development of value added product from Mango ( <i>Mangifera Indica</i> L) fruit grown in Kenya	PhD	2010	2016	Graduated
2.	Joseph K. Njuguna	Effect of Growth Regulators and Fertilization on Mango Flowering, Yield and Fruit Quality	PhD	2013	2017	Graduated
3.	Elias K. Mibei	Application of Metabolomics in Assessment of Functional Diversity and Quality Traits of Selected African Eggplant and Tomato Accessions	PhD	2014	2018	Graduated
4.	Grace W. Mungai	Whole-Genome Sequencing and Analysis of the African Eggplant ( <i>Solanum aethiopicum</i> ) and Tomato ( <i>Solanum lycopersicum</i> )	PhD	2014		Submitted
5.	Tewodros Bezu	Assessment of Production Practices, Diversity and Postharvest Quality	PhD	2015		Submitted

		Characteristics of Mango ( <i>Mangifera indica</i> L.) in Ethiopia				
6.	Josphat M. Runkua	Characterization of the Genetic Diversity and Postharvest Physiology of <i>Vitex payos</i> (Lour) Merr Fruit growing in Kenya	PhD	2014		On going
7.	Peninah Yumbya	Efficacy of Hexanal and Its Mode of Action on the Postharvest Quality of Banana Fruits ( <i>Musa</i> spp)	PhD	2015		On going
8.	Joyce Chepngeno	Genetic, Nutritional and Bioactive Compounds of Baobab in Different Environments for Potential Utilization in Value added Products	PhD	2016		On going
9.	Mburu John Njuguna	Performance of Broiler and Layer Chicken Fed on Diets based on Sweet Sorghum ( <i>Sorghum bicolor</i> L. MOENCH) as an Alternative Source of Energy	PhD	2016		On going
10.	Charity Gathambiri	Identification, characterization and determination of management options of pathogenic micro-organisms contributing to postharvest losses in bulb onion ( <i>Allium cepa</i> L.)	PhD	2017		On going
11.	Bitange Naphis Mokaya	Effect of Calcium Nutrition on Yield, Postharvest Quality And Jelly Seed Incidence in Mango Fruits	PhD	2017		On going
12.	Winnie Nyonje	Molecular Marker Based Characterization of Nutritional and Bioactive traits of Vegetable Amaranth Varieties for Improved Bioavailability and Acceptability	PhD	2018		On going
13.	Isaac Nyangena Ototo	Effects of Drying Pre-Treatments on The Antioxidant Properties and Shelf life Of Mango Fruits	M.Sc.	2016		On going
14.	Rosemary Mwendu Wambugu	Drying Effects on The Nutritional and Antioxidant Properties of Tomatoes	M.Sc.	2016		On going
15.	Naomi Nammaian Mbondo	Optimization of Drying Processes for Nutrient and Quality Retention in African Eggplant	M.Sc.	2016		On going
16.	Dorah Kwamboka Momanyi	Role of Baobab in Food Security in Kitui and Kilifi Counties in Kenya	M.Sc.	2016		On going
17.	Victoria Nyutu	The role of baobab in emergency food strategies	M.Sc.	2016		On going
18.	Amwoka Emmanuel Muhuyi	Effectiveness of Selected Postharvest Handling Practices and Technologies to Preserve the Postharvest Quality of Mango	M.Sc.	2016		On going
19.	Martin Maina Waiti	Effects of water and nitrogen nutrition stress on growth, yield and quality of selected African tomato ( <i>Solanum lycopersicum</i> ) accessions and commercial	M.Sc	2016		On going

		varieties				
20.	Benson Maina	Efficacy of Waxing Innovations on Shelf Life and Postharvest Quality of Mango Fruit	M.Sc.	2015		On going
21.	Jane Ilamwenya Masambia	Effects of Organic and Inorganic Fertilizers on Growth and Yield of Slender Leaf ( <i>Crotalaria</i> Spp)	M.Sc.	2015		On going
22.	Inzaule Nekoye Sharon	Efficacy of Sanitizing Agents to Reduce Postharvest Rotting in Tomatoes Packaged in Modified Atmosphere at Different Storage Conditions	M.Sc.	2015		On going
23.	Nikuze Tefania	Management of bacterial ( <i>Ralstonia solanacearum</i> ) wilt in tomato ( <i>Lycopersicon esculentum</i> Mill.) using resistant African eggplant ( <i>Solanum spp</i> ) rootstocks	M.Sc	2014		On going
24.	Nelson Mutwa	Identification and Characterization of edible wild cactus varieties from Kenya	M.Sc.	2013		On going
25.	Loreto Atieno Oduor	Improvement of The Storability and Postharvest Quality of Cassava Using Surface Coatings	M.Sc	2016	2018	Graduated
26.	Ochieng' Berry Adhiambo.	Effect of White Sorghum Based Diets on Broiler Meat and Layer Egg Nutritional and Sensory Qualities	M.Sc.	2016	2018	Graduated
27.	Robert John Ouko	Effects of Hexanal Formulations on The Postharvest Life and Quality of Papaya Fruit	M.Sc.	2015	2018	Graduated
28.	Jane Kavata	Evaluation of the Nutritional and Antimicrobial Characteristics Of Kernel oil and Peel of Local Mango Varieties	M.Sc.	2013	2018	Graduated
29.	Edoh Egnakossan Kukom	Assessment of rodent postharvest losses to maize grain in on-farm storage in Kenya	M.Sc.	2014	2017	Graduated
30.	Kirakou, P. Stanley	Efficacy of blanching techniques and solar drying in maintaining the quality attributes of Cowpea leaves	M.Sc.	2014	2017	Graduated
31.	Angela Aluko	Probiotic Viability and Storage Stability of Yoghurt Enriched with Baobab Pulp ( <i>Adansonia digitata</i> )	M.Sc.	2013	2016	Graduated
32.	Rachel K. Mwendwa	Evaluation of the Nutritional and Postharvest Quality of Commercially Grown Tomatoes for the Local Market in Kenya	M.Sc.	2013	2016	Graduated
33.	Stephen Maloba Etabale.	A study on effective concentration and timing of off-season flower induction technologies in mango fruits	M.Sc.	2013	2016	Graduated
34.	Oduor Kenneth Tembe	Agro-morphological and biochemical characterization of tomato landraces ( <i>lycopersicon species</i> ) in Africa	M.Sc.	2013	2016	Graduated

35.	Lagat Samson Kipchirchir	Evaluation of African Eggplant Accessions for Phenotypic traits and adaptation to water stress	M.Sc.	2013	2016	Graduated
36.	Jacinta Wairimu Muiruri	Evaluation of Maturity Indices for Selected Mango Varieties and The Effect of Harvest Maturity on Quality Attributes	M.Sc.	2013	2016	Graduated
37.	Karithi Esther	Evaluation of The Efficacy of Low Cost Cold Storage Technologies to Extend Shelf Life of Mango Fruits	M.Sc	2013	2016	Graduated
38.	Joyce Chepngeno	Evaluating the Performance of a Low-Cost Hydro Cooling System in Maintaining the Postharvest Quality of Perishables	M.Sc	2013	2015	Graduated
39.	Lilian Atieno Ouma	A Comparative Evaluation of Maturity Indices and Quality Attributes of Mango Fruits Produced under Different Agro-ecological Conditions in Kenya	M.Sc	2012	2015	Graduated
40.	Bonface Mukabane	Utilization of sweet sorghum: production of bio-ethanol from nonedible part and evaluation of the juice crystallization potential	M.Sc	2012	2015	Graduated
41.	Nancy Kemunto	Effects of Agro-Ecological Conditions on the Post-Harvest Quality and Shelf Life of Apple Mango Fruits and their Response to 1-Methylcyclopropene (1-MCP).	M.Sc	2010	2013	Graduated
42.	Evans Makori	The Potential of Sweet sorghum ( <i>Sorghum bicolor</i> (L) Moench) as a Bioresource for Syrup and Ethanol production in Kenya	M.Sc	2010	2013	Graduated
43.	Penina Yumbya	Effect if 1-Methylcyclopropene and Active Bag Packaging on Postharvest Shelf Life Quality of Purple Passion fruit	M.Sc	2009	2012	Graduated
44.	Ruth Githiga	Effect if 1-Methylcyclopropene and Active Bag Packaging on Postharvest Characteristics of Mango fruit	M.Sc	2008	2012	Graduated
45.	Josphat M. Runkua	Mango ( <i>Mangifera Indica</i> L.) Fruit Response to Preharvest Bagging and Postharvest Treatment With 1-Methylcyclopropene	M.Sc	2007	2010	Graduated
46.	Nancy Onjemo Madigu	Physiology and Postharvest Behaviour of Mango ( <i>Mangifera Indica</i> L. Cv. <i>Tommy Atkins</i> ) fruit grown under water stress	M.Sc	2006	2009	Graduated