

CURRICULUM VITAE

Prof. Hassan Karakacha Were
Associate Professor of Agriculture
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PERSONAL INFORMATION

Born: November 30th, 1967
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Sex: Male
Nationality: Kenyan
Languages: English, Luhya, Swahili, German, French and Japanese

PERSONAL STATEMENT

I am a highly motivated, Creative, Talented and innovative academician with demonstrable success in overseeing and coordinating development projects to the end.

My career objective is to significantly enhance the quality of Kenyan research and that of graduate students to internationally competitive level while assisting small holder farmers improve their livelihoods through increased farm productivity.

PROFESSIONAL SKILLS

- Advanced training and understanding of scientific principles in molecular biology, biotechnology, agricultural sciences, plant disease survey and surveillance.
- Extensive hands on experience in Serological and molecular diagnosis of plant diseases particularly viral diseases
- Metagenomic characterization of plant viruses including Illumina sequencing (miseq), NGS data analysis, transcriptomics and functional genomics
- Highly developed research skills including ability to carry out extensive literature search, reviews, analysis and apply knowledge in solving challenging scientific problems
- Excellent ability to professionally engage in developing new ideas and solving problems
- Highly developed communication and presentation skills in verbal, written including presentations to diverse audience in seminars, conferences, and reporting in peer reviewed journals
- Experience in teaching, graduate student supervision and training at university including mentoring in multi-cultural working environments
- Experience in training farmers and agricultural extension staff in small holding production on agronomy and crop protection practices

EDUCATION

University of Hanover, Germany. Institute of Plant Diseases and Plant Protection. 1998 – 2001. PhD (Molecular Plant Virology) 2001. Thesis title: Serological and molecular characterization of begomoviruses infecting cassava in Africa.

Volkshochschule, Braunschweig GMBH, Germany. Computer EDV course (Introduction to computers: Operating system; Linux/Windows. Office programs. Internet, Sept. - Nov. 2008

Goethe Institute Goettingen, Germany. April 30, 1998 – September 27, 1998. Certificate in German language course (DSH) 1998.

Federal Biological Research Center for Agriculture and Forestry (BBA), Braunschweig, Germany. Curriculum in plant virus purification and antisera production (part of M.S. thesis). January 1st, 1996 – July 29, 1996.

University of Nairobi, Kenya. College of Agriculture and Veterinary Sciences. Department of Crop Science. 1994 –1996. M.S. (Plant Pathology), 1997. Specializing in Diagnostic survey, and Control of *Potato Leafroll virus* (PLRV), in Kenya.

University of Nairobi, Kenya. College of Agriculture and Veterinary Sciences, 1988-1991. Bachelor of. Science in Agriculture (Agricultural economics, Animal production, Crop production and Soil science).

TRAINING AND WORKSHOPS

March 11 – 12, 2019: Regional proposal writing workshop at AICAD headquarters in Kenya

April 10 – 17, 2017: Proposal Development for international funding Writeshop (ABCF-led COP), BecA-ILRI hub Kenya,

October 1 – 15, 2015: BecA-ILRI hub: Certificate in Advanced Genomics and Bioinformatics.

April,1 – 4 2010: KARI- NARL: Quality Control Specialist for Confined Field Trials (CFT) training, 30th March –Sponsored by Biosafety Resource Network (BRN) of DDPSC / KARI.

March 2 – 5 2010: KARI – NARL: Compliance Training for confined Field Trial (security and records): Sponsored by BioCassava+ / VIRCA / KARI.

December‘ 2008 and June 2009: Proposal Writing Seminar for international funding, Part 1 at Entebbe, Uganda, and part 2 at Naivasha, Kenya, respectively.

May 22nd to August 14th, 2009: International Seminar on the Agricultural Economics and Public University Management Skills, , Changchun, Shanghai and Beijing, China.

WORK EXPERIENCE

June 1 2019 – to date: External examiner, Institute of Biotechnology, Addis Ababa University Addis Ababa, Ethiopia

September 30th – November 15th 2018: Visiting Professor, Institute of Plant Science and Resources, Okayama University, Japan.

February’ 2018 to 1st October, 2020: Dean, School of Agriculture, Veterinary Sciences and Technology (SAVET), Masinde Muliro University of Science and Technology.

November 2015 to January’ 2016. Food and Agricultural Organisation of the United Nations (FAO), cassava expert. Consultancy on management of cassava brown streak virus in Rwanda.

March’ 2014 to Present: Associate Professor of Molecular Plant Virology, Department of Biological Sciences, Faculty of Science, Masinde Muliro University of Science and Technology.

May' 2008 to August 2014: Dean (two terms), School of Graduate Studies, Masinde Muliro University of Science and Technology,

May' 2008 to March 2014: Senior Lecturer, Department of Biological Sciences, Faculty of Science, Masinde Muliro University of Science and Technology.

January' 2005 to May 2008: Lecturer, Department of Biological Sciences, Faculty of Science, Masinde Muliro University of Science and Technology.

December' 2002 to December, 2004: JSPS Assistant Professor and Post-Doctoral Researcher, Department of Plant Pathology, Graduate School of Kyushu University, Fukuoka, Japan. Taught and Supervised MSc. And PhD students and researched on Honeysuckle and Tobacco Infecting Geminiviruses in Japan.

January' 2002 to December 2002. Diakonie Emergency Aid, Nairobi, Kenya. Officer in charge of coordinating activities aimed at revamping agriculture in Somalia and Southern Sudan. These countries are ravaged by war and there is a generation of youth who do not know anything about farming. My task was to make sure smallholder farmers are trained in new agricultural methods and get back to farming again.

Synopsis of academic, leadership and research experience

Academic: From 2002 to 2004, I taught at Kyushu University, Japan in the department of Plant Pathology, as an assistant Professor. During this time, I successfully co-supervised one PhD and one masters students. Additionally, in collaboration with Professor Yoichi Takanami I researched on begomoviruses infecting tobacco and tomato in Japan and published a number of papers as well as depositing a number of new novel viral sequences in the GeneBank.

In 2005, I left Kyushu and came to Masinde Muliro University of Science and Technology (MMUST) in the department of Biological Sciences. Here, I teach both undergraduate and graduate students in the areas of biotechnology, crop protection, Molecular plant virology and Genetics.

Leadership and Management: I am the immediate former dean of the School of Agriculture and Veterinary Sciences and Technology (SAVET) A position I am serving since Feb. 2018. Previously, I have been the Dean of School of Graduate studies. As Dean of the graduate school, I established a working system where Masters and PhD candidates can finish at a record 2 and 3 years, respectively. Over 200 staff and 1100 students in the graduate school were directly or indirectly under my management. This position of Dean was electable and the fact that I was elected for a second and final term shows that the staff and students were impressed with my style of leadership and management. At the graduate school, I coordinated graduate teaching and research in various fields of the University. Additionally, I helped develop over 300 teaching and research programmes in various fields most notable were: Agriculture, biological science, disaster management, criminology, education and business studies to mention but a few. I did this with great passion and success. At the graduate school, I also established a collaboration with other universities in the East African region as well as in Europe particularly in the area of Research, external examining and research supervision.

research and outreach: I have coordinated the establishment of linkages and MoUs between various institutions both locally and internationally. On the local scene, I and Dr. Francis Muyekho of KALRO drafted a working MoU between our two institutions from which staff and students on both sides have benefitted immensely.

On the international scene, I in collaboration with Prof. Lesley Torrance drafted an MoU between the James Hutton Institute and MMUST. This collaboration has benefited both the staff and students of MMUST as we have both staff and student exchange and writing of joint research projects. Similar MoUs and linkages have been established with the *Intitut de Recherche pour le Développement* (IRD) of Montpellier, France, in collaboration with Dr. Eugenie Herbrard, DSMZ of Germany, in collaboration with Dr. Stephan Winter and ETH-Zurich of Switzerland, in collaboration with Prof. Wilhelm Gruissem.

As a researcher, I have written a number of cutting edge research proposals and quite a number have been funded. Some of those proposals with international funding include; PAMOJA PHC Kenya France collaboration programme, Royal society exchange programme, Virus resistant cassava for Africa, Supporting investments in upscaling of grain legumes in western Kenya through assessing and modeling the threat of biotic stressors, Quikgro, an early maturing, heat and disease resistant potato for Kenya and lastly, Improved potato production systems in Kenya. We have done a number of diagnostic surveys of diseases of important crops in Kenya including potato, cassava, passionfruit, legumes and rice.

On outreach, my team has assisted quite a number of farmers transform from subsistence to near commercial with the aim of improving the livelihoods of the rural poor. These activities revolve around agricultural intensification and marketing.

SERVICE TO THE COMMUNITY

2010 to present: Chairman, Board of trustees, Kakamega Jamia Mosque and Islamic Centre

2012 – 2014: Member, board of management, Kakamega Muslim Secondary School

2015 to present: Chairman, Board of Management, Kakamega Muslim Secondary School

PAST POSTGRADUATE STUDENTS

Ph.D

1. Hang-Soo Choi: Theseis-Pyhologenetic analysis of tomato spotted wilt virus in Korea, (2004) Thesis submitted to Kyushu University, Japan.
2. Mary Goretti Kariaga: Research Topic - Biological and molecular characterization of rice blast fungus (*Pyricularia oryzae Cav.*) and screening rice varieties for resistance to the disease.
3. Boniface Collins Mangeni: research topic – Distribution and Diversity of BCMV/BCMNV infecting common bean varieties in western Kenya
4. Mukoye Benard: research Topic - Distribution and Characterization of Groundnut Rosette Associated Viruses in Western Kenya

Masters

1. Kimura Komuta: Thesis- Molecular characterization of begomoviruses infecting honeysuckle in Japan. Thesis submitted to Kyushu University, Japan.
2. Godrick Simiyu Khisa: Thesis - Determinants of promptness of loan repayment among farmers' field school in Kakamega Central District of Kenya. Thesis submitted to MMUST.

3. Erick Temba Wekesa: Thesis - Effects of drawing skills on student performance in biology in Bungoma District, Kenya. Thesis submitted to MMUST.
4. Jason Assanga Omufuoko: Thesis - Secondary school students understanding of classification of living things in Samia District. Thesis submitted to MMUST.
5. Barasa Olunga Ibrahim. Thesis - Secondary school students' perception of the role of alternative sources of energy in sustainable development. Thesis submitted to MMUST.
6. Paul Atenga Nyamwamu: Occurrence, transmission and genetic variability of Potato Virus Y (PVY) in Kenya. Thesis submitted to MMUST.
7. Chrispo Kubo Onsongo. The implication of tomato value chain activities in the performance of tomato firms in Kenya. Thesis submitted to MMUST.
8. Aggrey Keya Osogo: Research Topic - Occurrence, distribution and virulence of Cassava Brown Streak Viruses in Western Kenya.
9. Mildred Imbuhila Lidejere: Research Topic - Variation in the coat protein gene of RYMV isolates from Western Kenya.
10. Leitich K.Robert: Research Topic - Occurrence and distribution of angular leaf spot (*Phaeoisariopsis griseola* (Sacc.) on common bean (*Phaseolus vulgaris* L.) in Western Kenya.
11. Boniface Collins Mangeni: Research Topic - Distribution and diversity of *Bean Common Mosaic Virus* (BCMV) infecting beans in Western Kenya.
12. Mukoye Benard: Research Topic - Occurrence, distribution and diversity of Cowpea Mild Mottle Virus (CPMMV) infecting cowpeas in in Western Kenya.
13. Isabella Kanaga Ememwa: Research Topic - Evaluation of Engineered cassava genotypes for resistance against Cassava brown streak disease and effect of agronomic technologies on the disease.
14. Lubao Wanyonyi Murere: Research topic - Effects of legume diversity and intercropping with maize on Bean Common Mosaic Necrosis Virus (BCMNV) and Bean Common Mosaic Virus (BCMV) disease pressure in western Kenya
15. Antony Kigaru Adeg: Research topic – Diversity and distribution of rice yellow mottle virus (RYMV) in Kenya
16. Moses Wekesa Wabwire: Research Topic - Evaluation of Engineered cassava genotypes for resistance against Cassava mosaic disease and effect of agronomic technologies on the disease.
17. Orakha Odhiambo Patrick, Research Topic - Occurrence of cowpea mild mottle virus (CPMMV) and screening popular cowpea varieties for resistance to the virus in western kenya
18. Mabele Antony Simiy, Research Topic - Occurrence and diversity of groundnut rosette assistor virus causing groundnut rosette disease in Western Kenya.

CURRENT POSTGRADUATE STUDENTS

PhD

1. Aggrey Keya Osogo, research topic: Occurrence, distribution and diversity of viral diseases and pollinators in Common bean (*Phaseolus vulgaris* L) within the Kakamega forest ecosystem, Kenya'

2. Maryrose Nyakio Kithinji, research topic: Evaluation of quickgrow potato genotypes for resistance to potato virus Y and for heat tolerance in Kenya
3. Janepher Nangila Mafuta, research topic: Evaluation of Resistance to *Ralstonia solanacearum* in African nightshade accessions in Western Kenya
4. Lubao Wanyonyi Murere: research topic Distribution, biological and molecular characterisation of groundnut ringspot virus (grsv) in western Kenya
5. Fredrick Wotia, research topic: Occurrence, distribution and molecular diversity of peanut mottle virus (PeMoV) in western Kenya
6. Mabele Antony Simiyu, research topic: Distribution and genomic characterization of cucurbit chlorotic yellows virus infecting groundnut (*Arachis hypogaea*) in western Kenya

Masters

1. Emma Zanelle, Research Topic – Diversity and effect of intercropping legumes with maize on Cucumber Mosaic Virus (CMV) disease pressure on cowpea in western Kenya.
2. Eunice Juma, research topic: Prevalence and distribution of PVY and its major vectors in western Kenya

CONSULTANCIES

April 2018 – May 2018: Food and Agricultural Organisation (FAO), Kigali Rwanda. Consultant on the management of Passion fruit diseases in farmers' fields.

November 2015 – January 2016: Food and Agricultural Organisation (FAO), Kigali Rwanda. Consultant on the management of cassava brown streak disease (CBSD), Train officials of Rwanda Agricultural Board (RAB) on incorporating smallholder farmers in CBSD surveillance and monitoring service in 12 main cassava growing districts of Rwanda.

2010 – 2012: Quality Control Specialist (“QCS”) for the Biosafety Resource Network (“BRN”) funded by the Bill and Melinda Gates Foundation through the Donald Danforth Plant Science Center (“DDPSC”), St. Louis Missouri, USA. Virca and Bio cassava plus (CFT) at Alupe, Kenya.

2009 to 2011: Evaluation of proposals of applicants for the National commission for Science, Technology and Innovation call for proposals for National council for Science and Technology (NACOSTI), Nairobi, Kenya.

2010 to 2013: Preparation of guidelines for PhD proposal writing and evaluation of PhD proposals from PhD applicants, for the German Academic Exchange Service (DAAD), Nairobi, Kenya.

SOME FUNDED PROJECTS

Project 1

Occurrence, distribution and molecular diversity of virus stressors on groundnut crops in Kenya

Funded by BBSRC 2019 – 2020

Project 2

Quikgro Potato Project

Development of potato variety that is Early maturing and resistant to heat and virus diseases in Western Kenya. **Funded by BBSRC 2018 – 2019.**

Project 3

Royal society exchange programme 2015 - 2018

Supports collaborative research projects between researchers in the UK and researchers in sub Saharan Africa thereby building capacity of African scientists. **This project is funded by the Royal Society of the UK.**

Project 4

PAMOJA PHC Kenya France collaboration programme 2016 - 2017

This project will contribute (i) to reinforce the capacity of Kenyan researchers in diagnostic and molecular characterization of plant viruses, (ii) to assess the epidemiological risks of RYMV in Kenya (distribution and diversity in major rice growing areas) and (iii) to design new tools for recombinant detection and identification.

Project 5

Evaluation of transformed cassava cultivars for Resistance to CBSD and CMD in Kenya and Rwanda, 2013 - 2016: Cassava (*Manihot esculent* Crantz) is an important food staple and an income generating crop for smallholder farmers in Western and coastal regions of Kenya, where it supports livelihoods of about 8.6 million people. Production of the crop in SSA is impaired by devastating viral diseases caused by the African Cassava Mosaic Virus (ACMV, a DNA virus) and Cassava Brown Streak Virus (CBSV, an RNA virus), often resulting in total loss of starchy root yield. No natural resistance to CBSV has been identified and breeding for virus resistance is difficult, time-consuming and often not durable. The project has engineered resistance/tolerance to ACMV and CBSV in different cassava cultivars and demonstrated in greenhouse inoculation assays that the transgenic cultivars remain resistant to the viruses in successive planting cycles. In a confined field trial, we are now evaluating and validating trait and agronomic performance of the lines under natural field conditions in western Kenya. This will alleviate the food security cash income problems faced by small holder farmers in Kenya and Rwanda, the wider East African region and beyond. **This project is funded by the Government of Switzerland through ETH-Zurich**

Project 6

Supporting investments in upscaling of grain legumes in western Kenya and Uganda through assessing and modeling the threat of biotic stressors, 2012 – 2017. Western Kenya is one of the food baskets of Kenya, and a region with about 1/3 of the country's population. Despite the importance of legumes in the region (for food and nutritional security, income generation and sustainable crop production), legume productivity is declining and yields of grain legumes are still very low (typically less than 1.0 t/ha). Pests and diseases - also known as "biotic stressors" - decrease agricultural yields, raise production costs, and limit the storability and marketability of food and feed legumes. They also increase the risks of farming as a livelihood strategy or a commercial enterprise. We work with rural smallholder farmers in the western Kenya counties of Busia, Bungoma, Siaya, Migori, Nandi and Vihiga to increase their legume and maize yields under the concept of Agro-ecological intensification (AEI). Phase I of the project, involved baseline survey of pests and diseases of legume crops. Phase II, involves control of pests and diseases using a variety of legumes intercropped with maize. The legumes improve soil fertility at the same time controlling some of the biotic stresses thereby improving yields under smallholder farmer conditions. This project is funded by **The McNight Foundation** initially for two years (2012 – 2014) and was renewed for three years.

Project 7

Improved potato production systems in Kenya, 2008 - 2013: Potato (*Solanum tuberosum*) is the second most important food crop in Kenya after maize and plays a critical role in food security and poverty reduction because it can grow in high altitude areas (1500-3000m asl) where maize cannot be grown, it has a high nutritive value per unit area and is traded locally providing an income for subsistence farmers. We worked with rural smallholder farmers in Meru, Nyeri, Kiambu, Nyandarua, Nakuru, Bomet, Uasin Gishu, Marakwet, Trans nzoia and Bungoma counties of Kenya to improve potato production. The first phase involved survey of diseases and pests of potato in the counties. We found diseases as a result of which most potato varieties on the ground had badly degenerated. The second phase involved production of clean potato seed and evaluation of new varieties from Scotland for adaptation to Kenya conditions. Also included in the project was aphid monitoring in five Kenyan sites Molo, Njabini, Meru, Timau, Kiambu and Mt. Elgon to determine an area suitable for potato seed tuber production. We found Njabini and Molo suitable for planting clean seed as they, on average, had low aphid numbers. Our variety Mayan gold went through national performance trials and has a huge national demand. This project was funded by **The Monsanto Fund** initially for two years (2009 – 2011) and was renewed for another 4 years.

AWARDS AND FELLOWSHIPS

Sept.2018-Nov 2018: JSPS Bridge fellowship, at the Institute of Plant Science and Resources, Okayama University, Japan.

2002 – 2004: JSPS, Post-Doctoral research fellowship. Laboratory of Plant Pathology, Graduate School of Bioresource and Bioenvironmental Sciences, Kyushu University.

1997 – 2000: DAAD, Ph.D Fellowship. Institute of Plant Diseases and Plant Protection, University of Hanover, Germany. Plant Virology.

1994 – 1996 DAAD, M.S. Fellowship. Department of Crop Science, University of Nairobi.

1988– 1991 Government Fellowship. Department of Crop Science, University of Nairobi. B.S. in Agriculture.

PROFESSIONAL AND HONOR ORGANIZATIONS

I am a member of The Kenya society of microbiology, Phytopathological Society of Japan, British Society for Plant Pathology, German Phytopathological Society, Horticultural association of Kenya, East African JSPS Alumni Association and Kenya DAAD scholars Association

CONFERENCES/WORKSHOPS/SEMINARS ATTENDED

Were, **HK**, Mukoye, B, Mangeni¹, BC, Leitch RK, Arinaitwe, W, Winter S, and Abang MM, 2016. Viruses infecting legumes in Western Kenya. Proceedings of the 3rd Humboldt conference of the Humboldt Colleg/KDSA, April 4th -8th, 2016. Naivasha, Kenya

Were, **HK**, Olubayo FM , Fenton B, Kabira JN, Aura J and Torrance L., 2013. Aphids colonizing potato in Kenya. Proceedings of the 9th triennial conference of the African Potato Association (APA) June 30th -July 4th13. Naivasha, Kenya

Were, **HK**, Kabira J, Olubayo FM, Karinga J, Aura, and Torrance L., 2013. Aphid pests of potato in Kenya. Proceedings of the 12th International symposium on Plant Virus epidemiology, Jan.28th – Feb. 1st '13. Arusha, Tanzania.

Were, **HK**, Kabira J, Kinyua, ZM, Olubayo FM, Imbuaga B, Karinga J, Aura, J, Lees, AK Cowan GH and Torrance L., 2011. The status of potato viral, bacterial, nematode diseases and aphids in Kenya. Proceedings of the 10th African Crop Science Society Conference,

- Sept.27th – Oct. 1st '11. Joachim chisano international conference center, Maputo, Mozambique.
- Keya, N.C.O., Omuterema, S., Ndolo, P. Imbuga, B. and. Were, H.K., 2012. Promotion of orange fleshed Sweet varieties in Sugarcane growing areas of Western Kenya.Proceedings of the Minia International Conference for Agriculture and Irrigation in the Nile Basin Countries, 26th -29th March 2012, El-Minia, Egypt.
- Were HK, Takeshita M, Furuya N and Takanami Y, 2012. Variations in the DNA-A of begomoviruses infecting tobacco and honeysuckle in Japan. Proceedings of the 9th African Crop Science Society Conference, Sept.30th – Oct 3rd '2009. Cape town, South Africa.
- Were H.K. 2007. Survey of cassava mosaic and cassava brown streak virus in Western Kenya. Proceedings of the 4th Horticultural workshop. University of Nairobi kabete Campus, Nov. 30th – 1 Dec.'07.
- Were HK, Winter S and Maiss E, 2007. Characterisation and distribution of cassava viruses in Kenya. Proceedings of the 8th African Crop Science Society Conference, October 27th – 31st '07. Minia University, El-Minia, Egypt. Pp 909-912.

PUBLICATIONS

- Mabele, A. S. Were, H. K., Ndong'a, M. F. O., Mukoye, B., 2020 Occurrence and genetic diversity of Groundnut rosette assistor virus in western Kenya. *Crop protection*,139: 1-7.
- Mabele, A. S. Were, H. K., Ndong'a, M. F. O., Mukoye, B., Orakha, O.P. and Torrance, L. 2020. Occurrence and distribution of groundnut rosette disease in Western Kenya. RUFORUM Working Document Series (ISSN 1607-9345), 2018, No. 17 (1): 725-732. Available from <http://repository.ruforum.org>
- Kariaga, M.G., Onamu, R.2 Wakhungu, J. & Were, H.K. 2020. Reaction of Rice Blast *Pyricularia oryzae* CAV. isolates on a set of improved rice varieties in Western Kenya indicator to presence of pathogenic strains. RUFORUM Working Document Series (ISSN 1607-9345), 2018, No. 17 (1): 811-820. Available from <http://repository.ruforum.org>
- Mangeni BC, Were HK, Ndong'a M, Mukoye B. 2020. Incidence and severity of bean common mosaic disease and resistance of popular bean cultivars to the disease in western Kenya. *J Phytopathol.* 2020;00:1–15. <https://doi.org/10.1111/jph.12928>
- Susan Jones, Graham Cowan , Stuart MacFarlane , Benard Mukoye , Bonphace Collins Mangeni, Hassan Were , Lesley Torrance, 2020. RNA sequence analysis of diseased groundnut (*Arachis hypogaea*) reveals the full genome of groundnut rosette assistor virus (GRAV). *Virus research*, 277: 197837
- Benard Mukoye, Millicent Florence Owuor Ndonga, Hassan Karakacha Were, 2019. Incidence of Groundnut Rosette Disease (GRD) and Genetic Diversity of Groundnut Rosette Assistor Virus (GRAV) in Western Kenya. *International Journal of Genetics and Genomics*. Vol. 7, No. 4, 2019, pp. 98-102. doi: 10.11648/j.ijgg.20190704.12
- Benard Mukoye, Anthony Simiyu Mabele, Millicent Florence Owuor Ndonga, Bonphace Collins Mangeni and Hassan Karakacha Were, 2019. Distribution of groundnut rosette disease and sequence diversity of groundnut rosette virus associated satellite RNA (Sat-RNA) in Western Kenya. *International Journal of Genetics and Genomics* 2019; 7(4): 98-102
- Mangeni Bonphace Collins, Were Hassan Karakacha, Mukoye Benard, Ndong'a Millicent, 2019. First Full Length Genome Sequence of Bean Common Mosaic Necrosis Virus (BCMNV)

- Isolated from Common Bean in Western Kenya. *International Journal of Genetics and Genomics*. 7, No. 4, pp. 132-135
- Mangeni Bonphace Collins, Ndong'a Millicent, Mukoye Benard, Were Hassan Karakacha, 2019. Evaluation of Common Bean Cultivars Resistance to the Bean Common Mosaic Necrosis Virus in Western Kenya. *International Journal of Genetics and Genomics*. Vol. 7, No. 4, pp. 115-118. doi: 10.11648/j.ijgg.20190704.15
- Murere L W, Mukoye B and Were, H K., 2019. Variability of Bean Common Mosaic Disease on Common Bean Cultivars at Different Growth Stages in Western Kenya. *International Journal of Academic and Applied Research*, Vol. 3 Issue 9: 11-19
- Mabele A.S., **Were H.K.**, Ndong'a M.F.O. Mukoye B., 2019. Distribution, Molecular detection and Host range of groundnut rosette Assistor Virus in Western Kenya. *Journal of Plant Sciences*, 7(5): 100 – 105.
- Adego Antony Kigaru,^a Nils Poulicard,^b Agnès Pinel-Galzi,^b Benard Mukoye,^a Denis Fargette,^b Hassan Karakacha Wéré,^a Eugénie Hébrard, 2018. Full-Length Genome Sequences of Recombinant and Nonrecombinant Sympatric Strains of Rice yellow mottle virus from Western Kenya. *Genome Announcements*, Volume 6 Issue 8 e01508-17
- Devang M, Matthias H, Mariam W, Andrea P, Syed, **Hassan Were**, Wilhelm G and Hervé Vanderschuren 2018. A new full-length circular DNA sequencing method for viral-sized genomes reveals that RNAi transgenic plants provoke a shift in geminivirus populations in the field. *Nucleic Acids Research*, 914. doi.org/10.1093/nar/gky914
- Mangeni B.C., Ndong'a M, Mukoye B and **Were H.K.** 2018. Incidence and severity of Bean common mosaic disease and resistance of popular bean cultivars to the disease in western Kenya. *The African Journal of Rural Development*. In Press
- Mabele A.S., **Were H.K.**, Ndong'a M.F.O. Mukoye B., Orakha P.O., and Torrance L. 2018. Occurrence and Distribution of Groundnut Rosette disease in western Kenya. *The African Journal of Rural Development*. In Press
- L W Murere, B Mukoye, M Kollenberg, and **HK Were**. 2018. Effect of Seed Quality and Legume Diversification on Management of Bean Common Mosaic and Bean Common Mosaic Necrosis Viruses in Western Kenya. *IJAAR*, 2: 1-6
- D. W. Wosula, B.C. Mangeni, B. Mukoye, R.K. Leitich, M. Ndong'a, W. Arinaitwe, J. Ogecha, M.M. Abang and **H.K. Were**. (2017). Pest status of Black bean aphid on common bean in Agro-ecological zones of western Kenya. *International Journal of Innovative Research and Development*. Vol. 6(3), pp. 17-21.
- Leitich, RK, Arinaitwe W, Mukoye B, Omayio DO, Osogo AK, **Were HK**, Muthomi JW, Otsyula RM, Abang M M, 2017. Mapping of Angular Leaf Spot Disease Hotspot Areas in Western Kenya Towards Its Management. *American Journal of Applied Scientific Research*, 2: 75-81
- Kariaga, MG Wakhungu J, and **Were HK**, 2016. Identification of Rice Blast (*Pyricularia Oryzae* Cav.) Races from Kenyan Rice Growing Regions Using Culture and Classical Characterization. *Journal of Research in Agriculture and Animal Science*, 4:16 – 24
- Were, M. N., B, Mukoye, A. K. Osogo, B C Mangeni, P A Nyamwamu, VK Ogemah, J V Muoma, S Winter, **HK Were**. 2016. Occurrence and Distribution of Begomoviruses Infecting Cassava in Western Kenya. *Plant*. Vol. 4, No. 6, 2016, pp. 108-113. doi: 10.11648/j.plant.20160406.18
- Leitich RK, D. O. Omayio, B. Mukoye, B. C. Mangeni, D. W. Wosula, R. M. Otsyula, **H. K. Were**, M. M. Abang, 2016. Pathogenic Variability of Angular Leaf Spot Disease of

Common Bean in Western Kenya. *International Journal of Applied Agricultural Sciences*. Vol. 2, No. 6, pp. 92-98. doi: 10.11648/j.ijaas.20160206.13

- Were, HK**, Kabira J, Olubayo FM, Aura, J, and Torrance L., 2015. Aphids infesting potato in Kenya. In: CABI international 2015 (eds. J. Low et al), *Potato and sweet potato in Africa: Transforming the value chains for food security and nutrition*. P396 - 404.
- Mukoye, B, Mangeni¹, BC, Leitch RK, Wosula, DW, Nyamwamu, PA, Arinaitwe, W, Denis O. Omayio Winter S, Abang, MM, and **Were, HK**, 2015. First report and biological characterisation of Cow pea mild mottle virus (CPMMV) infecting Ground nut in Western Kenya. *JAAS Journal*. Vol. 3(10), pp. 1-5.
- Mangeni, BC, Abang, MM, Awale, H, Omuse, CN, Leitch R, Arinaitwe, W, Mukoye, B, Kelly JD and **Were, HK**, 2014. Distribution and pathogenic characterization of bean common mosaic virus (bcmv) and bean common mosaic necrosis virus (bcmnv) in western kenya. *JAAS Journal*. Vol. 2(10), pp. 308-316
- Nyamwamu PA, B Mukoye, AK Osogo, CN Omuse, S Ajanga and **Were, HK**, 2014. Distribution and biological characterization of potato virus y in Kenya. *JAAS*, **2(9)**, 258-264
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