Paul Agu Asare

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RESEARCH

Interests	Plant Breeding and Agronomy
Areas	Plant Science · Agronomy and Crop Science · Food Science · Soil Science · Genetics · Ecology

RESEARCH SUMMARY

54	816	18	25	1.75	21%
Publications	Citations	h-index	i10-index	Field-weighted impact	World top 10%

Counted from the 54 publications listed below, 2011–2026. Field-weighted impact is the mean over the 42 works scored for it; 1.00 is the world average for works of the same field, type and year. 9 of the 42 papers scored for it are among the world's most cited tenth for their field, type and year.

POSITIONS

Associate Professor/PhD 2005–present
Crop Science, University of Cape Coast, Cape Coast, Ghana

EDUCATION AND QUALIFICATIONS

PhD 2012–present
Crop Science, University of Cape Coast, Cape Coast, Ghana

PUBLICATIONS

Journal articles 50

1. Prosper Deo-Donne Lumorh, Innocent Kwaku Dorvlo, Godwin Amenorpe, **Paul Agu Asare**, Michael Osei Adu, Emmanuel Afutu, Mishael Amoah Nyarko, Michael Odenkey Quaye, Edward Bariam, Benjamin Kwasi Offei, Patrick Twumasi, Samuel Amiteye (2026). Early-maturing, high-yielding M5 mutant lines of cowpea (Vigna unguiculata) derived from gamma irradiation exhibit enhanced seed protein and mineral composition: implications for nutritional biofortification. *International Journal of Radiation Biology*. https://doi.org/10.1080/09553002.2026.2708815
2. Michael O Adu, Emmanuel Afutu, **Paul Agu Asare**, Kwadwo K Amoah, Mishael Amoah Nyarko, Kwabena A Sanleri (2026). Meta-analysis of corm yield responses to chemical and biological approaches for managing taro leaf blight disease. *Pest Management Science*. https://doi.org/10.1002/ps.70878
3. Michael O. Adu, Francis Kumi, Peter B. Obour, Emmanuel Arthur, Eric Oppong Danso, Samuel Banafo, Kofi Atiah, Kwadwo K. Amoah, **Paul A. Asare**, Joel Asiedu, Donatus B. Angnuureng, Stephen E. Moore (2026). Root system architecture and shoot canopy effects drive erosion control in Napier and Vetiver grasses. *Ecological Engineering*. https://doi.org/10.1016/j.ecoleng.2026.108126
4. Andreas A. Kudom, Martin Bosompem, Michael O. Adu, Benedict Afful, Benjamin Anderson, Francis Armah, **Paul A. Asare**, Joana Ayettey, Ben A. Mensah, Peter Osei-Wusu Adueming (2026). Urban herbicide use threatens a non-target butterfly (Hypolimnas misippus) through direct toxicity and host plant stress in Ghana. *PLOS Ecosystems*. https://doi.org/10.1371/journal.pesy.0000020
5. Felix Kuor, Michael Osei Adu, Daniel Nyadanu, Richard Adu Amoah, Emmanuel Yaw Owusu, Elvis Asare-Bediako, **Paul Agu Asare** (2025). Assessment of breeding value and gene action of okra germplasm for

tolerance to Podagrica species, okra leaf curl and mosaic virus diseases. *Ecological Genetics and Genomics*. https://doi.org/10.1016/j.egg.2025.100358

6. Emmanuel Ogyiri Adu, Godwin Amenorpe, **Paul Agu Asare**, Kingsley Joseph Taah, Alfred Anthony Darkwa, James Amoah Nyarko, Doris Mensah-Wonkyi (2025). Evaluation of Yellow Flesh Cassava Genotypes for Cyanogenic Potential, Total Carotenoid, Dry Matter and Yield in the Coastal Savannah Zone of Ghana. *Research in Plant Sciences*. https://doi.org/10.12691/plant-13-1-1
7. Emmanuel Ogyiri Adu, **Paul Agu Asare**, Kingsley Joseph Taah, Godwin Amenorpe, Andrews Danquah, Aaron Tettey-Asare, Doris Mensah-Wonkyi, Asamoah Oppong Zadok, Kofi Afari, Joshua Yeboah Asiamah (2025). Evaluation of dry matter, mealiness and starch contents of yellow-flesh cassava (Manihot esculenta, Crantz) genotypes in Ghana. *Journal of Agricultural Food Science and Biotechnology*. https://doi.org/10.58985/jafsb.2025.v03i03.84
8. Godswill Hygienus, Vincent Agyemang Opoku, Mathias Neumann Andersen, **Paul Agu Asare**, Michael Osei Adu (2025). Genotypic Variation in Root System Architecture in Okra (Abelmoschus esculentus (L.) Moench) for Adaptive Breeding in Soil Resource-Limited Environments. *Journal of Agronomy and Crop Science*. https://doi.org/10.1111/jac.70108
9. Patrick Twumasi, **Paul Agu Asare**, Sylvester NTT Addy, Godwin Amenorpe, Frank Kumi, Michael O Adu, Prosper D Lumorh, Emmanuel Afutu (2025). Harnessing Induced Mutations to Develop Superior Tiger Nut Varieties Using Ethyl Methanesulfonate (EMS) and Colchicine. *Acta Scientific Agriculture*. https://doi.org/10.31080/asag.2025.09.1474
10. Godwin Amenorpe, Kwabena Darkwa, Emmanuel Ogyiri Adu, **Paul Agu Asare**, Kingsley Joseph Taah, Doris Mensah-Wonkyi, Alfred Anthony Darkwa, Elvis Asare-Bediako, Peter Iluebbey, Elizabeth Yaa Parkes (2025). Interaction Between Yellow Flesh Cassava Genotypes and Environmental Conditions Across Three Agro-Ecological Zones in Ghana. *Journal of Agricultural Science*. https://doi.org/10.5539/jas.v17n8p90
11. Emmanuel Afutu, Frank Kumi, **Paul A Asare**, Michael O Adu (2025). Investigating the Genetics of Scab Resistance and Yield Components in Cowpea (Vigna unguiculata). *International Journal of Plant & Soil Science*. https://hal.science/hal-05068356/
12. **Paul A. Asare**, Adeyinka S. Adewumi, Patrick Twumasi, Emmanuel Afutu, Michael O. Adu (2025). Multitrait Selection for Higher Agronomic and Tuber Yield–Related Traits in Tiger Nut (Cyperus esculentus L.) Genotypes. *Scientifica*. https://doi.org/10.1155/sci5/9458568
13. Godfred Okyere-Prah, **Paul A. Asare**, Kwadwo K. Amoah, Kofi Atiah, Moses Teye, Alfred A. Darkwa, Roseline L. Macarthur, Michael O. Adu (2025). Optimizing Agronomic Zinc Biofortification in Carrots. *Plant-Environment Interactions*. https://doi.org/10.1002/pei3.70086
14. Prosper D Lumorh, Frank Kumi, **Paul Agu Asare**, Godwin Amenorpe, Michael O Adu, Sylvester N T T Addy, Emmanuel Afutu (2025). Response of some cowpea genotypes to radiosensitivity using 60Co gamma radiation. *International Journal of Agricultural Research Innovation and Technology*. https://doi.org/10.3329/ijarit.v15i1.82798
15. Michael O. Adu, Peter B. Obour, Francis Kumi, Emmanuel Arthur, **Paul A. Asare**, Eric Oppong Danso, Samuel A. Banafo, Kwabena A. Sanleri, Hygienus Godswill, Kofi Atiah, Kwadwo K. Amoah, Joel B.K. Asiedu, Stephen E. Moore, Donatus B. Angnuureng (2025). Soil reinforcement potential of multifunctional crop plants on arable and non-arable tropical soils. *Geoderma*. https://doi.org/10.1016/j.geoderma.2025.117470
16. **PA ASARE**, MO ADU, S AKABA (2024). CARNEIRO, JL dos S. Caracterização morfológica e molecular de germoplasma de. *PROPAGAÇÃO VEGETATIVA E DIVERSIDADE GENÉTICA DE INHAME (Dioscorea sp.)*. https://ri.ufs.br/bitstream/riufs/19514/2/CRISLAINE_ALVES_SANTOS.pdf#page=24
17. Adeyinka S. Adewumi, Idris I. Adejumobi, Vincent A. Opoku, **Paul A. Asare**, Michael O. Adu, Kingsley J. Taah, Adekemi E. Stanley, Temitope E. Olatunde, Emmanuel Afutu, Selorm Akaba, Hapson Mushoriwa, Paterne A. Agre (2024). Exploring quantitative trait nucleotides associated with response to yam mosaic virus severity and tuber yield traits in Dioscorea praehensilis Benth. germplasm via genome-wide association scanning. *Frontiers in Horticulture*. https://doi.org/10.3389/fhort.2024.1459476
18. P. Twumasi, **P. A. Asare**, E. Afutu, G. Amenorpe, S. N. T. T. Addy, R. N. A. Prempeh, E. F. Donkor (2024). Genetic Diversity of Tiger Nuts (Cyperus esculentus L.) Grown in Ghana Based on Morpho-Descriptors

and SSR Markers. *Journal of Agricultural Sciences – Sri Lanka*. https://doi.org/10.4038/jas.v19i2.10091

19. Adeyinka S. Adewumi, **Paul A. Asare**, Oluyemi Titilola Akintayo, Idris I. Adejumobi, Michael O. Adu, Kingsley J. Taah, Emmanuel Afutu, Vincent A. Opoku, Adekemi E. Stanley, Selorm Akaba, Jean M. Mondo, Hapson Mushoriwa, Paterne A. Agre (2024). Genetic architecture of post-harvest tuber quality traits in bush yam (Dioscorea praehensilis Benth.) germplasm through association mapping. *Frontiers in Horticulture*. https://doi.org/10.3389/fhort.2024.1373327
20. Justice Asante, Vincent Agyemang Opoku, Godswill Hygienus, Mathias Neumann Andersen, **Paul Agu Asare**, Michael Osei Adu (2024). Photosynthetic efficiency and water retention in okra (Abelmoschus esculentus) contribute to tolerance to single and combined effects of drought and heat stress. *Scientific Reports*. https://doi.org/10.1038/s41598-024-79178-5
21. Vincent A. Opoku, Michael O. Adu, **Paul A. Asare**, Justice Asante, Godswill Hygienus, Mathias N. Andersen (2024). Rapid and low-cost screening for single and combined effects of drought and heat stress on the morpho-physiological traits of African eggplant (Solanum aethiopicum) germplasm. *PLoS ONE*. https://doi.org/10.1371/journal.pone.0295512
22. Emmanuel Ogyiri Adu, Godwin Amenorpe, Kingsley Joseph Taah, **Paul Agu Asare**, Elizabeth Parkes, Maryke Labuschagne, Paul Kulakow (2023). Farmers and Consumers Perceptions and Preferences for Yellow Flesh Cassava (YFC) in the Central Region of Ghana. *Journal of Food and Nutrition Research*. https://doi.org/10.12691/jfnr-11-5-7
23. Adeyinka S. Adewumi, **Paul A. Asare**, Idris I. Adejumobi, Michael O. Adu, Kingsley J. Taah, Samuel Adewale, Jean M. Mondo, Paterne A. Agre (2023). Multi-Trait Selection Index for Superior Agronomic and Tuber Quality Traits in Bush Yam (Dioscorea praehensilis Benth.). *Agronomy*. https://doi.org/10.3390/agronomy13030682
24. Michael O. Adu, Nathaniel Zigah, David O. Yawson, Kwadwo K. Amoah, Emmanuel Afutu, Kofi Atiah, Alfred A. Darkwa, **Paul A. Asare** (2023). Plasticity of root hair and rhizosheath traits and their relationship to phosphorus uptake in sorghum. *Plant Direct*. https://doi.org/10.1002/pld3.521
25. Francis Kumi, Peter B. Obour, Emmanuel Arthur, Stephen E. Moore, **Paul A. Asare**, Joel Asiedu, Donatus B. Angnuureng, Kofi Atiah, Kwadwo K. Amoah, Shadrack K. Amponsah, Selorm Y. Dorvlo, Samuel Banafo, Michael O. Adu (2023). Quantifying root-induced soil strength, measured as soil penetration resistance, from different crop plants and soil types. *Soil and Tillage Research*. https://doi.org/10.1016/j.still.2023.105811
26. Michael O. Adu, **Paul A. Asare**, David O. Yawson, Kwadwo K. Amoah, Kofi Atiah, Matthew K. Duah, Alex Graham (2022). Root System Traits Contribute to Variability and Plasticity in Response to Phosphorus Fertilization in 2 Field-Grown Sorghum [Sorghum bicolor (L.) Moench] Cultivars. *Plant Phenomics*. https://doi.org/10.34133/plantphenomics.0002
27. KOFI ATIAH, Kofi Atia, Emmanuel Arthur, **Paul Agu Asare**, Peter Bilson Obour, Eric Oppong Danso, Kwame Agyei Frimpong, Kwabena Azure Sanleri, Samuel Asare-Larbi, Richmond Adjei, George Mensah, Mathias Neumann Andersen (2022). The use of oil palm empty fruit bunches as a soil amendmentto improve growth and yield of crops. A meta-analysis. *Agronomy for Sustainable Development*. https://doi.org/10.1007/s13593-022-00753-z
28. Kwadwo Kusi Amoah, **Paul Agu Asare**, Emmanuel Afutu (2021). Crop Plants to Potassium (K) Deprivation. *Plant Roots*. https://books.google.com/books?hl=en&lr=&id=17ZaEAAAQBAJ&oi=fnd&pg=PA27&dq=info:RS7X7tFSlisJ:scholar.google.com&ots=FkIcJmV1yn&sig=c-uSUX8nC7wr4N_8nNH8yBh4zsY
29. Adeyinka S. Adewumi, Paterne A. Agre, **Paul A. Asare**, Michael O. Adu, Kingsley J. Taah, Jean M. Mondo, Selorm Akaba (2021). Exploring the Bush yam (Dioscorea praehensilis Benth) as a Source of Agronomic and Quality Trait Genes in White Guinea yam (Dioscorea rotundata Poir) Breeding. *Agronomy*. https://doi.org/10.3390/agronomy12010055
30. Adeyinka S. Adewumi, **Paul A. Asare**, Michael O. Adu, Kingsley J. Taah, Selorm Akaba, Jean M. Mondo, Paterne A. Agre (2021). Farmers' perceptions on varietal diversity, trait preferences and diversity management of bush yam (Dioscorea praehensilis Benth.) in Ghana. *Scientific African*. https://doi.org/10.1016/j.sciaf.2021.e00808
31. Vincent Agyemang Opoku, David Oscar Yawson, **Paul Agu Asare**, Emmanuel Afutu, Mohammed Clement

Kotochi, Kwadwo Kusi Amoah, Michael Osei Adu (2021). Root hair and rhizosheath traits contribute to genetic variation and phosphorus use efficiency in cowpea (Vigna unguiculata (L.) Walp). *Rhizosphere*. https://doi.org/10.1016/j.rhisph.2021.100463

32. **Paul Agu Asare**, Roger Kpankpari, Michael Osei Adu, Emmanuel Afutu, Adeyinka Saburi Adewumi (2020). Phenotypic Characterization of Tiger Nuts (Cyperus esculentus L.) from Major Growing Areas in Ghana. *The Scientific World JOURNAL*. https://doi.org/10.1155/2020/7232591

33. Michael O. Adu, **Paul A. Asare**, David O. Yawson, Mishael A. Nyarko, Ahmed Abdul Razak, Amoah K. Kusi, Josiah W. Tachie-Menson, Emmanuel Afutu, Dick A. Andoh, Frank K. Ackah, Grace C. Vanderpuije, Kingsley J. Taah, Elvis Asare-Bediako, Godwin Amenorpe (2020). The search for yield predictors for mature field-grown plants from juvenile pot-grown cassava (Manihot esculenta Crantz). *PLoS ONE*. https://doi.org/10.1371/journal.pone.0232595

34. Michael O. Adu, David O. Yawson, Ernest E. Abano, **Paul A. Asare**, Frederick A. Armah, Eugene K. Opoku (2019). Does water-saving irrigation improve the quality of fruits and vegetables? Evidence from meta-analysis. *Irrigation Science*. https://doi.org/10.1007/s00271-019-00646-2

35. MO Adu, **PA Asare**, Frederick A Armah (2019). Transforming urban idle spaces into green, productive and aesthetic landscapes. *AgriFoSe2030 Report*. https://pub.epsilon.slu.se/id/eprint/16564/contents

36. Michael O. Adu, **Paul A. Asare**, David O. Yawson, Mishael A. Nyarko, Kwabena Osei-Agyeman (2018). Agronomic biofortification of selected underutilised solanaceae vegetables for improved dietary intake of potassium (K) in Ghana. *Heliyon*. https://doi.org/10.1016/j.heliyon.2018.e00750

37. Michael Osei Adu, **Paul Agu Asare**, Elvis Asare-Bediako, Godwin Amenorpe, Frank Kwekucher Ackah, Emmanuel Afutu, Mishael Nyarko Amoah, David Oscar Yawson (2018). Characterising shoot and root system trait variability and contribution to genotypic variability in juvenile cassava (Manihot esculenta Crantz) plants. *Heliyon*. https://doi.org/10.1016/j.heliyon.2018.e00665

38. Michael O. Adu, **Paul A. Asare**, David O. Yawson, Daniel K. Dzidzienyo, Daniel Nyadanu, Elvis Asare-Bediako, Emmanuel Afutu, Josiah W. Tachie-Menson, Mishael N. Amoah (2018). Identifying key contributing root system traits to genetic diversity in field-grown cowpea (Vigna unguiculata L. Walp.) genotypes. *Field Crops Research*. https://doi.org/10.1016/j.fcr.2018.12.015

39. **Paul Agu Asare** (2018). {" _content_"=>" Characterising shoot and root system trait variability and contribution to genotypic variability in juvenile cassava (Crantz) plants."," i"=>{" _content .... *Heliyon*. https://www.academia.edu/download/88969636/main.PMC6039752.pdf

40. Michael O. Adu, Thomas Cobbinah, **Paul A. Asare**, David O. Yawson, Kingsley J. Taah (2017). Demucilaging Freshly Stored Seeds of Cocoa (Theobroma cacao L.) Improves Seedling Emergence and Growth. *Journal of Botany*. https://doi.org/10.1155/2017/1938359

41. Michael O. Adu, David O. Yawson, Frederick A. Armah, **Paul A. Asare**, Kwame A. Frimpong (2017). Meta-analysis of crop yields of full, deficit, and partial root-zone drying irrigation. *Agricultural Water Management*. https://doi.org/10.1016/j.agwat.2017.11.019

42. **Paul Agu Asare** (2017). Structure and function of caliciviral RNA polymerases. *Viruses*. https://www.mdpi.com/1999-4915/9/11/329

43. Michael O Adu, David O Yawson, Frederick A Armah, **Paul A Asare**, Malcolm J Bennett, Martin R Broadley, Philip J White, Lionel X Dupuy (2016). Effects of rooting media on root growth and morphology of Brassica rapa seedlings. *South African Journal of Plant and Soil*. https://doi.org/10.1080/02571862.2016.1141336

44. Michael O. Adu, **Paul A. Asare**, David O. Yawson, Frank K. Ackah, Kwadwo K. Amoah, Mishael A. Nyarko, Dick A. Andoh (2016). Quantifying variations in rhizosheath and root system phenotypes of landraces and improved varieties of juvenile maize. *Rhizosphere*. https://doi.org/10.1016/j.rhisph.2016.12.004

45. BUAH JOHN NELSON, **Paul Agu Asare** (2015). In vitro growth and multiplication of pineapple under different duration of sterilization and different concentrations of benzylaminopurine and sucrose. *Biotechnology*. https://www.researchgate.net/profile/Paul-Asare-2/publication/273508366_In_vitro_Growth_and_Multiplication_of_Pineapple_under_Different_Duration_of_Sterilization_and_Different_Concentrations_of_Benzylaminopurine_and_Sucrose/links/56e8752108aec65cb45ec728/In-vitro-Growth-and-

Multiplication-of-Pineapple-under-Different-Duration-of-Sterilization-and-Different-Concentrations-of-Benzylaminopurine-and-Sucrose.pdf

46. Emmanuel Otoo, Michael Anokye, **P. A. Asare**, J. P. Tetteh (2015). Molecular Categorization of Some Water Yam (Dioscorea alata L.) Germplasm in Ghana Using Microsatellite (SSR) Markers. *Journal of Agricultural Science*. https://doi.org/10.5539/jas.v7n10p225
47. JN Buah, **PA Asare**, S Acheampong (2014). Optimizing sterilization condition for the initiation of sweet potato (Ipomoea batatas) culture in vitro. *Asian Journal of Biotechnology*. https://doi.org/10.5555/20153328823
48. **PA Asare**, K. A. Galyuon I., Asare-Bediako E., JK Sarfo, P. Tetteh J. (2014). Phenotypic and molecular screening of cassava (Manihot esculentum Crantz) genotypes for resistance to cassava mosaic disease. *Journal of General and Molecular Virology*. https://doi.org/10.5897/jgmv2014.0056
49. **PA Asare**, K A Galyuon I, JK Sarfo, P Tetteh J (2011). Morphological and molecular based diversity studies of some cassava (Manihot esculenta crantz) germplasm in Ghana. *AFRICAN JOURNAL OF BIOTECHNOLOGY*. https://doi.org/10.5897/ajb11.929
50. JN Buah, JW Tachie Menson, **P Asare** (2011). Sugarcane juice as an alternative carbon source for in vitro culture of plantains and bananas. *American Journal of Food Technology*. https://www.academia.edu/download/52996372/In_vitro_culture_sugar_cane.pdf

Book chapters 2

1. David O. Yawson, Michael O. Adu, **Paul A. Asare**, Frederick A. Armah (2021). Multifunctional Landscape Transformation of Urban Idle Spaces for Climate Resilience in Sub-Saharan Africa. https://doi.org/10.1007/978-3-030-45106-6_214
2. Kwabena Azure Sanleri, KK Amoah, **PA Asare**, E Afutu, K Atiah, Michael Osei Adu (2020). A meta-analysis of modifications of root system traits of crop plants to potassium (K) deprivation. *Plant Roots*. https://www.intechopen.com/chapters/74284

Reports 1

1. Michael O Adu, **Paul A Asare**, Frederick A Armah (2019). Transforming urban idle spaces into green, productive and aesthetic landscapes: the case of Cape Coast, Ghana. *SLU Global*. https://scholar.google.com/scholar?cluster=12290813982497962 87&hl=en&oi=scholarr

Theses 1

1. **PRISCILLA ASABEA Asare** (2019). The Impact of Energy Sector Debt on Banks' Total Liabilities to Total Asset Ratio in Ghana. *University of Ghana*. https://scholar.google.com/scholar?cluster=14461131032174209781&hl=en&oi=scholarr