



UNIVERSITY OF NAIROBI

**DEPARTMENT OF FOOD SCIENCE NUTRITION TECHNOLOGY
NEWSLETTER/MAGAZINE**



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INSIDE THE ISSUE

1. About the department	3
1.2 Welcoming of new students	4
1.3 Graduates of the year 2019.....	5
2.0 WORKSHOPS AND CONFERENCES	7
2.1 AGRO 2019 Conference and Exhibition	7
2.2 African Potato Association (APA) Conference	8
2.3 Food Science and Technology Platform of Kenya (FoSTeP -K) Conference	8
2.4 Agri-Nutrition Conference	9
2.5 FANUS Conference	10
Participants at the FANUS Conference.....	11
2.6 Codex CCAfrica.....	11
2.7 Tropentag and FruVaSe workshop	11
2.8 Codex Committee Workshop	12
2.9 Scaling readiness training workshop.....	13
2.10 One Health Masterclass - Summer School of the One Health Regional Network for the Horn of Africa	13
3. Renovation and repairs in the Department.....	14
4. Publications.....	15
5. Corporate social responsibility, environmental, and outreach activities	16
5.1 Department holds retreat	16
5.2 Witnessing Dr. Dasei Kaindi tie the knot.....	17
5.3 Horti-Green Project training on efficient use of energy and water, waste management in horticultural processing MSMEs:	17
5.4 Outreach and onsite training on environmental management systems (EMS)	18
5.5 Masters students community Diagnostic Activity	19
5.6 Launch of processing hub	20
5.7 Schools visits and outreach activities at the pilot plant.....	20
5.8 Schools outreach at Precious Blood Girls High School Riruta.....	21
5.9 Centre for Food Security Training	22
5.10 Guest Lectures.....	23
5.11 Youth internship/attachment/apprenticeship	23
5.12 Competence Development of Staff and students	24

1. About the department

The Department of Food Science, Nutrition and Technology (DFSNT) is one of the leading Departments in the Faculty of Agriculture, College of Agriculture and Veterinary Sciences (CAVS), University of Nairobi. The Department is located off Kapenguria Road, 15 Kms to the Northwest of the Nairobi Central Business District. DFSNT degree programmes have evolved from one to six; both in undergraduate and a certificate in Food Safety and Quality. The Department serves a wide range of students from Kenya and all over the world including countries such as: Nigeria, Malawi, Uganda, DRC, Somalia, Malawi, Cameroon, Ghana, Rwanda, Nigeria, Ethiopia, Sudan, South Sudan, Tanzania and Mozambique among others. This is attributed to the quality and competitiveness of the programmes offered, the highly trained and competent teaching staff as well as the modern and fully-functional equipment and facilities.

Numerous research activities are carried out by staff and students in the fields of food security, applied human nutrition, sports nutrition, new products development, value addition, quality management and processing. DFSNT research and development activities address both national and regional issues which lend themselves to key aspects of Kenya's vision 2030 and important aspects of the Big Four Agenda.

The key Departmental objectives include to:

- i. Train students in Food Science, Technology, Human Nutrition and Dietetics and Food Safety and Quality.
- ii. Discover/transmit and preserve knowledge continuously and to organise academic fora.
- iii. Participate in seminars, workshops and conferences to share scientific knowledge.
- iv. Offer outreach and community services to the community once every year and to nurture start-ups.
- v. Offer consultancy service.
- vi. Continuously enhance collaborations and links with other institutions of higher learning, research and development and the industry.
- vii. Promote environmental sustainability by ensuring proper management of water and energy resources.

- viii. Harness innovation in Food Science, Technology, Human Nutrition and Food Safety and Quality.
- ix. Continuously participate in mentoring and training students in leadership and soft skills.

The Department of Food Science, Nutrition and Technology offers the following Programmes:

1. Certificate in Food Safety and Quality
2. BSc. Food Science and Technology
3. BSc. Food Science, Nutrition and Dietetics
4. Post-graduate Diploma in Food Safety and Quality
5. MSc. Food Safety and Quality
6. MSc. Food Science and Technology
7. MSc. Applied Human Nutrition
8. PhD Food Safety and Quality
9. PhD Food Science and Technology
10. PhD Applied Human Nutrition

All PhDs are currently being offered by Research and Thesis only.

1.2 Welcoming of new students



The University of Nairobi opened its doors to First Years who joined various course programmes in September 2019. The Department of Food Science, Nutrition and Technology

welcomed a total of 128 students who registered for courses in Food Science and Technology, Food Nutrition and Dietetics and Food safety and Quality both at bachelors and masters levels. The Department wishes the students a successful academic journey.

1.3 Graduates of the year 2019

Every year students from various colleges and universities strive to complete their courses which range between two and five years depending on the programme and a number of factors, mainly student based. It is therefore encouraging that the Department of Food Science, Nutrition and Technology feeds into the success of the university to see a good number of graduates finish their programmes on time.



Graduands from the department

In 2019 the Department celebrated its graduates that included 86 bachelors, 19 masters and one PhD. The table below shows a summary of our graduands.

Course	September		December		Total
	Male	Female	Male	Female	
BSc. Food Science and Technology	18	17	5	3	43
BSc. Food Nutrition and Dietetics	23	9	4	7	43
MSc. Food Science and Technology	-	2	1	-	3
MSc. Food Safety and Quality	2	5	1	2	10
MSc. Applied Human Nutrition	1	2	1	2	6
PhD Food Safety and Quality	-	-	-	-	-
PhD Applied Human Nutrition			1		1
PhD Food Science and Technology	-	-	-	-	-
Total					106

2.0 WORKSHOPS AND CONFERENCES

The staff and student of the department took part in a number of high profile and informative workshops and conferences. Each of these events provided good avenues for productive learning as well as dissemination of research and innovations from the Department.

2.1 AGRO 2019 Conference and Exhibition



Presentations at the AGRO 2019 conference by students from the department

The AGRO 2019 Conference and Exhibition was held as part of the annual University of Nairobi Research week that took place on 22-24th October 2019 at the College of Agriculture and Veterinary Sciences. The Department contributed more than 10 out of the 180 abstracts/oral presentations and exhibitions. Most of the presentations were made by graduate

students who are being mentored in their academic endeavours. The Department was also part of the exhibition team being led by the pilot plant and FRUVASE project team that displayed new and innovative products from guava and cowpeas leaves.

2.2 African Potato Association (APA) Conference



African Potato Association brings together experts and stakeholders in potato, sweet potato and related tubers research and innovation every two years. In 2019, the conference was held in Kigali, Rwanda and was attended by scientists from across the world. The conference included oral presentations, posters and field excursions. Interactive sessions and panel discussions were also held for the audience to get a clear outlook on emerging issues. The department was represented by Dr. George Abong who also made presentations on roots and tubers research conducted in collaboration with the department. At the end of the conference, APA held its assembly and elected leaders to steer the association for the next two years prior to the next event to be held in Malawi.

2.3 Food Science and Technology Platform of Kenya (FoSTeP-K) Conference



FoSTeP-K is an association of experts in food science and technology, nutrition and related fields that brings together like minded individuals for purposes of networking, capacity building and exchange of knowledge and ideas. The organization held a conference in October 2019 that brought together scientist from Kenya, USA, Congo, Uganda, Malawi and Mozambique. The Department was represented in this conference by a number of staff and students who actively engaged in oral presentation, training and interactions.

2.4 Agri-Nutrition Conference



A Section of DFSNT staff and students at the Agri-Nutrition conference 2019

2.5 FANUS Conference

The 4th The Federation of African Nutrition Societies conference Themed “Nutrition in Action for Sustainable Development in Africa” was held in August 2019 in Kigali Rwanda. FANUS is a conglomeration of nutrition societies of the African nations with the vision to market and sustain nutrition security across African Countries. The conference involved plenary presentations focused on the theme and other subthemes involving nutritional research nutritional policies development and implementation, economic and health implications of sustainable nutritional programmes and the malnutrition among other related themes



Participants at the FANUS Conference

2.6 Codex CCAfrica



CODEX African region (CCAfrICA) held its 23rd meeting in Nairobi, Kenya. The meeting focused on food safety in the region and was attended by more than 30 member states with Kenya as the coordinator. Kenya chaired all the plenary meetings as a coordinator and steered the meeting to its conclusion with the able leadership of the Chair (Dr. Maritim from Directorate of Veterinary Services) assisted by Dr. George Abong from the Department of Food Science, nutrition and Technology. In the meeting, a number of standards from the region were discussed and moved to the next stages of development, while key side events such as antimicrobial resistance and chemical risk assessment using total diet study from West Africa. A draft implementation plan to support codex strategic plan for the next 4 years was also initiated.

2.7 Tropentag and FruVaSe workshop



The Fruits and Vegetables for all seasons which is funding PhD and Msc students in the department held its annual meeting at the University of Goettingen, Germany. The department was represented by the Chairman, Dr. Abong who is also the project's coordinator and Mr. Joshua Ombaka, a PhD student under the project. Joshua also made a poster presentation at the Tropentag conference, which is held annually across Europe

2.8 Codex Committee Workshop



The National Codex Technical Committee convened at Panorama hotel, Naivasha from 15th - 20th September with the objective of reviewing Draft Guidelines for supporting the development of harmonized food laws for Africa region. Committee members were drawn from the following institutions: Kenya Bureau of Standards (KEBS), University of Nairobi (DFSNT), Department of Veterinary Services (DVS), Fisheries Service, Kenya Plant Health Inspectorate Services, Kenya Industrial Research & Development Institute, Agriculture and Food Authority (HCD), State Department for Trade, Government Chemist, National Public Health Laboratory and Nestle Kenya limited.

2.9 Scaling readiness training workshop

Dr. Abong was among the participants who attended a training workshop on scaling readiness-a concept whereby research activities that have gone through proof of concept can be scaled up to achieve impact in the larger community. The training was held at Jakaranda Hotel in Nairobi Kenya on 3-5 April 2019.



Participants at the Scaling readiness workshop

2.10 One Health Masterclass - Summer School of the One Health Regional Network for the Horn of Africa

The HORN One Health Masterclass was an intensive, residential training course for early career researchers based in the Horn of Africa (Kenya, Ethiopia, Eritrea, Somalia and Somaliland). The masterclass was focused upon improving One Health research capacity of both individuals and institutes, through a mixture of taught sessions, practical exercises and training of „One Health champions .

The HORN project summer school was held at the Mpala Research Conservancy, in a semi-arid ecosystem in central Kenya. It was chosen to represent the semi-arid environments that exist widely across the Horn of Africa. The Summer School took place between 11-15th March 2019. Being at Mpala, the focus was on „in the field or realworld data collection, analysis and processing. Access to a laboratory for specialist skills was however limited. The Summer School was located at Mpala s Ewaso Nyiro River Camp and the Mpala Research Centre



Dr Jeff Wamiti and several postgraduate students from the Department participated in this masterclass that was focussed on One Health topics. The masterclass provided in-depth learning opportunities to increase knowledge in quantitative skills in epidemiology, social science approaches, laboratory skills and techniques, and transferable research skills.

3. Renovation and repairs in the Department

There has been an ongoing renovation and repairs at the department from the last quarter of 2019 with an aim of improving the laboratories, sealing rooftops leakages, repainting of the building and renovations of the ANP underground area to make increase the office and classrooms capacity within the department



Laboratory renovations

Rooftop repairs and wall repainting

4. Publications

S/No	AUTHOR	TITLE	JOURNAL	PERIOD*
1	Mewa E. A., Okoth M. W., Kunyanga C. N. and Rugiri M. N. (2019).	Experimental evaluation of beef drying kinetics in a solar tunnel dryer	Renewable Energy-Springer	February,2019
2	Ogolla J. A., Kulig B., Badulescu L., Okoth M. W.,EsperG., Breitenbach J., Hensel O. and Sturm B.	Influence of inlet drying air temperature and milk flow rate on the physical, optical and thermal properties of spray-dried camel milk powders	Food and Bioprocess Technology	February, 2019
3	Isingoma, B. E., Mbugua, S. K., & Karuri, E. G. (2019).	Nutritional status of children 7–36 months old from millet consuming communities of Masindi District, Western Uganda	BMC Nutrition,	February, 2019
4	Gacheru, KL, Mwangi, AM and Abong GO	Anaemia among breastfeeding Infants (0-6 Months) and associated factors in low income Urban setting of Kenya	African Journal of Food, Agriculture, Nutrition and Development	March, 2019
5	Kaindi, DM and	Antibacterial Resistance of clostridium perfringens isolated from raw camel milk in Isiolo County Kenya in food based diets	Journal of Biotechnology	March 2019
6	Robinson Ocharo, Wambui Makau , Ayub Gitau, Joseph Mugachia.	Levels of Household Food Insecurity in Rural Kenya: A Case Study of Kitui West, Lower Yatta and Matinyani Districts	Journal of Environment and Earth Science	May, 2019
7	Gitau, P. W., Kunyanga, C. N., Abong, G. O., Ojiem, J. O., & Muthomi, J. W.	Assessing Sensory Characteristics and Consumer Preference of Legume-Cereal-RootBased Porridges in Nandi County..	Journal of Food Quality, 2019	June, 2019
8	Joshua Owade, Charles Gachuri, George Abong	Utilization of croton seed as a possible animal feed: A review.	Online Journal of Animal and Feed Research	July 25, 2019
9	Jeff Wamiti	Socioeconomic and dietary predictors of moderate wasting in children living in an urban residence in Kenya;case study of Nairobi County	<i>Manuscript Accepted. – Journal of Nutrition and Dietetics.</i>	August 29, 2019
10	Gibson Mapopa Jere, Jasper Imungi, Stephen Chimtengo	Improvement of Protein and Energy Intake in Malawi through supplementation of Maize meal nsima with soybean	<i>International Journal of Food Science and Nutrition</i>	September 2019

11	Joshua O. Owade, George Abong Agnes Mwangombe	A review of the contribution of cowpea leaves to food and nutrition security in East Africa	<i>Food Science and Nutrition</i>	November 9, 2019
12	Duke G. Omayio, George Abong, Michael Okoth, Charles Gachui, Agnes Mwangombe	Current status of Guava (Psidium Guajava L.) Production, utilization, processing and preservation in Kenya	<i>Current Agriculture Research Journal</i>	December 2, 2019

5. Corporate social responsibility, environmental, and outreach activities

The Department held outreach activities in the year under review. The summary is as follows:

5.1 Department holds retreat

In October 2019, the Department held a two-day retreat for all the staff at Tigoni SWA facility, Limuru. The theme of the retreat revolved around unity and gelling at the work place, communication and work etiquette. There were also a number of team building activities accompanied with workout challenges in day one. Day two was dedicated to academic staff who focused on discussions of curricula under review.



5.2 Witnessing Dr. Dasel Kaindi tie the knot



The Department celebrated the exchange of marriage vows between Dr. Kaindi who is a lecturer at the department and his wife at a colourful wedding ceremony held in Machakos county.

5.3 Horti-Green Project training on efficient use of energy and water, waste management in horticultural processing MSMEs:

Key staff and students in the training included Dr. George Abong , Prof. Michael Okoth, Mr. Duke Gekonge from DFSNT and Prof. J. Muthama, Mr. Benson Ouma, Ms. Linda Obiero and Mr. Elmah Geoffrey from Wangari Maathai Institute for peace and environmental studies. The Horti-Green project carried out a number of outreach/training activities with the aim of building capacity of MSMEs to efficiently manage energy and water in horticultural processing as well as manage wastes. The trainings focused on sustainable production and consumption (SCP), environmental management systems implementation as well as audits



SCP Training in Mbale, Vihiga, April 2019



SCP Training in Kabondo Homa-Bay, November



SCP training in Nyeri, April 2019



5.4 Outreach and onsite training on environmental management systems (EMS)

This was conducted to monitor the progress of MSMEs in the implementation of the EMS and application of knowledge gained from the various training organized by the University of Nairobi. The Project team visited the MSMEs at their sites of production to observe application of knowledge gained from previous trainings.



Midrow foods, Ruiru



Gaea foods, Baba Dogo



Dala Bakeries, Kendu Bay



Euroingridients, Kikuyu

5.5 Masters students' community Diagnostic Activity



This involved staff and students undertaking Applied Human Nutrition, Food Safety and Quality and Food Science and Technology where they interacted with community members

in Kibwezi. Staff members included Dr. D. Kaindi, Dr. S. Ngala, Dr. L. Njue, Mr. Turgut, Mr. J Mugo, Mr. M Ruto.

5.6 Launch of processing hub



The fruit processing and training hub was launched during the year in review. The hub that is funded through Purdue University and Rockefeller Foundation seeks to be a centre that provides knowledge and practical skills in fruits and vegetable value addition to minimize wastes while maximizing the profit from the farm crops.



5.7 Schools visits and outreach activities at the pilot plant

During the year, several guests and schools made visits to the pilot plant for demonstrations on processing and potential collaborations in food processing.



5.8 Schools outreach at Precious Blood Girls High School Riruta

DFSNT visited Precious Blood Girls High School Riruta and created awareness on its programs. At the same time aspects of human nutrition and food safety including clinical nutrition demonstrations were conducted.



5.9 Centre for Food Security Training



The centre for food security that is housed within the Department and led by Dr. C Kunyanga offered short courses geared towards quality and food safety assurance on farm produce with major focus on farm to table analysis of food commodities

5.10 Guest Lectures



Kate Dockins and Eric Sneider from Institute of Food Technology, USA visited the Department and had an interactive talk with students and staff on the topic “Feeding tomorrow “. Jacob Sarfor from Georg-August – University Germany gave a talk on “Application of cost of diet tool in local context”.

5.11 Youth internship/attachment/apprenticeship

NO .	STUDENT NAME	GENDE R	YEAR OF STUDY	COLLEGE/ UNIVERSITY	DURATION	PAID/ UNPA ID
1	Kennedy Mutie	M	3	University of Nairobi	3 months	Paid
2	Rhodah Likamu Resiato	F	3	University of Nairobi	3 Months	Paid
3	Ali Mwarome Jumbale	M	4	University of Nairobi	3 Months	Paid
4	Lydia Mueni Musembi	F	2	PC Kinyanjui Technical Training Institute	3 Months	Unpai d
5	Lydia Bonareri Ouko	F	1	PC Kinyanjui Technical Training Institute	3 Months	Unpaid
6	Grace Akinyi Ochieng	F	1	Kabete National Polytechnic	3 Months	Unpaid
7	Anna Nduku Muinde	F	2	Kabete National Polytechnic	3 Months	Unpaid
8	Kebrine Kavosa Otieno	F	2	Kabete National Polytechnic	3 Months	Unpaid
9	Ivy Mishi Achieng	F	2	Kabete National Polytechnic	3 Months	Unpaid
10	Faith J. Koech	F	2	Kabete National Polytechnic	3 Months	Unpaid

11	Purity Mwangi	F	2	Kabete National Polytechnic	3 Months	Unpaid
12	Caitlin Kagwiria Mwiti	F	2	Kabete National Polytechnic	3 Months	Unpaid

5.12 Competence Development of Staff and students

NAME	ACHIEVEMENT	DATE
Prof. Wambui Kogi-Makau	Certificate of completion of The Integrated Food Security Phase Classification Level 1 Training	October 17, 2019
Dr. George Ooko	Certificate of achievement in IPC Acute Level 1 Certification Final Test	July 26, 2019
Caroline Muthike	Certificate of achievement in IPC Acute Malnutrition Analysis Certification	September 24, 2019
Dr. Catherine Kunyanga	Certificates of appreciation, attendance and participation and presented a paper titled: reduction of losses and value addition in Kenyan Food value chains: Empowering Women groups and enhancing food security at the 2 nd All African Postharvest Congress and Exhibition	September 17-20, 2019
Dr. Dasel Kaindi	Certificate of participation and making a poster presentation on Investigating the association between African spontaneously fermented dairy products , faecal carriage of streptococcus infantries subsp. Infantries and colorectal adenocarcinoma in Kenya in the scientific Symposium on cancer research prevention and control in Kenya	November 11, 2019
Mr. Duke Gekonge	Coming to terms in the implementation of nutrition - agriculture transdisciplinary research projects, Justus Liebig University, Gissen Germany	November 11-17, 2019
Dr. Angela A. Andago	Certificate of participation in the FAO/INFOODS?AFROFOODS Training workshop on improving the quality and reliability of Food	August 25, 2019

	Consumption data in Africa	
Dr Jeff Wamiti	Certificate of Participation, HORN One Health Masterclass	25 th November – 6 th December, 2019
	Certificate of Attendance, HORN Project Summer School	11 – 15 th March, 2019
Isaasc Maitha Muuo	Certificate of achievement in IPC Acute Level 1 Certification Final Test	October 24, 2019
James Ouma	Certificate of participation in the sustainable consumption & production practices and green Finance workshop	October 29, 2019
Abdirizack Aftin Hussein	Certificate of attendance in Agro 2019 conference and exhibition .(part of University of Nairobi Research week	October 22-24, 2019
Faith Wanjera	Certificate of attendance in Agro 2019 conference and exhibition .(part of University of Nairobi Research week	October 22-24, 2019
Judith Katumbi Ndeme	Certificate of participation in a training on ISO 22000:2018 Food safety Management Systems themed” Industrial Innovation and research for Food Safety in Africa	October 2, 2019
Judith N. Katumbi	Certificate of attendance and participation, presented a paper on Post harvest handling , hygiene knowledge and practices of Guava fruit handlers in Kitui and Taita Taveta counties , Kenya at the Agro 2019 Conference Exhibition	22-24 October 2019
Abdiaziz Abdullahi Beinah	Certificate of participation in the Food Security Center (FSC) Regional Workshop on Sustainable Safe Food Systems in Africa: Moving Towards a sustainable Food Future	September 23-25, 2019
Grace Werikhe	Certificate of participation in the Food Security Center (FSC) Regional Workshop on Sustainable Safe Food Systems in Africa: Moving Towards a sustainable Food Future	September 23-25, 2019
Joseph Honore Nguetti	Certificate of participation in the Food Security Center (FSC) Regional Workshop on Sustainable Safe Food Systems in Africa: Moving Towards a sustainable Food Future	September 23-25, 2019



For More information

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