

CURRICULUM VITAE

December 06, 2023

NAMES

Aristide Carlos Houdegbe (PhD) – Plant Breeding (Agronomy)

TITLE, RESPONSIBILITY, AND ACADEMIC AFFILIATION

Research Associate / Post Doctoral fellow

Genetics, Biotechnology and Seed Sciences Unit (GBioS),
Laboratory of Crop Production, Physiology and Plant Breeding (PAGEV),
Faculty of Agronomic Sciences, University of Abomey-Calavi, Republic of Benin.

CONTACT DETAILS

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Orcid: <http://orcid.org/0000-0003-3774-5658>

EDUCATION / BACKGROUND

2018 - 2022: Doctor of Philosophy (PhD), Plant Breeding, School of Agricultural, Earth and Environmental Sciences, University of KwaZulu-Natal, Pietermaritzburg Campus, South Africa.

2014 - 2016: Master of Science (MSc), Biotechnology and Plant Breeding, School of Plant Sciences, Faculty of Agronomic Sciences (FSA), University of Abomey-Calavi (UAC), Republic of Benin.

2014: Bachelor of Science (BSc), Natural Sciences, Faculty of Sciences and Techniques (FAST), University of Abomey-Calavi (UAC), Republic of Benin.

2008 - 2012: Bachelor of Science (BSc), Crop Science, Faculty of Agronomic Sciences (FSA), University of Abomey-Calavi (UAC), Republic of Benin.

RESEARCH INTERESTS

Plant Breeding, Plant Genetics, Plant Biotechnology, Plant Physiology, Bioinformatics, Horticulture and Agronomy, Neglected/Orphan/Underutilised Crops.

LANGUAGE PROFICIENCY

Highly proficient in French (native speaker) and English.

MOST RECENT SPECIFIC TRAININGS AND WORKSHOPS

July 2023. Second workshop to refine the curricula of the School of Nutrition and Food Sciences and Technologies (ENSTA) and the School of Plant Production Sciences and Techniques (ESTPV) of the Faculty of Agronomic Sciences (FSA) of the University of Abomey-Calavi (UAC) following the Skills-based learning. Abomey-Calavi, 04-06 July 2023.

May 2023. First workshop to refine the curricula of the School of Nutrition and Food Sciences and Technologies (ENSTA) and the School of Plant Production Sciences and Techniques (ESTPV) of the Faculty of Agronomic Sciences (FSA) of the University of Abomey-Calavi (UAC) following the Skills-based learning. Abomey-Calavi, 23-25 May 2023.

December 2022. Tricot citizen science training, “from on-farm testing to variety release”. IITA, IITA Campus Ibadan, Nigeria. 6-9 December 2022.

January 2021. Tools for Genomics-Assisted Breeding in Polyploids. Mainlab Bioinformatics, Washington State University, USA. January 12-15th, 2021.

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January 2021. Virtual “Workshop Professional Skills for Plant Breeders” by Professor Rex Bernardo. Organized by The National Association of Plant Breeders (NAPB) Education Committee. United States of America. January 29th, 2021.

October 2020. Three-Webinar Series on Statistical Analysis for Plant Breeders. Organized by The Accelerating Genetic Gains in Maize and Wheat (AGG) project, the Excellence in Breeding (EiB) Platform, and the International Maize and Wheat Improvement Centers’ (CIMMYT’s) Biometrics and Statistics Unit. Online Webinar. October 23rd, 26th and 29th 2020.

January 2020. Application of GBS data in breeding programs Workshop. Biosciences eastern and central Africa-International Livestock Research Institute (BeCA-ILRI) Hub. BeCA’s Integrated Genotyping and Support Services (IGSS) team. Nairobi, Kenya. 28th - 30th of January 2020.

December 2019. Expert consultation workshop: Global Conservation Strategy for crops in the Cucurbitaceae family. Organized by The Crop Trust and World Vegetable Center. The World Vegetable Center, East and Southeast Asia, Research and Training Station, Kasetsart University, Kamphaeng Saen Campus, Nakhon Pathom. 11th -13th December 2019.

November 2019: Assistant facilitator for the School of Agricultural, Earth and Environmental Sciences (SAEES) Postgraduate Workshop: R Statistical Software and Analysis training. University of KwaZulu-Natal, Pietermaritzburg Campus, South Africa. November 18-22nd, 2019

September 2019: Marker Assisted Breeding Training Workshop, BeCA-ILRI hub, IGSS platform, Nairobi, Kenya. 2nd – 27th September 2019.

February 2019: Workshop on Bioinformatics and Wheat Genomics II, Worcester, South Africa, The Science and Innovation Network (SIN), 4th – 8th February 2019.

October 2018: Plant Breeding E-Learning in Africa’s Professional Learning Community Workshop: Polished Presentations, University of KwaZulu-Natal, South Africa. Organized by Iowa State University and University of KwaZulu-Natal.

September 2018: Molecular Laboratory Training Workshop, Department of Plant Sciences, University of Cambridge, UK.

July 2018: British Council Researcher Links Workshop: “Breeding and modelling underutilized crops for community resilience” funded through the Newton Fund and South Africa’s National Research Foundation (NRF), University of KwaZulu-Natal, South Africa.

August – September 2017: International Training Programme (ITP) Modern breeding techniques of maize, IPBO and VIB-UGent Center for Plant Systems Biology, Technologiepark 927, 9052 Gent-Zwijnaarde, Belgium.

June 2017: Response surface and mixture designs: principles and applications in R. The Laboratory of Biomathematics and Forest Estimations (LABEF), Faculty of Agronomic Sciences, University of Abomey-Calavi, Benin.

September 2016: Management and Analysis of varietal selection data using Breeding Management System (BMS) and Breeding View. Organized by IBP (Pôle IBP), INRAB, WAAPP/PPAAO and AfricaRice, Cotonou, Benin.

January – June 2016: Plant Breeding Class: Quantitative genetics with application in R. Organized by Laboratory of Genetics, Horticulture and Seed Sciences (GBioS), University of Abomey-Calavi.

RESEARCH AND WORK EXPERIENCE

January 2023 – Present: Project Manager, “Choose, Grow, Thrive: Using citizen science in Expanding West Africa’s food basket with African Vegetables to tackle malnutrition”. Consortium Members: World Vegetable Center, Inland Norway University of Applied Sciences (INN University), University of Abomey-Calavi – Benin, IER Mali. Funded by the German Federal Ministry for Economic Cooperation and

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Development (BMZ) commissioned by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ).
Duration: 2021-2023.

January 2023 – Present: Project Manager, “Amplification of the agro-ecological transition for profitable and sustainable cereal and market gardening systems in the territories of Atacora in Benin and Houet in Burkina Faso”. Funded by the “Académie de Recherche et d’Enseignement Supérieur (ARES)” – Belgium.
Duration: 2019-2024.

January 2023 – Present: Project Manager, “Supporting the Agro-Ecological Transition through Agricultural Research (TAERA) in Benin”. Funded by the European Union and implemented by Enabel-Benin. Duration: 2021-2024.

October 2021 – June 2022: Monitor, “Practical Work – Demonstration for Master students in Biotechnology and Plant Breeding”. Faculty of Agronomic Sciences, University of Abomey-Calavi.

Jul 2012 – September 2022: Research assistant, Laboratory of Genetics, Horticulture and Seed Sciences (GBioS), Faculty of Agronomic Sciences (FSA), University of Abomey-Calavi (UAC), Benin.

Feb 2018 – September 2022: Research fellow, School of Agricultural, Earth and Environmental Sciences, University of KwaZulu-Natal, South Africa.

Jul 2012 – September 2022: Research assistant, Laboratory of Genetics, Horticulture and Seed Sciences (GBioS), Faculty of Agronomic Sciences (FSA), University of Abomey-Calavi (UAC), Benin.

Feb – Aug 2013: Program assistant. CTA/WUR pilot project on “Mainstreaming Tertiary Education in ACP ARD Policy Processes: Increasing Food Supply and Reducing Hunger” in University of Abomey-Calavi.

May 2013: Consultant. Bioversity International, West and Central Africa Office, Cotonou, Benin. West African Agricultural Productivity Project.

Feb 2012 – Jun 2013: Field assistant, Vegetable program of National Institute of Agricultural Research of Benin (INRAB).

CONFERENCES AND SYMPOSIUM

October 25th – 29th, 2021. Second Conference of the African Plant Breeders Association (APBA). “Accelerating Genetic Gains in Plant Breeding for Resilience and Transformative Food Systems and Economic Growth in Africa” Kigali, Rwanda.

August 16 – 20th, 2020. National Association of Plant Breeders 2020 Annual Meeting. Participation with poster presentation. Houdegbe C.A., Achigan Dako E.G., Sogbohossou D.E.O., Odindo A.O., Sibiyi J. Genetic analysis of leaf yield and related traits in *Gynandropsis gynandra* (L.) Briq.

March 8 -11th, 2020. 13th Southern African Plant Breeding Symposium. “Innovating together - Plant Breeding in the 4th Industrial revolution”. Future Africa Campus, University of Pretoria, Pretoria. Participation with oral presentation. Houdegbe C.A., Sibiyi J., Sogbohossou D.E.O., Odindo A.O., Achigan-Dako E.G. Genetic analysis of biomass yield in *Gynandropsis gynandra* (L.) Briq.

October 23rd – 25th, 2019. The Launch of the African Plant Breeders Association and Maiden International Conference. “Advances in Classical Breeding and Application of Modern Breeding Tools for Food and Nutrition Security in Africa”. Participation with poster presentation. Houdegbe C.A., Rago D.E., Salaou M., Sibiyi J., Sogbohossou D.E.O., Odindo A.O., Schranz M.E., Achigan-Dako E.G. 2020. Quantitative Analysis of Leaf Yield and Related Traits in *Gynandropsis gynandra* (L.) Briq.

September 11th, 2018. UK-Africa Food Security Symposium, University of Cambridge. Participation in Bio-innovation for Africa Pitch Competition.

September 4-6th, 2017. 8th Meeting of the IOBC/WPRS Working Group “GMOs in Integrated Plant Production” Gent University, Belgium. Theme “Modern Biotechnology in Integrated Crop Management”.

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Participation with Oral presentation. Houdegbe C. A., Tchokponhoue A. D, Sogbohossou O. E. D., Zoundjihekpou J., Achigan-Dako E. G. 2018. Current status and future of genetically modified crops in Benin.

MANUSCRIPTS REVIEW

Genetic Resources and Crop Evolution, Cogent Food and Agriculture.

PROFESSIONAL SERVICE

Co-Founder and **CEO** of the startup “Seed Services” specialized in the production and commercialization of high quality seeds of African horticultural crops.

PROFESSIONAL MEMBERSHIP

African Plant Breeders Association (APBA). <https://africanplantbreeders.ug.edu.gh/>

National Association of Plant Breeders (NAPB), United States of America. <https://www.plantbreeding.org/>

The International Society for Seed Science (ISSS). <https://seedscisoc.org/>

SCHOLARSHIPS AND AWARDS

2022 First Prize of Best Research Results and Innovation of the University of Abomey-Calavi organized by the University of Abomey-Calavi, December 2022.

2018 First Prize of “Bio-innovation for Africa” pitching competition organized by JR Biotek Foundation at the UK-Africa Food Security Symposium held at the University of Cambridge, UK, 11th September 2018.

2018 JR Biotek Foundation and University of Cambridge Scholarship for outstanding Africa based PhD students involved in agricultural research to participate in world-class Molecular Laboratory Training Workshop and UK-Africa Food Security Symposium held at the Department of Plant Sciences, University of Cambridge from 3rd - 12th September 2018.

2017 Intra Africa Mobility PhD Scholarship (Enhancing training and research mobility for novel crops breeding in Africa (MoBreed, www.mobreed.com)), University of KwaZulu-Natal, South Africa.

2017 VLIR-UOS scholarship to participate in the International Training Programme (ITP) Modern breeding techniques of maize from 21st August to 8th September 2017, IPBO and VIB-UGent Center for Plant Systems Biology, Technologiepark 927, 9052 Gent-Zwijnaarde.

MOST RECENT PUBLICATIONS

Peer-review articles

- ▶ Chatara, T., Musvosvi, C., **Houdegbe, A. C.**, Tesfay, S., & Sibiya, J. Morpho-physiological and biochemical characterization of African spider plant (*Gynandropsis gynandra* (L.) Briq.) genotypes under drought and non-drought conditions. *Frontiers in Plant Science*, 14, 1197462. <https://doi.org/10.3389/fpls.2023.1197462>
- ▶ Mahaman Mourtala, I. Z., Oselebe, H.O., Baina, D-J., Nwankwo Innocent, I. M., **Houdegbe, A. C.**, Oumarou, S., Chukwu, S. C. & Moussa, B. 2023. Selection of new sweetpotato hybrids for West Africa using accelerated breeding scheme and genotype × environment interaction under drought stress. *Scientific Reports* 13, 6489. <https://doi.org/10.1038/s41598-023-33593-2>
- ▶ Chatara, T., Musvosvi, C., **Houdegbe, A.C.**; Sibiya, J. (2023) Variance Components, Correlation and Path Coefficient Analysis of Morpho-Physiological and Yield Related Traits in Spider Plant (*Gynandropsis gynandra* (L.) Briq.) under Water-Stress Conditions. *Agronomy*, 13, 752. <https://doi.org/10.3390/agronomy13030752>
- ▶ Adigoun R. F. R., **Houdegbe A. C.**, Fassinou-Hotegni N. V., Segnon A. C., N’Danikou S., Adjé C. A. O., Adadja R. P. M. and Achigan-Dako E. G. (2022) Enabling effective maize seed system in low-income countries of West Africa: Insights from Benin. *Frontiers in Sustainable Food Systems* 6:1045629. doi: 10.3389/fsufs.2022.1045629

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- ▶ **Houdegbe A. C.**, Achigan-Dako E. G., Sogbohossou E. O. D., Schranz M. E., Odindo A. O. and Sibiyi J. (2022). Leaf elemental composition analysis in spider plant [*Gynandropsis gynandra* L. (Briq.)] differentiates three nutritional groups. *Frontiers in Plant Science* 13:841226. doi: 10.3389/fpls.2022.841226
- ▶ **Houdegbe, A. C.**, Achigan-Dako, E. G., Sogbohossou, E. D., Schranz, M. E., Odindo, A. O., & Sibiyi, J. (2022). Phenotypic variation in biomass and related traits among four generations advanced lines of Cleome [*Gynandropsis gynandra* L. (Briq.)]. *PLoS one*, 17(10), e0275829
- ▶ Chataika B. Y., Akundabweni L. S-M., **Houdegbe A. C.**, Achigan-Dako E. G., Sibiyi J., Masamba K. 2021. Dietary phytochemical screening of spider plant (*Gynandropsis gynandra* (L.) Briq.) accessions from Africa and Asia to identify genotypes for use in nutraceutical breeding. *Frontiers in Sustainable Food Systems* 5 (344). doi: 10.3389/fsufs.2021.733909
- ▶ Achigan-Dako, E.G., Sogbohossou, D.E.O., **Houdegbe, C.A.**, Salaou, M.A., Sohindji, F.S., Blalogue, J., Chataika, B.Y., Zohoungbogbo, H.F., Adje, C.A.O., Fassinou Hoteigni, N.V., Francisco, R., Abukutsa-Onyango M.O., Schranz, M.E. 2021. Ten years of *Gynandropsis gynandra* research for improvement of nutrient-rich leaf consumption: lessons learnt and way forwards. *Annual Plant Reviews* 4:1–45. doi: 10.1002/9781119312994.apr0774
- ▶ Zohoungbogbo H. P. F., **Houdegbe C. A.**, Sogbohossou O. E. D., Tossou M. G., Maundu, P., Schranz, M. E., Van Deynze A., Zoundjhepon J., Achigan-Dako E. G. 2018. Andromonoecy in *Gynandropsis gynandra* (L.) Briq. (Cleomaceae) and effects on fruit and seed production. *Genetic Resources and Crop Evolution*. <https://doi.org/10.1007/s10722-018-0687-5>.
- ▶ **Houdegbe C. A.**, Sogbohossou O. E. D., Achigan-Dako E. G. 2018. Enhancing growth and leaf yield in *Gynandropsis gynandra* (L.) Briq. (Cleomaceae) using agronomic practices to accelerate crop domestication. *Scientia Horticulturae*. 233:90-98. <https://doi.org/10.1016/j.scienta.2018.01.035>.
- ▶ **Houdegbe C. A.**, Tchokponhoue A. D, Sogbohossou O. E. D., Zoundjhepon J., Achigan-Dako E. G. 2018. Current status and future of genetically modified crops in Benin. *IOBC-WPRS Bulletin* 131: 33-40.
- ▶ Tchokponhoué D.A., Achigan-Dako E.G., N'Danikou S., **Houdegbe C. A.**, Agossou C.A.O., Assogba-Komlan F. and Vodouhè R.S. 2018. Regeneration ability and Seedling growth in the miracle plant *Synsepalum dulcificum* (Schumach. & Thonn.) Daniell. *Fruits* 73(1):13-21. <https://doi.org/10.17660/th2018/73.1.2>.
- ▶ **Houdegbe C. A.**, Sogbohossou O. E. D., Achigan-Dako E. G. 2016. Utilization and breeding perspective in the egusi gourd *Melothria sphaerocarpa* (Cogn.) H. Schaef. et S.S. Renner (syn: *Cucumeropsis mannii* Naudin). *Genetic Resources and Crop Evolution* 63(3): 545–559. <https://doi.org/10.1007/s10722-015-0361-0>.
- ▶ N'Danikou S., Achigan-Dako E. G., Tchokponhoue D. A., Agossou C. O. A., **Houdegbe C. A.**, Vodouhe R. S., Ahanchede A. 2015. Modelling socioeconomic determinants for cultivation and in-situ conservation of *Vitex doniana* Sweet (Black plum), a wild harvested economic plant in Benin. *Journal of Ethnobiology and Ethnomedicine* 11(1):28. <https://doi.org/10.1186/s13002-015-0017-3>.
- ▶ Achigan-Dako E. G., **Houdegbe A. C.**, Glèlè M., Nono-Womdim, R. 2014. Analyse du système de production et de distribution des semences de maïs (*Zea mays* L.) au Sud-Bénin. *Biotechnologie Agronomie Société et Environnement* 18(1): 49-60.

Book Chapter

- ▶ N'Danikou S., Tchokponhoue D. A., **Houdegbe C. A.**, Achigan-Dako E. G. 2014. African Plant Biodiversity in Pest Management. In Gurib-Fakim A. (Ed.) *Novel Plant Bioresources: Applications in Food, Medicine and Cosmetics*. John Wiley & Sons, Ltd, Chichester, UK. pp 263-283. ISBN 978-1-118-46061-0.

REFEREES

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Prof. Julia Sibiya

Acting Dean and Head of School of Agricultural, Earth and Environmental Sciences,

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