

BENJAMIN KARIKARI, Ph.D.

University of Nebraska-Lincoln
Agronomy & Horticulture



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SUMMARY OF QUALIFICATIONS

Nanjing Agricultural University, Nanjing China

Ph.D. in Crop Genetics and Breeding

September 2017 – July 2020

- Distinguished International Student China Award, 2020 (RMB30,000)

Kwame Nkrumah University of Science and Technology, Kumasi Ghana

M.Sc. in Agronomy

August 2011 – July 2013

University of Cape Coast, Ghana

BSc in Agricultural Science

August 2004 – May 2008

PROFESSIONAL APPOINTMENTS

Assistant Professor of Practice in Plant Sciences (Non-tenure) *September 2025 - to-Present*

Department of Agronomy and Horticulture, Institute of Agriculture and Natural Resources,
University of Nebraska-Lincoln (UNL), United States

- Provide instruction in Agronomy, Biology and Genomics courses
- Develop a high-impact teaching program that gains national and international recognition in the field of plant sciences
- Serve on departmental and institutional committees

Postdoctoral Research Fellow, Soybean Functional Genomics *May 2023 - to- September 2025*

Université Laval, Département de Phytologie, Québec, Canada (Professor François Belzile's Lab)

- Identification and *in-silico* analysis of candidate gene(s) from QTL regions for root system architecture
- Functional validation of candidate gene(s) by CRISPR/Cas technology

Faculty Member (Lecturer and Researcher)

December 2020 – May 2023

Department of Agricultural Biotechnology, Faculty of Agriculture, Food and Consumer Sciences,
University for Development Studies (UDS), Tamale Ghana

August 2022 – May 2023

Department of Crop Sciences, Faculty of Agriculture, Food and Consumer Sciences, UDS, Tamale
Ghana

December 2020 – July 2022

Responsibilities and Achievements

- Prepared and delivered course content

- Assessed and graded students
- Conducted and published research work
- Wrote for grants to fund my research
- University and Community Service

USAID Cowpea Out-scaling Project Assistant

October 2015 – September 2017

International Institute of Tropical Agriculture (IITA) and CSIR-Savanna Agricultural Research Institute, Ghana

Responsibilities and Achievements

- Supported the day-to-day activities of the Cowpea Out-scaling Project, ensuring smooth execution of project tasks, timelines, and deliverables
- Worked closely with field staff and local partners to organize and coordinate cowpea farming activities, including training sessions, field visits, and demonstrations
- Worked with local governments, farmer groups, agricultural researchers, seed companies, and non-governmental organizations
- Assisted in organizing meetings, workshops, and events with stakeholders, including farmers, local government agencies, agricultural extension officers, and private sector partners
- Supported the collection of field data, including monitoring cowpea yield, pest and disease management, and other production practices
- Helped in tracking the progress of various project activities, including the adoption of improved cowpea varieties, pest management practices, and other technology out-scaling efforts
- Assisted in compiling and reporting on project outcomes, including progress on targets, challenges, and successes
- Organized and facilitated farmer training sessions on improved cowpea cultivation techniques, pest control, post-harvest handling, and best practices for productivity and profitability
- Encouraged the development of farmer groups or cooperatives for shared learning and mutual support among cowpea farmers
- Facilitated partnerships with private sector players, such as input suppliers, agro-dealers, and markets, to support the cowpea value chain
- Supported the preparation of periodic project reports by summarizing field activities, challenges, and successes
- Captured success stories and testimonials from farmers to showcase the impact of the project on livelihoods and food security

Development Officer Agriculture Extension

December 2009 – March 2015

Ministry of Food and Agriculture, The Government of Ghana

Responsibilities and Achievements

- Created and managed agricultural extension programs that promoted best agricultural practices, including crop production, livestock management, pest control and sustainable farming techniques
- Developed training materials and organized workshops on best agricultural practices
- Worked with local governments, farmer groups, agricultural researchers, seed companies, and non-governmental organizations

- Conducted farm and home visits, and provided on-site support to farmers in addressing issues like poor yield, pest infestations, or climate-related challenges
- Monitored the effectiveness of extension activities and adjusted programs to meet evolving needs
- Assisted in the implementation of agricultural policies and programs offering feedback from farmers to help shape government initiatives
- Promoted policies that improve access to farming inputs, markets, and financial services for farmers
- Worked closely with agricultural research institutions and universities to ensure extension programs align with the latest agricultural research and innovations
- Collected data on agricultural trends and farmers' challenges, and contributed to national agricultural statistics, and providing regular reports on extensions activities and impacts
- Promoted gender and, youth and marginalized groups inclusion in agriculture

GRANT AND FUNDING RECEIVED

2021 Young African Phosphorus (P) Fellowship Award from African Plant Nutrition Institute, University Mohammed VI Polytechnic and OCP Africa (\$5,000.00)

Achievements

- Assembled 350 soybean germplasm from international genebank to boost breeding P programs in Ghana
- Recruited and trained postgraduate students on screening of soybean germplasm under different rates of P fertilizer
- Soybean germplasm with efficient use of P identified and integrated into breeding programs in Ghana
- Evaluated common bean varieties in Ghana under different P rates (*manuscript ready for submission)

JOURNAL PUBLICATIONS (PEER-REVIEWED)

1. Ahiakpa, J. K., S. Munir, **B. Karikari**, F. Li, X. Zhang, P. Ge, J. Tao, H. Xu, G. Ai, W. Gai & Y. Zhang (2025). Alternative splicing occurs in auxin-mediated trade-off between fruit development and quality in tomato. *BMC Plant Biology* 25(1):1241 <https://doi.org/10.1186/s12870-025-07259-2>
2. Anani PY, Bayor H, **Karikari B**, Amegbor IK, Nyarko G, Hudu AR, & Labuschagne M (2025). Genetic diversity and population structure analysis of *Capsicum annuum* cultivated in the Northern region of Ghana using simple sequence repeat markers. *Cogent Food & Agriculture*, 11(1). <https://doi.org/10.1080/23311932.2025.2537137>.
3. Tabdeen I, Lamptey S & **Karikari B**(2025). Soybean (*Glycine max*(L.) Merrill) germplasm characterization on plant architecture and yield traits for potential mechanical harvest. *Discover Plants* 2, 211. <https://doi.org/10.1007/s44372-025-00297-y>.
4. Achina T, Amoako FA, Amoah S, **Karikari B**, Acheampong S, Quain SD & Salifu SP (2025). Molecular characterization of soybean accessions using ssr markers and unveiling the genetic diversity. *Molecular Biology Report* 52, 563 (2025). <https://doi.org/10.1007/s11033-025-10652-7>.

5. Yan W, Liang X, Li Y, Jiang X, Liu B, Liu L, Feng J, **Karikari B**, Zhao T, Jiang H, Zhu Y (2025). Genome-wide association analyses for revealing QTN, QTN-by-environment and QTN-by-QTN interactions in soybean phenology. *Theoretical and Applied Genetics* 138, 123 (2025). <https://doi.org/10.1007/s00122-025-04917-9>.
6. Aloryi KD, Okpala NE, Guo H, **Karikari B**, Amo A, Bello SF, Saini DK, Akaba S, Tian X (2025). Integrated meta-analysis and transcriptomics pinpoint genomic loci and novel candidate genes associated with submergence tolerance in rice. *BMC Plant Biology*, 25, 527 <https://doi.org/10.1186/s12870-025-06551-5>.
7. Appiah A, Akromah R, Kena AW, Annor B, Amoah S, Owusu EY, Karikari B (2025). Genetic diversity among Ghanaian Okra (*Abelmoschus esculentus* L.) Germplasm using Morphological and Molecular markers. *Ecological Genetics and Genomics*. 35:100347. <https://doi.org/10.1016/j.egg.2025.100347>
8. Yusuph KS, Nkhabindze B, Ratemo BO, Dada SA, Ogbimi ER, **Karikari B**, Nuaila VN, Toili ME, Ndudzo A, Adetunji PCO, Fotabong E & Akinbo O (2025). The Role of Young Scientists in Promoting Genome Editing for Sustainable Agriculture and Food Systems in Africa. *Frontiers in Sustainable Food Systems*, 9, p.1530800. <https://doi.org/10.3389/fsufs.2025.1530800>
9. Aleem M, Razzaq MK, Siddiqui MH, Aleem M, Yan W, Sharif I, Aleem S, Iftikhar MS, Karikari B, Ali Z, Akhtar N & Zhao T (2024). Genome-wide association study provides new insight into the underlying mechanism of drought tolerance during seed germination stage in soybean. *Scientific Reports*, 14:20765. <https://doi.org/10.1038/s41598-024-71357-8>
10. Anani PY, Bayor H, **Karikari B**, Amegbor IK, Nyarko G, Hudu AR & Labuschagne M (2024). Exploring morphological variation and stability in hot pepper (*Capsicum annuum*) germplasm collection from the northern region of Ghana. *Scientia Horticulturae*, 337, 113509. <https://doi.org/10.1016/j.scienta.2024.113509>
11. Zhang P, Yang Z, Jia S, Chen G, Li N, **Karikari B** & Cao Y (2024). Genome-Wide Association Study and Candidate Gene Mining of Seed Size Traits in Soybean. *Agronomy*, 14, 1183. <https://doi.org/10.3390/agronomy14061183>
12. Adu GB, Awuku FJ, Garcia-Oliveira AL, Amegbor IK, Nelimor C, Nboyine J, **Karikari B**, Atosona B. (2024). DArTseq-based SNP markers reveal high genetic diversity among early generation fall armyworm tolerant maize inbred lines. *PLoS ONE* 19(4): e0294863. <https://doi.org/10.1371/journal.pone.0294863>
13. Aloryi KD, Okpala NE, Guo H, **Karikari B**, Amo A, Bello SF, Saini DK, Akaba S, Tian X. (2024). Integrated meta-analysis and transcriptomics pinpoint genomic loci and novel candidate genes associated with submergence tolerance in rice. *BMC Genomics*. 25, 338. <https://doi.org/10.1186/s12864-024-10219-z>
14. Sharmin RA, **Karikari B**, Bhuiyan MR, Kong K, Yu Z, Zhang C, Zhao T. (2024). Comparative Morpho-Physiological, Biochemical, and Gene Expression Analyses Uncover Mechanisms of Waterlogging Tolerance in Two Soybean Introgression Lines. *Plants*; 13(7):1011. <https://doi.org/10.3390/plants13071011>
15. Antwi-Boasiako A, Jia S, Liu J, Guo N, Chen C, **Karikari B**, Feng J, and Zhao T. (2024). Identification and Genetic Dissection of Resistance to Red Crown Rot Disease in a Diverse Soybean Germplasm Population. *Plants*, 13, 940. <https://doi.org/10.3390/plants13070940>
16. Wang L, **Karikari B**, Zhang H, Zhang C, Wang Z, Zhao T, and Feng J (2024) Comprehensive Identification of Main, Environment Interaction and Epistasis Quantitative Trait Nucleotides for 100-Seed Weight in Soybean (*Glycine max* (L.) Merr.). *Agronomy*, 14, 483. <https://doi.org/10.3390/agronomy14030483>

17. Hina A, Khan N, Kong K, Lv W, **Karikari B**, Abbasi A and Zhao T (2024). Exploring the role of *FBXL* gene family in Soybean: Implications for plant height and seed size regulation. *Physiologia Plantarum*, 176(1), e14191. <https://doi.org/10.1111/ppl.14191>
18. Raza A, Bashir S, Khare T, **Karikari B.**, Copeland R.G.R, Jamla M, Saghir A, Sidra C, Spurthi N. N, Ivica D, Rosa M. R, Kadambot H. M. S and Rajeev K. V (2024). Temperature-smart plants: A new horizon with omics-driven plant breeding. *Physiologia Plantarum*, 176(1), e14188. <https://doi.org/10.1111/ppl.14188>.
19. Uyanga VA, Bello SF, Bosco NJ, Jimoh SO, Mbadianya IJ, Kanu UC, Okoye CO, Afriyie E, Mak-Mensah, E, Agyenim-Boateng KG, Ogunyemi SO, Nkoh JN, Olasupo IO, **Karikari B***, and Ahiakpa JK (2024). Status of agriculture and food security in post-COVID-19 Africa: Impacts and lessons learned. *Food and Humanity* 2, 100206. <https://doi.org/10.1016/j.fooHum.2023.100206>.
20. Yan W, Jiang H, Xu J, Li T, Begum N, **Karikari B**, Liu L and Zhao T (2023). Genetic analysis of genotype-specific parameters in the DSSTA-CROPGRO-soybean phenology simulation model via a multi-GWAS method. *Field Crops Research*, 304:109165. <https://doi.org/10.1016/j.fcr.2023.109165>
21. **Karikari B**, Lemay M-A, Belzile F (2023). *k*-mer-Based Genome-Wide Association Studies in Plants: Advances, Challenges, and Perspectives. *Genes*, 14(7):1439. <https://doi.org/10.3390/genes14071439>
22. Razzaq KM, Hina A, Abbasi A, **Karikari B**, Ashraf HA, Mohiuddin M, Maqsood, Maqsood A, Ul Haq I, Xing G, Raza G and Bhat JA (2023). Molecular and genetic insights into secondary metabolic regulation underlying insect-pest resistance in legumes. *Functional & Integrative Genomics*, 23(3):217. <https://doi.org/10.1007/s10142-023-01141-w>
23. Raza A, Charagh S, **Karikari B**, Sharif R, Yadav V, Mubarik MS, Habib M, Zhuang Y, Zhang C, Chen H, Varshney RK, and Zhuang W (2023). miRNAs for crop improvement. *Plant Physiology and Biochemistry*, 201:10785. <https://doi.org/10.1016/j.plaphy.2023.107857>
24. **Karikari B***, Maale, MD, Anning, E, Akakpo, DB, Abujaja, AM, and Addai, IK (2023). Cowpea cropping systems, traits preference and production constraints in the upper west region of Ghana: farmers' consultation and implications for breeding. *CABI Agriculture and Bioscience*, 4:17 (2023). <https://doi.org/10.1186/s43170-023-00159-1>
25. Tadda SA, Li C, Ding J, Li J, Wang J, Huang H, Fan Q, Chen L, He P, Ahiakpa JK, **Karikari B**, Chen X and Qiu D (2023). Integrated metabolome and transcriptome analyses provide insight into the effect of red and blue LEDs on the quality of sweet potato leaves. *Frontiers in Plant Science*, 14:1181680. <https://doi.org/10.3389/fpls.2023.1181680>
26. Effah Z, Li L, Xie J, **Karikari B**, Xu A, Wang L, Du C, Duku Boamah E, Adingo S and Zeng M (2023). Widely untargeted metabolomic profiling uncovers metabolites and pathways involved in leaf senescence and N remobilization in spring-cultivated wheat under different N regimes. *Frontiers in Plant Science*, 14:1166933. <https://doi.org/10.3389/fpls.2023.1166933>.
27. Oteng-Frimpong R, **Karikari B***, Sie KS, Kassim BY, Puzozaa DK, Rasheed MA, Fonceka D, Okello DK, Balota M, Burow M, Ozias-Akins P. (2023). Multi-Locus Genome-Wide Association Studies Reveal Genomic Regions and Putative Candidate Genes Associated with Leaf Spot Diseases in African Groundnut (*Arachis hypogaea* L.) Germplasm. *Frontiers in Plant Science*, 13:1076744. <https://doi.org/10.3389/fpls.2022.1076744>.
28. Effah Z, Li L, Xie J, **Karikari B**, Liu C, Xu A & Zeng M. (2022). Transcriptome profiling reveals major structural genes, transcription factors and biosynthetic pathways involved in leaf senescence and nitrogen remobilization in rainfed spring wheat under different nitrogen fertilization rates. *Genomics*, 114(2), 110271. <https://doi.org/10.1016/j.ygeno.2022.110271>

29. Coulibaly D, Hu GF, Ni ZJ, Omondi KO, Huang X, Iqbal S, Ma CD, Shi T, Hayat F, **Karikari B** & Gao Z (2022). A Key Study on Pollen-Specific SFB Genotypes and Identification of Novel SFB Alleles from 48 Accessions in Japanese Apricot (*Prunus mume* Sieb. et Zucc.). *Forest*, 13, 1388. <https://doi.org/10.3390/f13091388>.
30. Coulibaly D, Huang X, Ting S, Iqbal S, Ni ZJ, Omondi KO, Hayat F, Tan W, Hu GF, Ma CD, **Karikari B**, Magdy M & Gao Z (2022). Comparative analysis of complete chloroplast genome and phenotypic characteristics of Japanese apricot accessions. *Horticulturae*, 8, 794. <https://doi.org/10.3390/horticulturae8090794>.
31. Dormatey, R.; Qin, T.; Wang, Y.; Karikari, B.; Dekomah, S.D.; Fan, Y.; Bi, Z.; Yao, P.; Ali, K.; Sun, C.; Bai, J. (2022). Comparative Transcriptome Profiling Reveals Potential Candidate Genes, Transcription Factors, and Biosynthetic Pathways for Phosphite Response in Potato (*Solanum tuberosum* L.). *Genes*, 13, 1379. <https://doi.org/10.3390/genes13081379>.
32. Cao Y, Jia S.H, Chen L. X, Zeng X. N, Zhao T, & **Karikari B** (2022). Identification of major genomic regions for soybean seed weight by genome-wide association study. *Molecular Breeding*, 42:38. <https://doi.org/10.1007/s11032-022-01310-y>.
33. Bhat JA, **Karikari B**, Ganie SA, Hu D & Yu D (2022). Identification of Superior Haplotype Alleles in a Diverse Natural Population for Breeding Desirable Plant Height in Soybean. *Theoretical and Applied Genetics*. 135(7): 2407-2422. <https://doi.org/10.1007/s00122-022-04120-0>.
34. Ahiakpa JK, Cosmas TN, Anyiam FE, Enalume KO, Lawan I, Gabriel IB, Oforka CL, Dahir HG, Fausat ST, Nwobodo MA, Massawe GP, Adachukwu SO, Okeh DU, **Karikari B**, Aderonke ST, Awoyemi OM, Aneyo IA & Doherty FV (2022). Public knowledge, awareness, perception and acceptance of COVID-19 vaccines in Africa. *PLoS One*. 17(6): e0268230. <https://doi.org/10.1371/journal.pone.0268230>.
35. Amevor FK, Cui Z, Du X, Feng J, Shu G, **Karikari B**, Ning Z, Xu D, Deng X, Song W, Jin N, Huang X, Wu H, Cao X, Shuo W, He J, You G, Tian Y, Li D, Wang Y, Zhang Y, Zhu Q & Xiaoling Z (2022). Synergy of dietary combination of quercetin and vitamin E improves the cecal microbiota and metabolite profile in aged breeder hens. *Frontiers in Microbiology*. 13:851459. <https://doi.org/10.3389/fmicb.2022.851459>.
36. Razzaq MK, Akhtar M, Ahmad MM, Cheema KL, Hina A, **Karikari B**, Raza G, Xing G, Gai J, Khurshid M (2022). CRISPR-Cas9 based stress tolerance: New hope for abiotic stress tolerance in chickpea (*Cicer arietinum*). *Molecular Biology Reports*. 49, 8977–898. <https://doi.org/10.1007/s11033-022-07391-4>.
37. Wolde Z, Wei W, Ketema H & **Karikari B** (2022). Quantifying Sustainable Land-Water-Energy-Food Nexus: The Case of Sustainable Livelihoods in an East African Rift Valley. *Atmosphere* 13, no. 4: 638. <https://doi.org/10.3390/atmos13040638>.
38. Siteo HM, Zhang Y, Chen S, Li Y, Ali M, Ognigamal S, **Karikari B**, Liu E, Dang X, Qian H & Hong D (2022). Detection of QTLs for plant height architecture traits in rice (*Oryza sativa* L.) by association mapping and the RSTEPLRT method. *Plants*. 11(7):999. <https://doi.org/10.3390/plants11070999>.
39. Effah Z, Li L, Xie J, **Karikari B**, Liu C, Wang J, Zeng M, Wang L, Boamah S & Shanthi JP (2022). Post-anthesis Relationship Between Nitrogen Isotope Discrimination and Yield of Spring Wheat Under Different Nitrogen Levels. *Frontiers in Plant Science*, 13:859655. <https://doi.org/10.3389/fpls.2022.859655>.
40. Effah Z, Li L, Xie J, Liu C, Xu A, **Karikari B**, Anwar S & Zeng M (2022). Regulation of nitrogen metabolism, photosynthetic activity and yield attributes of spring wheat by nitrogen fertilizer at loess plateau region. *Journal of Plant Growth and Regulations*. 42, 1120–1133

<https://doi.org/10.1007/s00344-022-10617-1>.

41. Osuman AS, Badu-Apraku B, Ifie BE, Nelimor C, Tongoona P, Obeng-Bio E, **Karikari B**, & Danquah EY (2022). Combining Ability and Heterotic Patterns of Tropical Early-Maturing Maize Inbred Lines under Individual and Combined Heat and Drought Environments. *Plants*, 11(10), 1365. <https://doi.org/10.3390/plants11101365>.
42. Osuman AS, Badu-Apraku B, **Karikari B**, Ifie BE, Tongoona P & Danquah EY (2022). Genome-Wide Association Study Reveals Genetic Architecture and Candidate Genes for Yield and Related Traits Under Terminal Drought, Combined Heat and Drought in Tropical Maize Germplasm. *Genes*, 13:349. <https://doi.org/10.3390/genes13020349>.
43. Li Y, Chu L, Liu X, Zhang N, Xu Y, **Karikari B**, Wang Y, Chang F, Liu Z, Tan L, Yue H, Xing G & Zhao T (2022). Genetic Architecture and Candidate Genes for Pubescence Length and Density and Its Relationship With Resistance to Common Cutworm in Soybean. *Frontiers in Plant Science*, 12:771850. <https://doi.org/10.3389/fpls.2021.771850>.
44. Shaibu AS, Ibrahim H, Miko ZL, Mohammed IB, Mohammed SG, Yusuf HL, Kamara AY, Omoigui, LO, **Karikari B** (2022). Assessment of the Genetic Structure and Diversity of Soybean (*Glycine max* L.). Germplasm Using Diversity Array Technology and Single Nucleotide Polymorphism Markers. *Plants*, 11: 68. <https://doi.org/10.3390/plants11010068>.
45. Ahiakpa JK, **Karikari B**, Magdy M, Munir S, Mumtaz MA, Li F, Wang Y, Shang L & Zhang Y. (2021). Regulation of invertase and sucrose for improving tomato fruit flavor: A review. *Vegetable Research*, 1:10. <https://doi.org/10.48130/VR-2021-0010>.
46. Sharmin RA, **Karikari B**, Chang F, Al Amin GM, Bhuiyan MR, Hina A, Lv W, Chunting Z, Begum N & Zhao T (2021). Genome-wide Association Study Uncovers Major Genetic Loci Associated with Seed Flooding Tolerance in Soybean. *BMC Plant Biology*, 21, 497. <https://doi.org/10.1186/s12870-021-03268-z>.
47. Yan W, **Karikari B**, Chang F, Zhang Z, Li D, Zhao T & Jiang H. (2021). Genome-Wide Association Study Unearths Genetic Bases and Candidate Genes for Four Growth Stage Traits in Summer Sowing Soybeans. *Frontiers in Genetics*, 12:715529. <https://doi.org/10.3389/fgene.2021.715529>.
48. Fudjoe SK, Li L, Jiang, Y, **Karikari B**, Xie J, Wang L, Anwar S & Wang J. (2021). Soil Amendments Alter Ammonia-Oxidizing Archaea and Bacteria Communities in Rain-Fed Maize Field in Semi-Arid Loess Plateau. *Land*, 10: 1039. <https://doi.org/10.3390/land10101039>.
49. Yeboah A, Lu J, Ting Y, **Karikari B**, Shi Y, Liang W, Pan J & Yin X (2021). Genome-wide association study identifies loci, beneficial alleles and putative candidate genes for cadmium tolerance in castor (*Ricinus communis* L.). *Industrial Crops and Products*, 171:113842. <https://doi.org/10.1016/j.indcrop.2021.113842>.
50. Owusu EY, **Karikari B**, Kusi F, Haruna M, Amoah RA, Attamah P, Adazebra G, Sie EK & Issahaku M (2021). Genetic Variability, Heritability and Correlation Analysis among Maturity and Yield Traits in Cowpea (*Vigna unguiculata* (L) Walp) in Northern Ghana. *Heliyon*, e07890. <https://doi.org/10.1016/j.heliyon.2021.e07890>.
51. Magdy M, Appiah A, Rizk S, Elhifnawi H, **Karikari B**, Ahiakpa J & El-DougDoug N (2021). Genome Sequence of an Okra Leaf Curl Virus from Egypt. *Microbiology Resource Announcements*, 10(29): e00533-21. <https://doi.org/10.1128/MRA.00533-21>.
52. Xiao Y[†], **Karikari B**[†], Wang L, Chang F, Zhao T (2021). Structure characterization and potential role of soybean phospholipases A multigene family in response to multiple abiotic

- stress uncovered by CRISPR/Cas9 technology. *Environmental and Experimental Botany*, 104:521. <https://doi.org/10.1016/j.envexpbot.2021.104521>. († equal contribution)
53. Ahiakpa JK, Magdy M., **Karikari B.**, Munir S., Saira M., Ali MM., Ahmad TS., Liu G., Chen W., Wang Y. & Zhang Y (2021). Genome-wide identification and expression profiling of tomato invertase genes indicate their response to stress and phytohormones. *Journal of Plant Growth*. 41, 1481–149. <https://doi.org/10.1007/s00344-021-10384-5>.
 54. Elattar MA, **Karikari B**, Li S, Song S, Cao Y, Aslam M, Hina A, Abou-Elwafa SF & Zhao T (2021). Identification and validation of major QTLs, epistatic interactions and candidate genes for soybean seed shape and weight using two related RIL populations. *Frontiers in Genetics*, 12:666440. <https://doi.org/10.3389/fgene.2021.666440>.
 55. Chang F, Lv W, Lv P, Xiao Y, Yan W, Chen S, Zheng L, Xie P, Wang L, **Karikari B**, Abou-Elwafa SF, Jiang H & Zhao T (2021). Exploring genetic architecture for pod-related traits in soybean using image-based phenotyping. *Molecular Breeding*, 41(4). <https://doi.org/10.1007/s11032-021-01223-2>.
 56. Cao Y, Zhang X, Jia S, **Karikari B**, Zhang M, Xia Z, Zhao T & Liang F (2021). Genome-wide association among soybean accessions for the genetic basis of salinity-alkalinity tolerance during germination. *Crop and Pasture Science*, 72(4), 255-267. <https://doi.org/10.1071/CP20459>.
 57. **Karikari B**, Wang Z, Zhou Y, Yan W, Feng J, & Zhao T (2020). Identification of Quantitative Trait Nucleotides and Candidate Genes for Soybean Seed Weight by Multiple Models of Genome-wide Association Study. *BMC Plant Biology*, 20:404. <https://doi.org/10.1186/s12870-020-02604-z>.
 58. **Karikari B**, Bhat JA, Denwar NN & Zhao T (2020). Exploring the Genetic Base of the Soybean Germplasm from Africa, America & Asia as well as Mining of Beneficial Allele for Flowering and Seed-weight. *3Biotech*, 10:195. <https://doi.org/10.1007/s13205-020-02186-5>.
 59. Owusu EY, Amadu MA, Haruna M, Adjebeng-Danquah J, Kusi F, **Karikari B** & Sie EK (2020). Diallel analysis and heritability of grain yield, yield components and maturity traits in cowpea in northern Ghana. *The Scientific World Journal*, 9390287, 9. <https://doi.org/10.1155/2020/9390287>.
 60. **Karikari B**, Li S, Bhat JA, Cao Y, Kong J, Yang J, Gai J & Zhao T (2019). Genome-Wide Detection of Major and Epistatic Effect QTLs for Seed Protein and Oil Content in Soybean Under Multiple Environments Using High-Density Bin Map. *International Journal of Molecular Sciences*, 20(4), 979. <https://doi.org/10.3390/ijms20040979>.
 61. **Karikari B**, Chen S, Xiao Y, Chang F, Zhou Y, Kong J, Bhat JA, & Zhao T (2019). Utilization of Interspecific High-Density Genetic Map of RIL Population for the QTL Detection and Candidate Gene Mining for 100-Seed Weight in Soybean. *Frontiers in Plant Science*, 10:1001. <https://doi.org/10.3389/fpls.2019.01001>.
 62. Cao Y, Li S, Chen G, Wang Y, Bhat JA., **Karikari B**, Kong J., Gai J., & Zhao, T (2019). Deciphering the Genetic Architecture of Plant Height in Soybean using Two RIL Populations Sharing Common Parent M8206. *Plants*, 8:373; <https://doi.org/10.3390/plants8100373>.
 63. **Karikari B***, Arkorful E. & Addy S (2015). Growth, Nodulation and Yield Response of Cowpea to Phosphorus Fertilizer Application in Ghana. *Journal of Agronomy*, 14 (4): 234-240. <https://doi.org/10.3923/ja.2015.234.240>.
 64. **Karikari B*** & Arkorful E (2015). Effect of Phosphorus Fertilizer on Dry Matter Production and Distribution in Three Cowpea (*Vigna unguiculata* L. Walp.) Varieties in Ghana. *Journal of Plant Sciences*, 10 (5): 167-178. <https://doi.org/0.3923/jps.2015.167.178>.

BOOK CHAPTERS (PEER-REVIEWED)

1. **Karikari B**, Bhat JA, Ahiakpa JA & Addy SNTT (2023). Use of Cutting-Edge Technologies for Pulse Crops Improvement. In Smart Breeding - Molecular Interventions and Advancements for Crop Improvement (eds: Chandra K, Chand S, Saini RP and Sharma R.). CRC Press, Taylor and Francis Group. Chapter 3, pp.61-104. ISBN hard: 978-1-77491-331-4. Ebook ISBN: 9781003361862.
2. Yirzagla J, Atokple IDK, Haruna M, Abdul Razak M, Adobaba D, Haruna B & **Karikari B** (2021). Impacts of cowpea innovation platforms in sustaining TL III project gains in Ghana. In E. Akpo et al. (eds.) *Enhancing Smallholder Farmers' Access to Seed of Improved Legume Varieties Through Multi-stakeholder Platforms*, pp. 171-183. Springer, Singapore.
https://doi.org/10.1007/978-981-15-8014-7_12.

BLOG POST

1. Ahiakpa JK, Gakpo JO and **Karikari B** (2023). GMOs versus gene-edited products: The key differences you should know of. Available on <https://www.beta.myjoyonline.com/gmos-versus-gene-edited-products-the-key-differences-you-should-know-of/>
2. Ahiakpa JK, Gakpo JO and **Karikari B** (2023). Getting published in academic journals. Available on <https://www.authoraid.info/en/news/details/1755/>

EDITORIAL

1. Abdul Rahman N, Kotu BH, Tetteh FM, **Karikari B**, Akinseye FM, Ansah T, Mutungi C and Kizito F (2024) Editorial: Sustainable intensification of smallholder farming systems in Sub-Saharan Africa and South Asia. *Frontiers in Sustainable Food Systems*. 8:1399430.
<https://doi.org/10.3389/fsufs.2024.1399430>

PROTOCOL DEVELOPMENT

1. Amagloh, FC, Atokple, IDK, Mohammed AR., **Karikari B.**, Haruna B, Yirzagla J, Owusu EY, Iddi M, Munir HS and Gbeadese J (2017). Cowpea Utilization in Ghanaian Traditional Dishes and Continental Composite Flour Products – Preparation Manual. Council for Scientific and Industrial Research-Savanna Agricultural Research Institute, Ghana. Available on <https://www.researchgate.net/publication/351698306>.
2. The USAID Cowpea Project, CSIR-SARI, IITA and MoFA (2017). Successful Cowpea Production Guide, USAID Cowpea Project. Available at CSIR-SARI.

CONFERENCES/RESEARCH TALKS

- **Karikari B**, Seck W, Torkamaneh and Belzile F (2025). Oral Presentation (CRISPR/Cas9-Mediated Targeted Mutagenesis of an Auxin Transport Gene (*GmAUX1-Like*) Alters Root System Architecture in Soybean) in the Session Leveraging Advances in Multi-Omics Technologies for Resilient Agri-Food Systems in Africa. 2024 Plant and Animal Genome (PAG31) Conference held in San Diego, California, United States (January 10-15, 2025)

- **Karikari B**, Seck W, Torkamaneh and Belzile F(2025). **Poster Presentation** (CRISPR/Cas9-Mediated Targeted Mutagenesis of an Auxin Transport Gene (*GmAUX1-Like*) Alters Root System Architecture in Soybean). 2024 Plant and Animal Genome (PAG31) Conference held in San Diego, California, United States (January 10-15, 2025, **Gene Editing/CRISPR**)
- **Karikari B** (2024). Leveraging CRISPR/Cas9 for Improving Phosphorus Efficient Soybean Cultivars & Rooting System. Young African Scientists Leading the Way - Genome Editing in Agricultural Biotechnology - Webinar Series 2 Workshop, held on July 25, 2024 organized by African Union Development Agency
- **Karikari B**, Seck W, Torkamaneh and Belzile F (2024). Oral Presentation (functional validation of a candidate gene controlling soybean root system architecture by CRISPR-Cas9 technology), Plant Canada 2024. Plants: Adapting to a Changing World. July 7-10, 2024 at RBC Convention Centre, Winnipeg Manitoba, Canada.
- **Karikari B**, Lemay MA and Belzile F (2024). Poster Presentation (k -mer-Based Genome-Wide Association Studies in Plants: Advances, Challenges, and Perspectives), 2024 Plant and Animal Genome (PAG31) Conference held in San Diego, California, United States (January 12-17, 2024)
- **Karikari B** (2021). Oral Presentation (CRISPR/Cas9 Unearths the Potential Role of Phospholipases A Multigene Family for Breeding Phosphorus Efficient Soybean Cultivars) 2021 West African Plant Breeding Symposium by CORTEVA Agriscience held on October 13, 2021 (online)
- **Karikari B** (2021). Oral Presentation (CRISPR/Cas9-mediated targeted mutagenesis of *GmPLA*s genes improves soybean response to Iron deficiency condition), Society for the Advancement of Science in Africa (SASA), Eighth Annual International (digital) Conference, Joint SASA and CSIR (Ghana) held on November 11-14, 2021, Accra, Ghana

PROFESSIONAL SERVICE

- Examination Officer, Department of Agricultural Biotechnology, Faculty of Agriculture, Food and Consumer Sciences, University for Development Studies, Tamale Ghana (*August 2022 – May 2023*)
- Postgraduate Coordinator, Department of Crop Sciences, Faculty of Agriculture, Food and Consumer Sciences, University for Development Studies, Tamale Ghana (*December 2020 – July 2022*)

EDITORIAL ROLE

- Topic Editor, Frontiers in Sustainable Food System on the topic Sustainable Intensification of Smallholder Farming Systems in Sub-Saharan Africa and South Asia. August 2022-December 2022
- Guest Editor, MDPI Plants on the special issue Germplasm Resources and Soybean Breeding). August 2021-December 2022

PEER-REVIEWER (SELECTED JOURNALS)

- Plant Communications
- Journal of Plant Biotechnology
- The Plant Genome
- Theoretical and Applied Genetics
- Genomics
- Plant Breeding
- BMC Plant Biology
- BMC Genomics
- Frontiers in Plant Science
- Multidisciplinary Digital Publishing Institute: International Journal of Molecular Sciences, Agriculture, Life, Horticulturae, Sustainability and Agronomy
- Scientia Horticulturae
- Scientific Reports
- Legume Research
- Acta Agriculturae Scandinavica, Section B - Soil & Plant Science