**CURRICULUM VITAE**

**PRINCE EMMANUEL NORMAN**

**PLANT BREEDER/ DEPUTY DIRECTOR GENERAL, RESEARCH, TECHNOLOGY AND INNOVATION DEVELOPMENT**

**SIERRA LEONE AGRICULTURAL RESEARCH INSTITUTE (SLARI)**

**PERSONAL DETAILS**

DATE OF BIRTH: 7th November, 1977

PLACE OF BIRTH: Moyamba, Moyamba District, Southern Province, Sierra Leone

NATIONALITY: Sierra Leonean

MARITAL STATUS: Married

RESIDENTIAL ADDRESS: BQ 3 Site 1 Residence, Njala Agricultural Research Centre (NARC), Njala

CONTACT ADDRESS: Njala Agricultural Research Centre, PMB 540, Freetown, Sierra Leone / Sierra Leone Agricultural Research Institute (SLARI), PMB 1313, Tower Hill, Freetown, Sierra Leone, West Africa.

CONTACT NUMBER: +232-76-618454

HOBBIES: Reading, Teaching and Listening

E-MAIL ADDRESS: p.norman@slari.gov.sl / pnorman@wacci.ug.edu.gh /penorman2008@yahoo.com /norman.prince64@gmail.com

**1. QUALIFICATIONS**

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| **YEAR** | **INSTITUTION** | **QUALIFICATION** |
| 2016 – 2019  | University of Ghana | PhD Plant Breeding |
| 2009 – 2011 | University of KwaZulu-Natal, South Africa | M.Sc. Plant Breeding |
| 2005 – 2006  | Njala University, Sierra Leone | M.Sc. Crop Science |
| 1999 – 2003  | Njala University College, University of Sierra Leone | B.Sc. (Hons.), Crop Science |

**2. RESEARCH/ PROFESSIONAL EXPERIENCE**

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| **YEAR** | **EXPERIENCE** |
| April 2004 – October 2006  | Research Assistant, Crop Improvement, IAR. Write research proposals, work, supervise research work, and produce written report and presentation to external audiences  |
| November, 2006 – September, 2008  | Research Officer III, Crop Improvement, IAR. Responsible for the formulation, design and implementation of trials on yam, data collection, and analysis and reporting. Conduct participatory variety selection (PVS) trials on farmers’ field on yam. |
| January, 2009 – July, 2011 | Research Officer III, Crop Improvement, NARC. Responsible for the formulation, design and implementation of trials on yam, data collection, and analysis and reporting. Conduct participatory variety selection (PVS) trials on farmers’ field on yam. |
| August 2011 – January 2016 | Research Officer II, Crop Improvement, NARC. Yam and cocoyam improvement programme leader. |
| January 2016 – December 2019 | Study leave. |
| 2020 | Research Officer I, Crop Improvement, NARC. Yam and cocoyam improvement programme leader |
| March, 2024 | Chief Research Officer (CRO) / Deputy Director General, Research, Technology and Innovation Development, SLARI. |

**3. RESEARCH AND PUBLICATION**

**(a) Research article and review publications**

(1) Lahai, M.T., Alpha, M.G., Boima, B., & **Norman, P.E.** (2006). Effect of time of Debudding and planting density on the growth and yield of okra during the wet and dry seasons. *Journal of Pure and Applied Science*, 10, 79-86.

(2) **Norman, P.E.,** Tongoona, P., & Shanahan, P.E. (2011). Diversity of morphological traits of yam (Dioscorea spp.) genotypes from Sierra Leone. Journal of Applied Biosciences 45: 3045–3058.https://www.semanticscholar.org/paper/Diversity-of-the-morphological-traits-of-yam-spp.%29-Norman-Tongoona/f594a878196196eb30a1d4fc5d523cd65cbeba19

(3) **Norman, P.E.,** Tongoona, P., & Shanahan, P.E. (2011). Determination of interrelationships among agro-morphological traits of yams (Dioscorea spp.) using correlation and factor analyses. *Journal of Applied Biosciences*, 45, 3059–3070. at [www.biosciences.elewa.org](http://www.biosciences.elewa.org) or <https://www.semanticscholar.org/paper/Determination-of-interrelationships-among-agro-of-Norman-Tongoona/568f8f328506e97c8ced71fa61c9fc0456cb619e>

(4) **Norman, P.E.,** Tongoona, P., & Shanahan, P.E. (2012). Determination of associations between three morphological and two cytological traits of yams (Dioscorea spp.) using canonical correlation analysis, *African Journal of Agricultural Research*, 7(17), 2674–2678. DOI: 10.5897/AJAR11.1299

(5) **Norman, P.E.,** Tongoona, P., & Shanahan, P.E. (2012). Diversity in chromosome number and raphide morphology of yam (Dioscorea spp.) genotypes from Sierra Leone. *African Journal of Plant Science*, 6(4), 157–160. DOI:10.5897/AJPS11.247

(6) **Norman, P.E.,** Tongoona, P., Danson, J., & Shanahan, P.E. (2012). Molecular characterization of some cultivated yam (Dioscorea spp.) genotypes in Sierra Leone using simple sequence repeats. *International Journal of Agronomy and Plant Production*, 3(8), 265–273. [http://ijappjournal.com/.../265-273.pdf](http://ijappjournal.com/wp-content/uploads/2012/265-273.pdf)

(7) Sesay, L., **Norman, P.E,** Massaquoi, A., Kobba, F., Allieu, A.P, Gboku, M.L., & Fomba, S.N. (2013). Assessment of farmers’ indigenous knowledge and selection criteria of yam in Sierra Leone. Sky Journal of Agricultural Research 2(1): 1–6. http://www.skyjournals.org/SJAR

(8) Beah, A.A., **Norman, P.E.,** Scholberg, J.C., Lantinga, E.A., & Conteh, A.R. (2014). Effect of green manures on nitrogen uptake and yield of cauliflower (Brassica oleracea var. botrytis). *International Journal of Applied Agricultural Research*, 9(1), 73–84. http://www.ripublication.com

(9) **Norman, P.E.,** Beah, A.A, Samba, J.A., Tucker, M.J., Lissa, J., Koroma, F., Benya, M.T., & Fomba, S.N. (2014). Agro-phenotypic characterization of sweet potato (*Ipomoea batatas* L.) genotypes using factor and cluster analyses. *Agricultural Science Research Journals*, 4(2), 30-38. Available online at http://www.resjournals.com/ARJ

(10) Beah, A.A., **Norman, P.E.,** Scholberg, J.C., Lantinga, E.A., & Conteh, A.R. (2014). Effect of organic manures on soil bio-physical properties and dry matter partitioning in cauliflower, *International Journal of Plant and Soil Sciences*, 3(9), 1044–1054.DOI:[10.9734/IJPSS/2014/11256](https://doi.org/10.9734/IJPSS/2014/11256)

(11) Beah, A.A., **Norman, P.E.,** Scholberg, J.C., Lantinga, E.A., & Conteh, A.R. (2015). Effect of Organic Manure on Nitrogen Mineralization, Nitrogen Accumulation, Nitrogen Use Efficiency and Apparent Nitrogen Recovery of Cauliflower (*Braccica oleracea* L*.*, var. Botrytis). *International Journal of Plant and Soil Sciences*, 4(3), 265–272.  <http://www.sciencedomain.org/review-history/6552>

(12) **Norman P.E.,** Whyte, J.B.A., Samura, A.E., Massaquoi, A., Sesay, L., Dixon, A.G.O., Fomba, S.N., Benya, M.T., & Sowa, M.M. (2015). Effect of staking and non-staking systems on disease severity, yield and quality attributes of yams (*Dioscorea alata*). *Journal of Agriculture and Ecology Research International*, 2(4), 219–229.DOI:[10.9734/JAERI/2015/14713](https://doi.org/10.9734/JAERI/2015/14713)

(13) **Norman P.E.,** Bebeley, J.F., Beah, A.A., & Sellu, E.F. (2015). Assessment of agro-morphological diversity and affinities in cocoyam species from Sierra Leone. *International Journal of Biodiversity and Conservation*, 7(10), 408–419. DOI: 10.5897/IJBC2015.0883

(14) Sesay, J.V., Ayeh, K.O., **Norman, P.E.,** & Acheampong, E. (2016). Shoot nodal cultureand virus indexing of selected local and improved genotypes of cassava (*Manihot esculenta*) from Sierra Leone. *International Journal of Biotechnology and Molecular Biology Research*, 7(2), 20–28. <https://doi.org/10.5897/IJBMBR2015.0245>

(15) Kroma, S., **Norman, P.E.,** Barrie, A.U., & Norman, S.Y. (2016). Efficacy of chicken manure on the growth, yield and profitability of maize in the upland and inland valley swamp of Sierra Leone. *International Journal of Sciences*, 5(11), 7–13. DOI: 10.18483/ijSci.1116

(16) **Norman, P.E.**, Asfaw, A., Tongoona, P.B., Danquah, A., Danquah, E.Y., Koeyer, D.D., & Asiedu, R. (2018). Can parentage analysis facilitate breeding activities in root and tuber crops? *Agriculture Journal*, 8(95), 1–24. https://dx.doi.org/10.3390/agriculture8070095

(17) **Norman, P.E.**, Asfaw, A., Tongoona, P.B., Danquah, A., Danquah, E.Y., De Koeyer, D.,& Asiedu, R. (2018). Pollination success in some white yam genotypes under polycross and nested mating designs. *International Journal of Biological Sciences and Applications*, 5(2): 19–28. https://www.aascit.org/journal/ijbsa

(18) Asfaw, A., Aderonmu, S.D., **Norman, P.E.**, Darkwa, K., De Koeyer, D., Paterne Agre, Kouaku, A., Chamber, E., Otoo, E., Obidiegwu, J., Nwanchukwu, E., Dossou-Aminon, I.N., Dansi, A., Oselebe, H., Adebola, P., & Asiedu, R. (2019). Application of predictive breeding in yam improvement for West Africa. *Research for Tropical Agriculture*, 12(2): 177–120. <https://www.jstage.jst.go.jp/article/nettai/12/1/12_43/_article/-char/en>

(19) Karim, K.Y., Ifie, B., Dzidzienyo, D., Danquah, E.Y., Blay, E.T., Whyte, J.B.A., Kulakow, P., Rabbi, I., Parkes, E., Omoigui, L., **Norman, P.E.,** & Iluebbey, P. (2020). Genetic characterization of cassava (Manihot esculenta Crantz) genotypes using agro-morphological and single nucleotide polymorphism markers. *Physiology and Molecular Biology of Plants*, 26(2): 317–330 https://doi.org/10.1007/s12298-019-00740-x

(20) **Norman, P.E.**, Paterne, A.A., Danquah, A., Tongoona, P.B., Danquah, E.Y., De Koeyer, D., Ikeogu, U.N., Asiedu, R., & Asfaw, A. (2020). Paternity Assignment in White Guinea Yam (*Dioscorea rotundata*) Half-Sib Progenies from Polycross Mating Design Using SNP Markers. *Plants*, 2020, 9, 527; https://doi:10.3390/plants9040527.

(21) Karim, K.Y., **Norman, P.E.,** Dzidzienyo, D., Ifie, B., Kulakow, P., Rabbi, I., Omoigui, L., & Parkes, E. (2020). Gene action analysis studies for agronomic traits in cassava (Manihot esculenta Crantz) genotypes developed using line by tester mating design. *African Journal of Agricultural Research*, 16(10): 1471–1479.doi:10.5897/AJAR2020.14797

(22) **Norman, P.E.**, Danquah, A., Asfaw, A., Tongoona, P.B., Danquah, E.Y., & Asiedu, R. (2020). Seed Viability, Seedling Growth and Yield in White Guinea Yam. *Agronomy Journal*, 11(2): 1–10. https://dx.doi.org/10.3390/agronomy11010002

(23) **Norman, P.E.**, Tongoona, P.B., Danquah, A., Danquah, E.Y., Asiedu, R., Agbona, A. & Asfaw, A. (2021). Genetic parameter estimation and selection in advanced breeding population of white Guinea yam. *Journal of Crop Improvement*35(6): 790-815. https:// doi.org/10.1080/15427528.2021.1881012

(24) Bebeley, H.A., Mabey, P.T., & **Norman, P.E.** (2021). Effects of Biochar, Plant Density and Spacing on Growth and Yield of Rice in a Tropical Inland Valley Swamp. *International Journal of Applied Agricultural Sciences*, 7(2): 77–83. https://doi.org/10.11648/j.ijaas.20210702.11

(25) Karim, K.Y. & **Norman, P.E.** (2021). Genotype × Environment Interaction and Stability Analysis for Selected Agronomic Traits in Cassava (Manihot esculenta). *International Journal of Environmental & Agriculture Research (IJOEAR)*, 7(8): 17–28.**DOI:** <https://dx.doi.org/10.5281/zenodo.5336002>

(26) Samai, M.A., Kassoh, F.A., Kroma, S., **Norman, P.E.,** & Bah, M.A. (2021). Effect of time and proportion of leaf harvest on pest, forage and root yields of sweetpotato (*Ipomoea batatas* L.) in the inland valley swamp and upland ecologies of Njala. *International Journal of Environmental & Agriculture Research (IJOEAR)*, 7(9), 7–15.**DOI:**<https://dx.doi.org/10.5281/zenodo.5536337>

(27) Agre, P.A., **Norman, P.E.**, Asiedu, R., & Asfaw, A. (2021). Identification of Quantitative Trait Nucleotides and Candidate Gene for Tuber Yield and Mosaic Virus Tolerance in an Elite Population of White Guinea Yam (*Dioscorea rotundata*) using Genome-wide Association Scan.*BMC Plant Biology*, 21:552. https://doi.org/10.1186/s12870-021-03314-w.

(28) Sesay, M.E., Kanu, E.M., Bagla, V.P., & **Norman, P.E.** (2021). Prevalence of *Brucella abortus* in Cattle in the Njala and Newton Ranches of Sierra Leone Using Serological Analysis. Animal and Veterinary Sciences, 9(6): 191–195. doi:10.11648/j.avs.20210906.15

(29) **Norman, P.E.,** Kawa, M.S., & Karim, K.Y. (2022). Effect of Pot Size and Transplanting Date on Tuber Production Using Micro-Tubers of White Yam. Journal of Modern Agriculture and Biotechnology, 1(1):3.DOI**:**<https://www.doi.org/10.53964/jmab.2022003>

(30) Barrie, A.U., **Norman, P.E.,** & George, M. (2022). Genetic Parameter Estimates and Diversity Studies of Upland Rice (*Oryza sativa* L.) Genotypes Using Agro-morphological Markers.*International Journal of Agronomy and Agricultural Research*(IJAAR), 20(1): 11–23. http://www.innspub.net

(31) **Norman, P.E.,** & Tongoona, P.B. (2022). Genetic parameter estimates and improvement of yam for tuber yield, quality and related attributes: A review. *International Journal of Botany Studies*, 7(4), 41–49. www.botanyjournals.com

(32) Kanu, M.S., **Norman, P.E.,** & Boima, J.N.S. (2022). Investigating the effect of different rates of chicken manure on the growth, yield and profitability of cowpea (*Vigna unguiculata* L. Walp) under rain fed condition in the upland soils of Njala, southern Sierra Leone. *International Journal of Science and Research*, 11(5): 1486–1498. doi:10.21275/SR22101145148.

(33) **Norman, P. E.,** Tongoona, P. B., Danquah, A., Danquah, E. Y., Agre, P. A., Agbona, A., Asiedu, R., & Asfaw, A. (2022). Genetic analysis of agronomic and quality traits from multi-location white yam trials using mixed model with genomic relationship matrix. *Global Journal of Botanical Science*, 10: 8–22.

(34) **Norman, P.E**., Agre, P.A., Asiedu, R., & Asfaw, A. (2022). Multiple-Traits Selection in White Guinea Yam (*Dioscorea rotundata*) Genotypes. *Plants*, 11, 3003. https://doi.org/10.3390/ plants11213003

(35) Bogba, C., **Norman, P.E.,** Kassoh, F.A., & Kroma, S. (2022). Effect of Leaf Harvest Intensity and Frequency on Sweet Potato Weevil (*Cylas puncticollis*) Infestation, Yield and Quality Traits of Sweet Potatoes (*Ipomoea batatas* L.). *Journal of Modern Agriculture and Biotechnology*, 1(4), 19. DOI: 10.53964/jmab.2022019.

(36) **Norman, P.E.**, Norman, Y.S.G.E., & Bebeley, J.F. (2022). Agronomic and Economic Parameter Estimates of Cocoyam as Influenced by Fertilizer and Environment. *American Journal of Agricultural and Biological Sciences*, 17(1), 79-89.DOI: 10.3844/ajabssp.2022.79.89

(37) Sesay, J.V., Lebbie, A., Wadsworth, R., Nuwamanya, E., Bado, S., & **Norman, P.E.** (2023). Genetic Structure and Diversity Study of Cassava (*Manihot esculenta*) Germplasm for African Cassava Mosaic Disease and Fresh Storage Root Yield. *Open Journal of Genetics*, 13(1), 23-47. <https://doi.org/10.4236/ojgen.2023.131002>

(38) Torto, S., Samura, A., Sundufu, A., Quee, D., Musa, D., Kanu, S., Fomba, S., & **Norman, P.** (2023). Grasshopper (*Zonocerus variegatus* L) Infestation and Root Dry Matter Content of Cassava as Influenced by Planting Date and Cassava Genotypes. *Peruvian Journal of Agronomy*, 7(1), 42-50. https://doi.org/10.21704/pja.v7i1.2001

(39) Karim, K. Y., & **Norman, P. E.** (2023). Perceived Knowledge of Cassava Value Chain Actors on Varietal Preferences for Various End Uses. *Discoveries in Agriculture and Food Sciences*, 11(3), 01-21. DOI:10.14738/dafs.113.14568

(40) Sumana, S.L, Tarawallie, S., & **Norman, P.E.** (2023). Challenges in Developing Aquaculture for Livelihood Enhancement in Bo City, Southern Sierra Leone. *International Journal of Fisheries and Aquaculture Research*, 9(1), 1-13. <https://doi.org/10.37745/ijfar.15/vol9n1113>

(41) Saquee, F.S., **Norman, P.E.,** Saffa, M.D., Kavhiza, N.J., Pakina, E., Zargar, M., Diakite, S., Stybayev, G., Baitelenova, A., & Kipshakbayeva, G. (2023). Impact of different types of green manure on pests and disease incidence and severity as well as growth and yield parameters of maize. *Heliyon*, 9(6), e17294. <https://doi.org/10.1016/j.heliyon.2023.e17294>

(42) Torto, S.J., Samura, A.E., **Norman, P.E.,** Sundufu, A.J., Musa, D.P., Kanu, S.A., Quee, D.D., & Fomba, S.N., (2023). Farmers' perception on severity, crop loss and management practices of variegated grasshopper (*Zonocerus variegatus* L.) on cassava (*Manihot esculenta* Crantz) in Sierra Leone. *Magna Scientia Advanced Research and Reviews*, 2023, 09(01), 034–043. DOI: <https://doi.org/10.30574/msarr.2023.9.1.0129>

(43) **Norman, P.E.,** Karim, K., Norman, S.G.E., & Vamboi, W.A. (2023). Estimation of genetic parameters for selected quantitative traits in introduced African Yam bean (*Sphenosylis stenocarpa* Hochst.ex. A. Rich Harms) genotypes. *Journal of Tropical Crop Science*, 10(3), 217–224.

(44) Saffa, M.D., Saquee, F.S., **Norman, P.E.**, Kavhiza, N.J., Simbo, D., Zargar, M., Lyashko, M., Pakina, E., & Vvedenskey, V. (2023). Influence of field and storage diseases and pests on tuber yield and quality of exotic and local yam (*Dioscorea* spp.) genotypes. *Horticulturae*, 2023, 9, 1183. https://doi.org/10.3390/ horticulturae9111183

(45) **Norman, P. E.,** Asfaw, A., Agre, P. A., Danquah, A., Tongoona, P. B., Danquah, E. Y., & Asiedu, R. (2023). Molecular and phenotypic profiling of white Guinea yam (*Dioscorea rotundata*) breeding lines. *Frontiers in Horticulture*, 2:1290521. doi: 10.3389/fhort.2023.1290521.

(46) Samura, A.E., Beamah, J., Amara, V., & **Norman, P.E.** (2024). Efficacy of various diseases management options and evaluation of farmers fields for major diseases of rice in Sierra Leone. *Annals of Plant Sciences*, 13(3), DOI:http://dx.doi.org/10.21746/aps.2024.13.3.3

(47) **Norman, P.E.**, Kamara, L., Beah, A., Gborie, K.S., Saquee, F.S., Kanu, S.A., Kassoh, F.A., Norman, Y.S.G.E., & Kargbo, A.S. (2024) Genetic and Agronomic Parameter Estimates of Growth, Yield and Related Traits of Maize (*Zea mays* L.) Under Different Rates of Nitrogen Fertilization. *American Journal of Plant Sciences*, 15, 274-291.

https://doi.org/10.4236/ajps.2024.154020

**(b) Book chapter publications**

**(1) Norman, P.E.**, Bebeley, J.F., Sesay, J.V., & Norman, Y.S. (2019). Biodiversity in Sierra Leone. In: *Global biodiversityVol. 3*: Selected Countries in Africa T. Pullaiah (ed.). Apple Academic Press, p. 213–244.<https://www.appleacademicpress.com/global-biodiversity-volume-3-selected-countries-in-africa/9781771887229>

**(2) Norman, P.E.,** Johnny, J., Moiforay, S.K., & Norman, Y.S.G.E. (2021). Invasive Alien Species of Sierra Leone.In: *Invasive Alien Species.Observations and issues from around the worldVol. 1*: Issues and Invasions in Africa, T. Pullaiah and Michael R. Ielmini (eds.). John Wiley & Sons, Inc., 111 River Street, Hoboken, NJ 07030, USA, p. 242–262.DOI:[10.1002/9781119607045.ch8](https://doi.org/10.1002/9781119607045.ch8)

**(3) Norman, P.E.,** Karim, K.Y., & Dzidzienyo, D. (2021). Assessing mating designs utilized in cassava population improvement (Chapter 5). In: *Cassava, Biology, Production, and Use*. Andri Frediansyah (ed.). IntechOpen Ltd. Janeza Trdine 9, 51000 Rijeka, Croatia. pp.91–111. <http://dx.doi.org/10.5772/intechopen.96785>.

(4) **Norman, P.E.,** Dzidzienyo, D., Karim, K.Y., & Beah, A. (2021). Genetic Modification and Application in Cassava, Sweetpotato and Yams. In: Genetically Modified Plants and Beyond. Idah Sithole-Niang (ed.). 24p. DOI:<http://dx.doi.org/10.5772/intechopen.101037>. IntechOpen Ltd. Janeza Trdine 9, 51000 Rijeka, Croatia.

(5) **Norman, P.E.**, Okoni-Williams, A., James M.S., Norman, Y.S.G.E.,&Luseni, M.M. (2023).The Role of Botanical Gardens in Plant Diversity Conservation of Sierra Leone (Chapter 8), pp. 129-139. In: Botanical Gardens and their Role in Plant Conservation Volume 1 General Topics, African and Australian Botanical Gardens. T. Pullaiah and David A. Galbraith (eds.).CRC Press, Routledge, Taylor and Francis Group, USA, 272 pp. <https://www.nhbs.com/botanical-gardens-and-their-role-in-plant-conservation-volume-1-book>

**(c) Book abstract publications**

**(1) Norman, P. E.**, Asfaw, A., Tongoona, P. B., Danquah, A., Danquah, E. Y., De Koeyer, D.& Asiedu, R. (2017). Pollination success and seed set in some white yam (*Dioscorea rotundata*) genotypes assessed under different mating system. Presented at the 20th Annual IARSAF Symposium, IITA, Ibadan, Nigeria on 10th-14th July, 2017. p 15.

**(2) Norman, P.E.**, Asfaw, A., Tongoona, P.B., Danquah, A., Danquah, E.Y., Agre, A.P., Agbona, A. & Asiedu, R. (2018). Estimates of Genetic Components for Growth, Reproductive, Yield and Quality Traits of Yam (*Dioscorea rotundata*). Poster Presentation at the International Conference on Food and Nutrition Security in Africa held at WACCI Auditorium, University of Ghana, on 3rd-5th October, 2018.p 70.

**(3) Norman, P.E.**, Asfaw, A., Tongoona, P.B., Danquah, A., Danquah, E.Y., Agre, A.P.,& Asiedu, R.(2019). Application of a Mixed Model with Genomic Relationship Matrix and the Multivariate Techniques for Analysis of Agronomic and Quality Traits in White Guinea Yam (*Dioscorea rotundata* Poir.) Breeding Trials. In: *Maiden International Conference Proceedings of the African Plant Breeders Association* titled “Advances in Classical Breeding and Application of Modern Breeding Tools for Food and Nutrition Security in Africa” held at the University of Ghana, Accra, Ghana on the 23rd – 25th, October, 2019. p 13.

**(4) Norman, P.E.**, Agre, A.P.,Danquah, A., Tongoona, P.B.,Danquah, E.Y., De Koeyer, D., Ikeogu, U.N., Asiedu, R.,& Asfaw, A.(2021). Pollination success, paternity test and seedling traits assessments in white yam (*Dioscorea rotundata*) progenies generated using nested and polycross mating designs. In: Book of Abstract Online Summit on Plant Science and Agriculture organized by Science Technology, Engineering and Mathematics (STEM) International Organization. 21 pp.

**(5) Norman, P.E.**, Asfaw, A., Danquah, A., Agre, A.P., Tongoona, P.B., Danquah, E.Y., Agbona, A., Asiedu, R., & Matsumoto, R.(2021). Trait profiling of white Guinea yam (*Dioscorea rotundata*) breeding lines using breeding values and genomic estimated breeding values. Book of Abstract Online Summit on Plant Science and Genomics organized by Coalesce Research Group, 33 Market Point Dr, Greenville, SC 29607, USA. p 34. 2nd Webinar on Plant Science & Genomics, April 29 - 30, 2021.

(6) Agre, P.A., **Norman, P.E.**, Asfaw, A.,& Asiedu, R. (2021). Identification of Quantitative Trait Nucleotides and Candidate Gene for Tuber Yield and Mosaic Virus Tolerance in an Elite Population of White Guinea Yam (*Dioscorea rotundata*) using Genome-wide Association Scan. Genomics and Molecular Biology Summit (GMB-2021) September 28th, 2021. Hosed by STEM International Organization. www.stemio.org.p8.

(7) **Norman, P.E.**, Kamara, L., Gborie, K., Kargbo, A.S., Saquee, F.S., Norman, Y.S.G.E., & Beah, A (2023). Influence of variety and rates of nitrogen fertilization on grain yield and agronomic parameter estimates of maize (*Zea mays* L.). In: *Proceedings of the* 10th International Conference on Agriculture 2023(AGRICO 2023) 21st – 22nd September 2023, Jakarta, Indonesia. p 30. Co-hosted by The South-South Aquaculture and Fisheries Cooperation, Bulacan Agricultural State University, Philippines and Universitas Andalas, Indonesia. The Conference is organized by The International Institute of Knowledge Management (TIIKM) in collaboration with; Maharana Pratap University of Agriculture and Technology, India, Poznań University of Life Sciences, Poland, Southern Leyte State University, Philippines, Georgian Technical University, Georgia, Sher-e-Bangla Agricultural University (SAU), Bangladesh, College of Agriculture, Don Mariano Marcos Memorial State University La Union, Philippines, Palestine Technical University Kadoorie, Palestine and Field Crops Research Institute, and Agricultural Research Center, Egypt.

**(d) Publications in international conference proceedings**

1. Fomba, S.N., Massaquoi, F.B., **Norman,P.E.,** Samura, A.E., Mansaray, A., Jalloh, A., Dixon, A.G.O., Anthony, N.A., Benya, M.T., Fornah, D.S., Sawi, M.K., Sartie, A., Alenkhe, B., Onadipe, O., & Sanni, L.O. (2012). Current status of root and tuber crops improvement, production and utilization in Sierra Leone. In: *Proceedings of the 11th Triennial Poster presentation at the 11th Symposium of ISTRC-AB*, Memling Hotel, Kinshasa, DR Congo, 4th-8th October 2010. Pp 134-150.
2. Fomba, S.N., Whyte, J.B.A., Massaquoi, F.B., **Norman,P.E.,** Samura, A.E., Mansaray, A., Anthony, N.M., Benya, M.T., Dixon, A.G.O., Gboku, M.L.S., Fornah, D.S., Sesay, L., Massaquoi, A., & Kobba, F. (2013). Advances in Cassava (*Manihot esculenta* Crantz) and Yam (*Dioscorea* spp.) Breeding and Development in Sierra Leone: 2008-2012. In: *Proceedings of the 12th Triennial Symposium of ISTRC-AB*, Alisa Hotel, Accra, Ghana, 3rd-6th October 2013.
3. **Norman, P.E.,** Whyte, J.B.A., Samura, A.E., Massaquoi, A., Sesay, L., Dixon, A.G.O., Fomba, S.N., Benya, M.T., & Sowa, M.M. (2013). Evaluation of introduced yam genotypes in three agro-ecologies of Sierra Leone. In: *Proceedings of the 12th Triennial Symposium of ISTRC-AB*, Alisa Hotel, Accra, Ghana, 3-6 October 2013.
4. **Norman, P. E.**, Asfaw, A., Tongoona, P. B., Danquah, A., Danquah, E. Y., De Koeyer, D.& Asiedu, R. (2017). Pollination success and seed set in some white yam (*Dioscorea rotundata*) genotypes assessed under different mating system. Presented at the 20th Annual IARSAF Symposium, IITA, Ibadan, Nigeria on 10th-14th July, 2017.
5. **Norman, P. E.**, Asfaw, A., Tongoona, P. B., Danquah, A., Danquah, E. Y., Agre, A. P., Agbona, A. & Asiedu, R. (2018). Estimates of Genetic Components for Growth, Reproductive, Yield and Quality Traits of Yam (*Dioscorea rotundata*). Poster Presentation at the International Conference on Food and Nutrition Security in Africa held at WACCI Auditorium, University of Ghana, on 3rd-5th October, 2018.
6. Asfaw, A., Aderonmu, S. D., **Norman, P. E.**, Darkwa, K., De Koeyer, D., Agre, A. P., Kouaku, A., Chamber, E., Otoo, E., Obidiegwu, J., Nwanchukwu, E., Dossou-Aminon, I. N., Dansi, A., Oselebe, H., Adebola, P. & Asiedu, R. (2018). Application of predictive breeding in yam improvement for West Africa. Oral Presentation at the 2nd International Yam Crop Science Workshop at Tokyo University of Agriculture (TUA), Setagaya, Tokyo, Japan, on 8th-12th March, 2018.
7. **Norman, P. E.**, Asfaw, A., Tongoona, P. B., Danquah, A., Danquah, E. Y., Agre, A. P., Agbona, A. & Asiedu, R. (2019). Application of a mixed model with genomic relationship matrix and the multivariate techniques for analysis of agronomic and quality traits in white Guinea yam (*Dioscorea rotundata* Poir.) breeding trials. Oral Presentation at the African Plant Breeders Association (APBA) Maiden International Conference Held at Auditorium of the Department of Economics University of Ghana, Accra, Ghana. October 23-25, 2019; on the theme: Advances in Classical Breeding and Application of Modern Breeding Tools for Food and Nutrition Security in Africa.
8. Agre, P.A., **Norman, P.E.**, Asfaw, A. and Asiedu, R. (2021). Identification of Quantitative Trait Nucleotides and Candidate Gene for Tuber Yield and Mosaic Virus Tolerance in an Elite Population of White Guinea Yam (*Dioscorea rotundata*) using Genome-wide Association Scan. Genomics and Molecular Biology Summit (GMB-2021) September 28th, 2021. Hosted by STEM International Organization. [www.stemio.org](http://www.stemio.org).
9. **Norman, P.E.,** Kamara, L., Gborie, K., Kargbo, A.S., Saquee, F.S., Norman, Y.S.G.E., & Beah, A (2023). Influence of variety and rates of nitrogen fertilization on grain yield and agronomic parameter estimates of maize (*Zea mays* L.). In: *Proceedings of the* 10th International Conference on Agriculture 2023(AGRICO 2023) 21st – 22nd September 2023, Jakarta, Indonesia. p 30. In: Global Food Security: Stopping Crop LossesCo-hosted by The South-South Aquaculture and Fisheries Cooperation, Bulacan Agricultural State University, Philippines and Universitas Andalas, Indonesia. The Conference is organized by The International Institute of Knowledge Management (TIIKM) in collaboration with; Maharana Pratap University of Agriculture and Technology, India, Poznań University of Life Sciences, Poland, Southern Leyte State University, Philippines, Georgian Technical University, Georgia, Sher-e-Bangla Agricultural University (SAU), Bangladesh, College of Agriculture, Don Mariano Marcos Memorial State University La Union, Philippines, Palestine Technical University Kadoorie, Palestine and Field Crops Research Institute, and Agricultural Research Center, Egypt.

**(e) Publications in annual reports**

1. **Norman, P.E., &** Samura, A.E. (2004). Evaluation of Improved yam genotypes in Sierra Leone. Annual Report of the Institute of Agricultural Research (IAR), Sierra Leone.
2. **Norman, P.E.,**& Samura, A.E. (2006). Evaluation of Introduced Yam Genotypes for Pest and Disease Resistance, Root and Food Quality Traits. Annual Report of the Institute of Agricultural Research (IAR), Sierra Leone.
3. **Norman, P.E.,** Samura, A.E., & Mansaray, A. (2007). Screening sweet potato genotypes for its Genetic potential for breeding. Annual Report of the Institute of Agricultural Research (IAR), Sierra Leone.
4. **Norman, P.E.,** Samura, A.E., & Mansaray, A. (2007). Multivariate analysis of phenotypic diversity in yam (*Dioscorea* spp.) germplasm. Annual Report of the Institute of Agricultural Research (IAR), Sierra Leone.
5. **Norman, P.E.,** Samura, A.E., & Mansaray, A. (2007). Assessment of sweet potato Advanced Yield Trials. Annual Report of the Institute of Agricultural Research (IAR), Sierra Leone.
6. **Norman, P.E.,**Samura, A.E., & Mansaray, A. (2008). Participatory variety selection on yam in Moyamba. Annual Report of Njala Agricultural Research Centre (NARC), Sierra Leone. Pp 10-16.
7. **Norman, P.E.,** Bebeley, J., Massaquoi, F.B., Samura, A.E., Mansaray, A., & Fomba, S.N. (2011). Preliminary investigation of introduced yam productivity and profitability in Sierra Leone. Annual Report of Njala Agricultural Research Centre (NARC), Sierra Leone. Pp 30-43.
8. **Norman, P.E.,** Sowa, M., Samura, A.E., Mansaray, A., & Fomba, S.N. (2012). Screening of introduced yam genotypes for yield, pest and diseases resistance and food quality traits under staking and non-staking conditions.
9. **Norman, P.E.,** Samura, A.E., Mansaray, A., Anthony, N., Benya, M.T., Fomba, S.N., & Sowa, M. (2013). Evaluation of introduced yam genotypes in three agro-ecologies of Sierra Leone.Annual Report of Njala Agricultural Research Centre (NARC), Sierra Leone.
10. Sesay, L., **Norman, P.E.,** Massaquoi, A., Kobba, F., Allieu, A.P., Gboku, M.L., & Fomba, S.N. (2013). Assessment of farmers’ indigenous knowledge and selection criteria of yam in Sierra Leone. Annual Report of Njala Agricultural Research Centre (NARC), Sierra Leone.
11. **Norman, P.E.**, Asfaw, A., Danquah, A., Agre, P.A., Tongoona, P.B., Danquah, E.Y., Agbona, A., Asiedu, R., and Matsumoto, R. (2020). Molecular and phenotypic profiling of white Guinea yam (*Dioscorea rotundata*) breeding lines.
12. **Norman, P.E.**, Asfaw, A., Danquah, A., Agre, P.A., Tongoona, P.B., Danquah, E.Y., De Koeyer, D., Ikeogu, U.N., Asiedu, R., and Asfaw, A. (2020). Paternity Assignment in White Guinea Yam (*Dioscorea Rotundata*) Half-Sib Progenies from Polycross Mating Design Using SNP Markers.
13. Agre, P.A., **Norman, P.E.**, Asfaw, A., Asiedu, R., and Agbona, A. (2020). Identification of Quantitative Trait Nucleotides and Candidate Gene for Tuber Yield and Mosaic Virus Tolerance in an Elite Population of White Guinea Yam (*Dioscorea rotundata*) using Genome-wide Association Scan.
14. **Norman, P.E.**, Tongoona, P.B., Danquah, A., Danquah, E.Y., Agre, P., Agbona, A., Asiedu, R., and Asfaw, A. (2020). Genetic parameter estimation and selection in an advanced breeding population of white Guinea yam.
15. **Norman, P.E.**, Kamanda, I., and Conteh, A.R. (2020). MAF/SLARI- COVID-19 Emergency Response Food Production and Multiplication Project: SAH yam micro-tubers and plantlets, and botanical seeds.
16. **Norman, P.E.** and Conteh, A.R. (2020). Evaluation of introduced white yam genotypes in Sierra Leone.
17. **Norman, P.E.**, Vamboi, W.L., Kassoh, F.A., and Conteh, A.R. (2021). Assessment of Growth and Yield Parameters of Early Generation Families of White Yam (*Dioscorea rotundata*).
18. **Norman, P.E.**, Kawa, M.S., Karim, K.Y., and Conteh, A.R. (2021). Effect of Pot Size and Transplanting Date on The Yield of Introduced SAH Derived Micro-Tubers of White Yam.
19. **Norman, P.E.**, Turay, I.S., Kroma, S., and Conteh, A.R (2021). Phenotypic Variability Studies in Introduced *Dioscorea rotundata* (White Yam) Genotypes.
20. **Norman, P.E.**, Kamara, F.I., Kroma, S., and Conteh, A.R. (2021). Genetic Parameter Estimates and Correlations in Introduced *Dioscorea Rotundata* (White Yam) Genotypes.
21. **Norman, P.E.**, Yawulie, B., Karim, K.Y., and Conteh, A.R. (2021). Assessment of Growth and Reproductive Traits of Some Introduced Varieties of African Yam Bean (*Sphenosylis stenocarpa* Hochst.ex. A. Rich Harms).
22. **Norman, P.E.**, Kamara, F.K., Karim, K.Y., and Conteh, A.R. (2021). Evaluation of Seedling Traits of Some Introduced Varieties of African Yam Bean (*Sphenosylis stenocarpa* Hochst.ex. A. Rich Harms).
23. **Norman, P.E.**, Bah, M., Karim, K.Y., and Conteh, A.R. (2022). Effects of set size on sprouting, growth, yield and related traits of semi-autotrophic derived white yam (*Dioscorea rotundata*) genotype.
24. **Norman, P.E.**, Karfo, C., Karim, K.Y., and Conteh, A.R. (2022). Sprouting, growth, yield and related traits as influenced by planting materials (bulbils, seed yams, head, middle and tail portions) of water yam (*Dioscorea alata*).
25. **Norman, P.E.**, Alie, F.B., Kassoh, F.A., and Conteh, A.R. (2022). Assessment of growth and yield parameters of tuber families of white yam (*Dioscorea rotundata*).
26. **Norman, P.E.**, and Conteh, A.R. (2022). Seedling vigour index and tuber yield traits as influenced by genotype and pre-sprouted sett and direct planted planting materials.
27. **Norman, P.E.**, and Conteh, A.R. (2022). Estimation of genetic parameters for selected quantitative traits in introduced African Yam bean (*Sphenosylis stenocarpa* Hochst.ex. A. Rich Harms) genotypes.

**4. PROFESSIONAL ACTIVITY**

**(a) Workshop / training**

1. Research and Training Attachment (RTA) International Institute of Tropical Agriculture (IITA) Ibadan, Nigeria. 6th – 18th February, 2006.
2. Regional (AFRA) Training Course on Mutation Breeding for Market-Oriented Traits in Africa Crops. C7-RAFA-5.056-002/07. Addis Ababa, Ethiopia. 18th– 22ndJune, 2007.
3. Workshop on the Dissemination of New Agricultural Technologies in Africa (DONATA). Held at the Institute of Agricultural Research (IAR), Njala, Sierra Leone. 23rd – 24th February, 2008.
4. Training on food security and poverty alleviation in Africa organized by African centre for (ACFS), University of KwaZulu-Natal, South Africa. 9th – 13th February, 2009.
5. Training on breeding strategy, mating design, experimental data analysis and data management for cassava breeding training programme. Held at the Njala Agricultural Research Centre (NARC), Njala, Sierra Leone. 24th November – 2nd December, 2011.
6. Training on Sustainable Agriculture, Environment and the Community, Njala University, Njala Campus, Sierra Leone. 9th - 11th January, 2012.
7. Training on Yam Improvement: breeding of hybrid yam, seedling nursery, vine cutting, minituber and tissue culture techniques. International Institute of Tropical Agriculture (IITA), Ibadan, Nigeria. 3rd August - 2nd September, 2012.
8. Workshop on enabling the poor to overcome poverty: Focus on the youth. Held at the International Institute of Tropical Agriculture (IITA), Ibadan, Nigeria. 21st August, 2012.
9. Workshop on regional field orientation session on West African Agricultural Productivity Programme (WAAPP). Held at the Njala Agricultural Research Centre (NARC), Njala, Sierra Leone. 13th September, 2012.
10. Training on Value chain, innovation platform concepts in IAR4D and GIS mapping, Held at J & E Resort Guest House, Bo, 27th February to 10th March, 2013.
11. Training on Policy Analysis Matrix (PAM): A tool for analyzing the impact of policy decisions on the profitability of Agriculture and Natural resources. Held at J & E Resort Guest House, Bo, 24th – 25th June 2013.
12. Training on gender impact assessment in agricultural value chain and types of sampling and concepts and indicators of poverty and data base development Held at Njala University Guest House conference hall, Njala, 30th July – 11th August 2013.
13. Workshop on stakeholders’ validation sessions of competitive agricultural Research Grants Scheme (CARGS) operations manual, and the report on constraints along the rice and cassava value chains. Held at Wusum hotel, Makeni, Sierra Leone. 30th – 31st August, 2013.
14. Training workshop on mainstreaming gender, environment, social, youths and climate change issues in WAAPP activities. Held at J & E Resort, Bo, Sierra Leone. 17th – 20th September, 2013.
15. Training workshop on gender mainstreaming in WAAPP Activities in Sierra Leone Held at J & E Resort Guest House, Bo, 17th – 21st March, 2014.
16. Workshop on Demand-Led Plant Breeding / Demand-led variety design (DLVD), held at Tomreik hotel, Accra, Ghana on 26th-28th March, 2019, Organized by West African Centre of Crop Improvement (WACCI).
17. Scientific Writing Write-shop for IDRC Sponsored Graduate Research Fellows, held at IITA, Cotonou, Benin on 3rd–7th July, 2017, Organized by IITA, CORAF/WECARD, and IDRC.
18. The role of Agricultural Biotechnology in Sustainable Food Systems and Nutrition, Conference 15th February 2016, Organized by Food and Agricultural Organization (FAO), United Nations, Webinar Coverage Shown at West Africa Centre for Crop Improvement (WACCI), University of Ghana.
19. Managing the Enemies of Plants to Enhance Food Security: Genetic Improvement as a Counter Offensive Strategy, Inaugural Lecture by Prof. Samuel Kwame Offei (Pro-Vice Chancellor, Academic and Student Affairs), 18th February 2016, Great Hall, University of Ghana.
20. Variety Evaluation and Release Awareness Workshop 22nd–26th February 2016, Ghana; Organized by USAID’s Agricultural Policy Support Project (APSP).
21. Improving genetic gains in crops to help meet food security in Africa. Fifth lectures in the College of Basic and Applied Sciences (CBAS) lecture series by Dr. Dave Hoisington, held at Centre for African Wetlands, University of Ghana; Organized by the West Africa Centre for Crop Improvement (WACCI) on 10th March, 2016.
22. Feeding Millions of Ghanaians: Is Organic Crop Production the Answer? Inaugural Lecture by Prof. John Ofosu-Anim (Dean, School of Agriculture, College of Basic and Applied Sciences), 15th April 2016, Great Hall, University of Ghana.
23. The Art of writing successful grant application. Seminar presentation by Dr. Paul Keese, held at WACCI, Organized by the West Africa Centre for Crop Improvement (WACCI) on 17th June, 2016.
24. Workshop on Sorghum Functional Genomics scheduled from September 12th–16th, 2016 at the main WACCI lecture hall. Instructors included experts from Purdue University.
25. Workshop on Demand-Led Plant Breeding Hosted at Tomreik Hotel, Accra, Ghana, by the West African Centre for Crop Improvement (WACCI), University of Ghana, from March 26 – 28, 2019.
26. National training course on soil, water and nutrient management by Christoph Müller and Mohammad Zaman held on the 21st – 22nd April, 2021.
27. Workshop on Plant Variety Design for Emerging Markets in Africa Online Webinar Series, Hosted by the University of KwaZulu-Natal’s African Centre for Crop Improvement held on the 29th June, 2021.
28. Selection for biochemical traits with improved quality and yield in mutant rice and cassava lines. Hosted by Njala University. 17th–21stOctober, 2022.
29. Sample collection, genotyping procedures, documentation and data analysis held at Central and West African Virus Epidemiology (WAVE) headquarters (Pôle Scientifique et d'Innovation de l'Université Félix Houphouët-Boigny), Abidjan, Côte d'Ivoire from February 28, 2023 to March 03, 2023.
30. Training on “Climate smart agricultural practice for maize and cassava production in Sierra Leone” held at the University Guest House Conference Hall, Njala Campus, Sierra Leone on 24th to 26th of April 2023. Organized by Njala University, in collaboration with the Sierra Leone Agricultural Research Institute (SLARI), through the National Liaison Office, Nuclear Safety and Radiation Protection Authority, Ministry of Environment
31. A seed business summit titled ‘Building a roadmap for seed sector transformation” held at the Bintumani Hotel, Freetown, Sierra Leone from the 18th-20th September, 2023. Organized by Sierra Leone Seed Certification Agency (SLeSCA), Sierra Leone Agricultural Research Institute (SLARI) and Ministry of Agriculture and Food Security (MAFS) in collaboration with both national (Farmers’ Group Federation, Private Seed Companies, Njala University, Ernest Bai Koroma University of Science and Technology) and international (BASICS II, TAAT, IITA, IDB, USAID, AfDB, World Bank, SASAKAWA, AfricaRice and BMGF) partners.
32. Training on SAH modified techniques (micro-stem preparation, SAH plants production, treatment, Lab, field, screenhouse monitoring and maintenance; SAH plantlets multiplication and TC plantlets introduction into SAH; and seed system course, business with SAH seed and lessons and practices recapitulation) held at NARC Tissue Culture facility from 11th October to 14th October, 2023.
33. Validation workshop of an assessment report of Existing National Centre of Specialization (NCoS) to Evolve to a Regional Centre of Excellence (RCoE); organized by Food Systems Resilience Program (FSRP). Held at Radisson Blu, Aberdeen, Freetown, Sierra Leone; on 28th March, 2024.
34. Workshop on identification of food system transition challenge for sustainable agri-food system intelligence (SASI) and Science Policy Interface (SASI-SPI) Initiative in Sierra Leone; organized by Agri-Natura (a European Network of Universities and Research Institutes) and the FAO; and held at the FAO Office, 17 Spur Road, Freetown, Sierra Leone on 25th April, 2024.

**(b) Webinars**

1. Plant Breeding: Perspectives from Industry and Academia. Organized by The Plant Sciences Symposia Series Students Advisory Council Virtual Symposium and Corteva Agriscience held on Friday April 24th, 2020.
2. How plant breeding can be deployed to mitigate the impacts of COVID-19 on food and nutrition security across the African continent, Organized by The Institute for Agricultural Research (IAR) Samaru, and the Faculty of Agriculture, Ahmadu Bello University Zaria Nigeria held on June 10, 2020.
3. Molecular plant breeding and data analysis methods and applications held on August 22, 2020.
4. What early generation seed business models in the era of COVID-19: harvesting best practices in sub-Saharan Africa held on September 15, 2020.
5. Invited speaker at the online summit on plant science and agriculture (PSA-2021), Belgium, Chapter 1, on 25/03/2021 organized by Science, Technology, Engineering, and Mathematics International Organization (STEMIO), Singapore. The presentation was on “Pollination success, paternity test and seedling traits assessments in white yam (*Dioscorea rotundata*) progenies generated using nested and polycross mating designs.”
6. Invited speaker at the 2nd Webinar on “Plant Science & Genomics” held during April 29-30, 2021 organized by Coalesce Research Group, USA. The presentation was on “Trait profiling of white Guinea yam (*Dioscorea rotundata*) breeding lines using breeding values and genomic estimated breeding values.”
7. Invited guest at the 3rd International Webinar Conference on “Plant Science & Research (Plant-2021)” held during May 10-11, 2021 organized by USG United Scientific Group, USA.
8. Invited speaker at the online webinar on “Demand led plant variety design for emerging markets in Africa” held during June29, 2021 organized by University of KwaZulu-Natal, Peitermaritzburg, South Africa.
9. Participant in a webinar training on “The Guest Editor Experience: An Inside Look” Organized by SAGE journals in their SPECIAL COLLECTIONS WEBINAR on 30th November 2022.
10. Invited guest at the Zoom discussion on Successes, Challenges, and Opportunities of Plant Transformation Research in Africa, on September 13th, 2023 at 9:00-11:00 AM ET/14:00-16:00 UK. Organized by PlantGENE community and other organizations dedicated to developing crop varieties to benefit farmers across the globe and create a more equitable and sustainable agricultural system.

**(c) Supervision of undergraduate and postgraduate projects**

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| **YEAR** | **TITLE OF PAPER** | **PROJECT** |
| 2023 | Agro-Morphological and Culinary Traits Characterization of Cassava Accessions and Farmers’ Knowledge on Cassava Pests and Diseases Management in Sierra Leone | MPhil. postgraduate thesis, NU |
| 2023 | Assessing Selected Agronomic and Economic Traits of Maize Under Varying Nitrogen Amendments | MSc postgraduate dissertation, NU |
| 2023 | Evaluation of Sweetpotato (*Ipomoea Batatas*L.) Genotype for Sweetpotato Weevil (*Cylas puncticollis*) and Storage Root Traits Under Different *Glyricedia Sepium* Amendments | MSc postgraduate dissertation, NU |
| 2023 | Farmers’ Perceived Knowledge of Factors Affecting Adoption of Climate Smart Agriculture Technologies, Impacts and Mitigating Strategies in Moyamba District Southern Sierra Leone | MSc postgraduate dissertation, NU |
| 2023 | Effects of Indiscipline on Academic Performance: A Case Study of Selected Secondary Schools in Kori Chiefdom, Moyamba District**,**Southern Sierra Leone | MEd postgraduatedissertation, NU |
| 2023 | Seedling Vigour Index and Tuber Yield Traits of White Yam (*Dioscorea rotundata*) as Influenced by Genotype and Plant Material Type | BSc undergraduate dissertation, Njala University (NU) |
| 2023 | Influence of Variety and Fertilization on Growth and Yield of Maize (*Zea mays* L.) | Undergraduate dissertation, Njala University (NU) |
| 2023 | Influence of Variety and Nitrogen Fertilization on Fresh Ear Yield and Agronomic Parameter Estimates of Maize (*Zea mays* L.) | Undergraduate dissertation, Njala University (NU) |
| 2023 | The Effect of Different Levels of NPK-15:15:15 Fertilizer on The Growth and Yield Responses on Sweetpotato (*Ipomea batatas* L.) | Undergraduate dissertation, Njala University (NU) |
| 2022 | Response of introduced maize (*Zea mays* L.) genotypes to nitrogen fertilization | MSc postgraduate dissertation, NU |
| 2022 | Genetic studies on growth and yield traits of introduced maize (*Zea mays* L.) varieties | MSc postgraduate dissertation, NU |
| 2022 | Production and marketing prospects of chili pepper in Bombali and Falaba Districts, Northern Sierra Leone | MSc postgraduate dissertation, NU |
| 2022 | Impact assessment of Arcelor Mittal Liberia mining company on the livelihood of the mining communities in Liberia | MSc postgraduate dissertation, NU |
| 2022 | Evaluation of shade management options and spatial arrangement on growth and survival rate of cacao plants at Tikonko demonstration site, Kailahun District Eastern Sierra Leone | MSc postgraduate dissertation, NU |
| 2022 | Assessment of physico-chemical parameters of selected sites along the wanjei river | MSc postgraduate dissertation, NU |
| 2022 | Assessment of public drinking water quality and hygenic conditions of people in Yoni Chiefdom: A case study of six selected areas of Tonkolili District, Sierra Leone | MSc postgraduate dissertation, NU |
| 2022 | Assessing the socio-economic impacts of unsustainable sand mining activities in three selected sites along the western rural peninsular Freetown Sierra Leone | MSc postgraduate dissertation, NU |
| 2022 | Assessing the socio-economic and environmental impact of charcoal production on rural households in Kori Chiefdom, Moyamba District, Southern Sierra Leone | Undergraduate dissertation, Njala University (NU) |
| 2022 | Impact of population growth on forest resources in Nongowa Chiefdom, Kenema District, Eastern Sierra Leone | Undergraduate dissertation, Njala University (NU) |
| 2022 | Effects of integrated pest management on the population of fallarmy worm (*Spodoptera frugiperda* L.), growth and yield of maize (*Zea mays* L.) | Undergraduate dissertation, Njala University (NU) |
| 2022 | Growth and yield traits of maize as influenced by variety and fertilization | Undergraduate dissertation, Njala University (NU) |
| 2022 | Assessment of growth and yield parameters of tuber families of white yam (*Dioscorea rotundata*) | Undergraduate dissertation, Njala University (NU) |
| 2022 | Effects of set size on sprouting, growth and related traits of semi-autotrophic derived white yam (*Dioscorea rotundata*) genotype | Undergraduate dissertation, Njala University (NU) |
| 2022 | Sprouting, growth and related traits of various planting materials (bulbils, seed yams, head, middle and tail portions) of water yam (*Dioscorea alata*) | Undergraduate dissertation, Njala University (NU) |
| 2022 | Effect of chicken manure on growth and yield of maize (*Zea mays* L) | Undergraduate dissertation, Njala University (NU) |
| 2022 | Determining the effect of different application rate of NPK 15:15:15 on the yield and yield components of maize (*Zea mays* L.) | Undergraduate dissertation, Njala University (NU) |
| 2022 | Effects of pig dung on growth and yield of maize (Zea mays l.) in the upland soil of Njala. HND Agronomy, School of Agriculture and Food Sciences | Undergraduate dissertation, Njala University (NU) |
| 2021 | Investigating the growth and yield potentials of three introduced genotypes of maize (*Zea mays* L.) | Undergraduate dissertation, Njala University (NU) |
| 2021 | Assessment of growth and yieldof some introduced varieties of Africayam bean (*Sphenosylis stenocarpa* Hochst.ex. A. Rich Harms) | Undergraduate dissertation, Njala University (NU) |
| 2021 | Evaluation of seedling traits of some introduced varieties of Africayam bean (*Sphenosylis stenocarpa* Hochst.ex. A. Rich Harms) | Undergraduate dissertation, Njala University (NU) |
| 2021 | Genetic parameter estimates and correlations in introduced *Dioscorea rotundata* (white yam) genotypes | BSc.undergraduate dissertation, Njala University (NU) |
| 2021 | Effect of pot size and transplanting date on the yield of introduced SAH derived micro-tubers of white yam | Undergraduate dissertation, Njala University (NU) |
| 2021 | Effect of planting materials on the growth and yield of two genotypes of *Dioscorea alata* (water yam) | Undergraduate dissertation, Njala University (NU) |
| 2021 | Assessment of growth and yield parameters of early generation families of white yam (*Dioscorea rotundata*) | Undergraduate dissertation, Njala University (NU) |
| 2021 | Genetic parameter estimates and diversity studies of upland rice (*Oryza sativa* L.) genotypes using agro-morphological traits. | MSc postgraduate dissertation, NU |
| 2021 | Phenotypic variability studies in introduced *Dioscorea rotundata* (white yam) genotypes | BSc. undergraduate dissertation, Njala University (NU) |
| 2021 | Smallholder farmers perception of climate change and their adaption strategies in Pujehun district, southern Sierra Leone | BSc. undergraduate dissertation, Njala University (NU) |
| 2021 | Assessment of climate change impacts on agriculture and livelihood of farmers in Moyamba district southern Sierra Leone | BSc. undergraduate dissertation, Njala University (NU) |
| 2021 | Analysis of smallholder farmers’ perceptions of climate change and their adaptation strategies: A case study of Western Rural District Sierra Leone | BSc. undergraduate dissertation, Njala University (NU) |
| 2021 | An assessment of climate change effects on crop yield and farmers adaptation measures: a case study of Kenema district eastern Sierra Leone | BSc. undergraduate dissertation, Njala University (NU) |
| 2021 | Climate change and its impact on the livelihood of farmers in northern Sierra Leone: a case study Port Loko District | BSc. undergraduate dissertation, Njala University (NU) |
| 2021 | Perception of climate change and smallholder farmers adaptation measures in Kailahun District Eastern Sierra Leone | BSc. undergraduate dissertation, Njala University (NU) |
| 2019 | The effect of leaf harvest intensity and frequency on sweetpotato weevil (*Cylas puncticollis*) infestation, yield and quality traits of sweetpotato (*Ipomoea batatas* L.) | BSc. undergraduate dissertation, Njala University (NU) |
| 2019 | The effect of time and proportion of leaf harvest on pest, forage and root yields of sweet potato (*Ipomoea batatas* L.) in the inland valley swamp and upland ecologies of Njala | BSc. undergraduate dissertation, NU |
| 2015 | Efficacy of integrated palm kernel cake and urea on the growth, yield and profitability of maize (*Zea mays* L) | Undergraduate dissertation, NU |
| 2015 | Evaluating the growth and yield performance of maize under different rates of chicken manure in the upland and inland valley swamp of Njala | Undergraduate dissertation, NU |
| 2015 | Efficacy of integrated chicken manure and inorganic fertilizer on growth, yield and profitability of maize (*Zea mays* L) | Undergraduate dissertation, NU |
| 2015 | Effect of weeding regime on growth and yield of maize (*Zea mays* L) | Undergraduate dissertation, NU |
| 2015 | Investigating the effect of chicken manure and urea on growth and yield of maize in the upland and inland valley swamp ecologies of Njala | Undergraduate dissertation, NU |
| 2015 | Investigating the effect of different rates of chicken manure on the growth, yield and profitability of cowpea (*Vigna unguiculata* L. Walp) under rain fed condition in the upland soils of Njala, Southern Sierra Leone | Undergraduate dissertation, NU |
| 2014 | In-field and in-storage screening of major diseases and pests of some introduced and local yam (*Dioscorea* spp.) genotypes in Sierra Leone | BSc. undergraduate dissertation, NU |
| 2011 | The perception of farmers on pest management practices on okra: Case study of Njala environs | Undergraduate dissertation, NU |
| 2008 | The effect of leaf harvesting frequency on growth and yield of sweet potato (*Ipomoea batatas* Lam) in the Inland Valley Swamp of Njala | Undergraduate dissertation, NU  |
| 2008 | The effect of detopping regimes on the performance of sweetpotato (*Ipomoea batatas* Lam.) in the inland valley swamp of Njala | Undergraduate dissertation, NU  |
| 2008 | Comparative analysis of traditional and yam minisett technology based on farmers selection criteria: A case study of five villages in the Kori Chiefdom | Undergraduate dissertation, NU |

**(d) Professional awards, honours, recognition, appreciation/ commendations**

1. Received “Best Researcher Award” on 21/11/2020 by VDGOOD International Scientist Awards 2020 in Engineering, Science and Medicine, Visakhapatnam, India.
2. Certificate of completion of research (PhD) on 17/11/2020 by International Institute of Tropical Agriculture (IITA), Ibadan, Nigeria.
3. Certificate of completion PhD Plant Breeding, December, 2020 by University of Ghana.
4. Certificate of attendance as an invited speaker at the online summit on plant science and agriculture (PSA-2021), Belgium, Chapter 1, on 25/03/2021 organized by Science, Technology, Engineering, and Mathematics International Organization (STEMIO), Singapore.
5. Certificate of recognition as an invited speaker at the 2nd webinar on plant science and genomics (PSG-2021), on 29th–30th/04/2021 organized by Coalesce Research Group, USA.
6. Certificate of appointment as Editorial Board Member of Journal of Modern Agriculture and Biotechnology (JMAB).
7. Certificates of reviewing of scientific research articles for various journal houses.

**(e) Active membership in professional organizations**

1. Member of the African Biotechnology Stakeholders Forum (ABSF), Kenya.
2. Member of the Golden Key International Honour Society, South Africa.
3. Member of the International Society of Tropical Root Crops–African Branch (ISTRC-AB).
4. Member of the First Global Conference on Yams.
5. Member of International Association of Research Scholars and Fellows (IARSAF), International Institute of Tropical Agriculture (IITA), Nigeria, etc.
6. Member of Njala University Society for Academic Advancement (NUSAA), Njala, Sierra Leone.
7. Member of the Sierra Leone Plant Breeders Association.
8. Member Yong Professionals for Agricultural Development (YPARD).
9. Member of the Forum for Agricultural Development in Africa (FARA).
10. Member JR Bioteck Alumni Network.
11. Honorary Rosalind Member of London Journals Press (Membership ID #LL86263).
12. Member Web of Science (a part of Clarivate analytics, formerly known as Publons)
13. Reviewer of scientific articles of various journal houses.
14. Member of the editorial board of Journal of Modern Agriculture and Biotechnology (JMAB).
15. Associate Member, International Society for Development and Sustainability (ISDS). 2022

**(f) Current research achievements**

1. Participated in resolving several genetic and breeding bottlenecks in yams through funding by IDRC/CORAF-WECARD/IITA sub-grant agreement for developing capacity for agricultural research in sub-Saharan Africa (Grant no. PJ-2126). Bill and Melinda Gates Foundation through AfricaYam Project (Grant no. OPP1052998).
2. Participated in smallholder farmers perception of climate change, their adaptation and coping strategies in Sierra Leone.
3. Have established useful results on genetic analysis of yam for yield and quality traits: applications of parentage analysis, marker assisted selection and mating design technologies.
4. Released a new variety of yam called Sierra Leone Improved Yam 1 (SLIYAM 1).
5. Have a number of candidate genotypes of yam in the pipeline for release. Rapid multiplication of these elite materials is ongoing.
6. Established MAF/SLARI- COVID-19 Emergency Response Food Production and Multiplication Project: SAH yam micro-tubers and plantlets, and botanical seeds.
7. Participated in the implementation of the West Africa Agricultural Productivity Programme Sierra Leone (WAAPP 1C SL) Grant Number: IDA Grant H654-SL and Japan PHRD TF099510-SL.
8. Participated in the implementation of the Forum for Agricultural Research in Africa (FARA) project under the African Development Bank Project – ‘Promotion of Science and Technology for Agricultural Development in Africa,’ and FARA grant No. 2008/FARA/EDU/MSc Fell/CORAF/019.
9. Released one improved *Dioscorea alata* (water yam) variety called SLIYAM 1.

**5. PUBLIC SERVICE**

1. Examiner, Njala University, Sierra Leone.
2. Research Advisor, Sustainable Agriculture for Food Security, Sierra Leone.
3. Secretary General, Ministers Prayer Network, Njala.
4. Ordained Clergy and Preacher, New Life Ministries International, Taiama Fellowship.
5. Ag. District Superintendent, New Life Ministries International, Bonthe District.
6. Research Supervisor and mentor to many students.
7. Involved in surveys and trainings of farmers.

**6. ADMINISTRATIVE EXPERIENCE**

1. Yam and cocoyam team lead, NARC / SLARI.
2. Secretary, Conference committee, International Association of Research Scholars and Fellows (IARSAF) (2017–2018).
3. Research Advisor, Sustainable Agriculture for Food Security, Sierra Leone.
4. Secretary General, Ministers Prayer Network, Njala.
5. Examiner, Njala University, Sierra Leone.
6. Supervisor, West African Virus Epidemiology (WAVE), Sierra Leone.
7. Ordained Clergy and Preacher, New Life Ministries International, Taiama Fellowship.
8. Ag. District Superintendent, New Life Ministries International, Bonthe District.
9. Officer in Charge, Njala Agricultural Research Centre (NARC) (12th–29thJanuary, 2021; 25th March – 16thApril, 2022).
10. Team lead, staff profile review committee, Njala Agricultural Research Centre (NARC), Njala, 2020.
11. Deputy Director General, Research, Technology and Innovation Development
12. Chairman and member of an interview panel for Food Systems Resilience Program (FSRP) PhD Scholarships held at SLARI Headquarters, PMB 1313, Tower Hill, Freetown, Sierra Leone; on 24th-25th April, 2024.

**REFEREES**

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2. Dr. Agyemang Danquah, Coordinator for Teaching Programme & Curriculum Development, WACCI, Lecturer, University of Ghana University of Ghana, PMB 30, Legon, Accra, Ghana.

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1. Dr. Asrat Asfaw Amele, Yam Breeding & Genetics Scientist, International Institute of Tropical Agriculture (IITA), Abuja Station, PMB 82, Besides Old Water Works, Kubwa, Abuja, Nigeria. Headquarters & West Africa Hub, PMB 5320, Oyo Road, Ibadan 200001, Oyo State, Nigeria.

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