

PERSONAL INFORMATION

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Area of expertise:

Crop production and processing including bio-fuel analysis

Feedstuffs production

Environmental impact assessment and management

Feasibility studies and strategic planning

Farm management

Educational background

University Degree

- Ph.D. University of Reading, England (Agricultural Botany)
 - M. Sc. University of Reading, England (Crop Protection Technology) – entomology, bionomics of crop pests and beneficial insects, scientific basis of integrated control, pest population assessment in temperate and tropical crops, chemistry of crop protection pesticides, weeds and herbicides, plant pathology, plant parasitic nematodes and application of plant protection chemical
 - B. Sc. (Hons) Crop Science, University of Ghana
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LANGUAGE:

English speaking with modest competency in French

Profile

- Results oriented, high energy scientist with multi-disciplinary background and demonstrated expertise in crop production, insect science, weed science, on-farm experimentation, integrated pest management (IPM), organic farming; greenhouse crop production, environment and bioenergy, technology transfer, International Agriculture Development.
 - Innovative researcher devoted to education and learning, committed to the environment
 - Published author
 - Major strengths include strong leadership, excellent communication skills, competent, strong team player, attention to detail, as well as management and supervisory skills including, negotiation and people management skills, scheduling, training, and other administrative tasks.
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PROFESSIONAL EXPERTISE

Research Management

- Managed and led the Applied Ecology Department of 30 international scientists and 178 staff. Responsible for the day-to-day running of the department including ensuring the scientific quality of research and projects developed and writing of annual report for the department
- Managed a large national Agricultural development project in Ghana. The Canadian International Development Agency sponsored Ghana Grains Development Project was an excellent example of research/extension/farmer linkage project which produced excellent results for Ghana. Maize and legume production increased substantially through the development of improved varieties together with better agronomic and production practices. The project developed a solid research and technology transfer methodology and trained thousands of extension staff. The cross ministry project involving Crops Research Institute, Ministry of Food and Agriculture and Grains and Legumes Development Board had over 500 staff across the country.

Technical knowledge transfer

- Set up a strategic partnership with industry to ensure research results reach commercialization. Set up the Alberta Rhodiola Rosea Growers Organization (ARRGO) is a new generation cooperative that provides its members with a single-stop support for the production and sale of high-quality herbal products based on Good Agricultural Collection Practices (GACP).
- Transfer knowledge and best management practices to farmers using extension tools such as manuals, newsletters, training workshops, farm visits, open days and social media in many countries including Ghana, Kenya, Nigeria, Ivory Coast, Liberia, South Africa, Philippines, Mexico, Panama, Dominican Republic
- Several publications in refereed Journals including one in Nature, vol. 388, 14 August.

COMPUTER SKILLS

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|-------------------------|---|--|
| 1. Word processing | - | Microsoft Word |
| 2. Presentation | - | Microsoft PowerPoint |
| 3. Spread sheet | - | Microsoft Excel |
| 4. Scientific graphing | - | Sigma Plot; Microsoft Excel; Slide Write |
| 5. Statistical Analysis | - | SAS |
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PROFESSIONAL EXPERIENCE

Employer: Alberta Green Acres Agricultural Consulting Group

2015 to present

Working Title: Lead Consultant, Sustainable Agriculture and Food Systems

As the Leader, my duties are: (1) Competently assess the specific service needs of the Group; (2) Organize Unit to cost-effectively utilize resources to meet Group's research, capacity and profitability; (3) Ensure timely preparation of program work-plans, budgets, scientific and technical reports to clients (4)

Lead in the development of competitive proposals that target specific issues, especially those that will result in better delivery of services; (5) Lead, manage and motivate staff to ensure innovation and practice of good science.

Examples of Projects completed

- Development and Implementation of Integrated Pest Management for Alberta Greenhouse Industry
- Energy Efficient, Carbon Neutral. Greenhouse Infrastructure Modelling for Alberta Greenhouses Project Number: 17AGR 540
- Global Rhodiola Rosea Market Industry Trends, Sales, Supply, Demand, Analysis & Forecast to 2021
- Crop Profile Alberta Rhodiola rosea Industry
- Agriculture and Agri-Food Canada Project: Efficacy and Crop Tolerance Study. Study # AAFC15-012T Herbicide Screening Study on Rhodiola
- Agriculture and Agri-Food Canada Project In 2016 completed a project Herbicide Screening on Rhodiola (Study No.: AAFC15-012T; Trial ID No.: 309)
- Agriculture and Agri-Food Canada Project In 2016 completed a project Tolerance of Jerusalem artichoke to Ethalfluralin (Study No.: AAFC15-047T; Trial ID #: 059).
- Alberta Stevia Crop Diversification Project sponsored by GLG LifeTech. GLG is a vertically integrated producer of high-grade stevia extract, an all-natural sweetener extracted from the stevia plant. GLG is exploring the viability of establishing commercial Stevia growing, harvesting and cultivation operations in Canada, and specifically in Alberta.

Employer: Alberta Agriculture and Rural Development

2000 to 2015

Working Title: Scientist, Special and Greenhouse Crops

Primary responsibilities as Leader of Special crops Program

- Lead and implement R&D activities related to new crops and emerging opportunities for food, health, energy, biofuels and biomaterials to meet expanding agriculture
- Ensure timely preparation of program annual work-plans, budgets, scientific and technical reports to donors and stakeholders;
- Lead in the initiation of innovative research projects that are relevant to achieving the overall goal of the program;
- Lead, manage and motivate the program staff to ensure innovation, and the practice of good science that result in high quality results for end users and stakeholders.

Projects completed

- Optimizing biomass productivity as a renewable alternative to fossil raw materials of liquid fuels and chemicals.
- Biomass production research for the development of biomaterial for alternate fuel and the pulp and paper industry in Alberta
- Pennycress (*Thlaspi arvense*) Product Development for biodiesel - Preliminary Business case
- Greenhouse Environmental Management and Productivity
- Natural health products: Rhodiola rosea commercialization in Alberta
- Integrated Pest Management approach for control of root maggot, *Delia radicum* in Cabbage crops in Alberta
- Identification and Promotion of Ethnic Vegetable crops for production in commercial greenhouses in Alberta
- Novel strategies of controlling weeds and supplying nutrients in organic Canada Prairie

cereal crops

- Quinoa a potential crop for organic growers in Alberta
- **Employer:** International Centre of Insect Physiology and Ecology, Nairobi, Kenya 1990-1999 **Working Title:** Scientist (Agro Ecologist)

Head of Applied Ecology Department for two years International Centre of Insect Physiology and Ecology (*icipe*), Nairobi, Kenya. As Head of Applied Ecology with a staff of 178 and I had responsibility for the day-to-day running of the department including ensuring the scientific quality of research and projects developed, writing of annual report for the department of 30 international scientist Competently assessed the specific service needs of the Centre's Programs and Department;

Employer: International Rice Research Institute, Los Banos Philippines 1987-1990
Working Title: Post-Doctoral Research Fellow
Conducted research into the ecological physiology of rice and weeds

Employer: Crop Research Institute Ghana 1985- 1987
Working Title: Coordinator

- The CIDA-Ghana Grains Development Project worked on maize and legume improvement and the integration of farmers in research and extension activities. This project operated at a focused level. Day to day management of the project with over 500 staff from Ministry Agriculture, Grains and Legume Development Board and Crops Research Institute was undertaken by the coordinator. It was generally agreed that it was as one the most successful CIDA sponsored Project in Africa. Achievements

Employer: International Maize and Wheat Improvement Center (CIMMYT) Mexico Jan-June 1985

Working Title: Visiting Scientist

- Conducted research in maize breeding, agronomy and on-farm experimentation

Achievements/Projects:

- Conducted on-farm training for weed control in Mexico, Panama and Dominican Republic

AWARDS

1. The Alberta Greenhouse Growers Association: "Meritorious Service Award presented to Dr Kwesi Ampong-Nyarko for your outstanding support of the Alberta Greenhouse Industry November 19, 2015".
2. Alberta Premier's Award of Excellence (Gold) 2010
3. Canada Award for Excellence for *Rhodiola rosea* commercialization in Alberta.
4. 2010 Honoree The Alberta Science and Technology

BOOKS

Traditional Herbal Medicines for Modern Times: *Rhodiola rosea* Alain Cuerrier, Kwesi Ampong-Nyarko CRC Press - 2014 - 352 pages 978-1-43-988840-7 2014

Ampong-Nyarko, K. and S. K. De Datta (1991). A Handbook for weed Control in Rice International Rice Research Institute, 113 pages ISBN 971-22-0020-5

GROWERMANUALS

- Industrial Hemp Harvest and Storage Best Management Practices
- Industrial Hemp Enterprise
- Alberta Rhodiola Rosea Growers Organization Growers Manual February 2015.

PUBLICATIONS

Environment and Bioenergy

Ampong-Nyarko, K and Christine L. Murray 2011 Utility of Forage Grass Nutrient Composition Databases in Predicting Ethanol Production Potential J. Biobased Mater. Bioenergy 5, 295- 305 (2011)

Yingying Liu, Houfang Lu, Kwesi Ampong-Nyarko, Shijie Liu and Bin Liang (In press) Optimization and kinetic studies on biodiesel production with trace acid catalyst.

Luo, Q., W. Chute, K. Ampong-Nyarko. Chemical Composition and Morphology Changes During Outside Storage of Wheat, Barley and Triticale Straws. PAPTAC 94th Annual Meeting, Montreal, QC, February 6-7, 2008

Jun Xu, Qi (Keith) Luo and Kwesi Ampong-Nyarko 2008. The Effects of Combining on Chemical Composition and Morphology of Cereal Straws. 2nd International Papermaking & Environment Conference, Tianjin, China, May 14-17, 2008.

LUO Q, K. Ampong-Nyarko, and W. Chute 2008 paper presented Chemical Composition and Morphology Changes During Outside Storage of Wheat, Barley and Triticale Straws, PAPTAC 94th Annual Meeting February 5- 7, 2008, Palais des congrès de Montréal (Québec) Canada

Luo, K., K Ampong-Nyarko and S Liu 2007 Chemical Composition Changes During Outside Storage of Cereal Straws, Paper presented at 29th Symposium on Biotechnology for Fuels and Chemicals to be held April 29-May 2 2007 at the Denver Adams Mark Hotel, Denver, Colorado USA.

Ampong-Nyarko, K., B.D. Sloley, H. A. Semple, S. Lutz, D. Cole, S.F Hwang and Z. Zhang 2008 Factors influencing quality and concentration of rosavins in *Rhodiola rosea* L (Crassulaceae) under cultivation in Alberta. 5th Annual NHP Research Conference: March 26 - 29, 2008 at the Toronto Marriott Downtown Eaton Centre

Qi Luo, Kwesi Ampong-Nyarko and Shijie Liu 2007 Statistical comparison of chemical composition and morphology of Alberta grown oats, barley, wheat, and triticale straw February 5-9, 2007 PAPTAC . PAPTAC - TAPPI Nonwood Fibre Symposium 2006 in association with the PAPTAC 93 rd Annual Meeting Montreal

Qi Luo, Shijie Liu and Kwesi Ampong-Nyarko 2006 Variation of cereal straw chemical composition in different varieties and locations in The 5th International Non-Wood Fiber Pulping and Papermaking. Conference and the 3rd International Symposium on Emerging Technologies of Pulping and Papermaking NOV 8 – 10, 2006 Guangzhou, China

Blade Stanford F., Kwesi Ampong-Nyarko and Roman Przybylsk 2005 Fatty Acid and Tocopherol Profiles of Industrial Hemp Cultivars Grown in the High Latitude Prairie Region of Canada, Journal of Industrial Hemp Volume: 10 Issue: 2

Kwesi Ampong-Nyarko, Susan Lutz, John Brown, Mohyuddin Mirza, Hugh Semple, Duff Sloley, Robert Rogers and Jill De Mulder 2005. Experimental analysis of characteristics marker compounds in different plant parts of *Rhodiola rosea* in Alberta 2nd Natural Health Product Conference, Feb 11-13, Vancouver, British Columbia

Blade, S.F. and K. Ampong-Nyarko. 2004 Crop diversification in western Canada-lessons learned. In (R. Fletcher, ed.) Innovation and change for agriculture and horticulture: Proceedings of the Second Australian New Crops Conference. University of Queensland, Gatton, Campus (abstract), p.7.

Natural Health Products

Ampong-Nyarko K, Lutz S, Sloley BD, Piquette K, Zhang Z. Assessments of soil productivity for roseroot (*Rhodiola rosea* L) cultivation in Alberta. Zeitschrift für Arznei & Gewürzpflanzen (Journal of Medicinal & Spice Plants) 4/2011

Detection and molecular characterization of an ester yellows phytoplasma in *Rhodiola* in Alberta, Canada Journal of plant Diseases and Protection 116 (4), 145-148 S F Hwang, J Feng, R Hwang, S E Strekov, K Ampong-Nyarko, G D Turnbull, R J Howard

Hwang, S.F., H.U. Ahmed, K. Ampong-Nyarko, S.E. Strelkov, R.J. Howard and G.D. Turnbull, 2009. Causal agents of root rot and the effect of vesicular-arbuscular mycorrhizal fungi in seedlings of *Rhodiola rosea* in Alberta, Canada. Plant Pathol. J., 8: 120-126

Ampong-Nyarko Kwesi, Blade S., Mirza M. and Yumiko Hoyano 2004. Greenhouse- grown echinacea: yield, quality and echinacoside content in Alberta. 1st Natural Health Product Conference, Feb 19-21, Montreal, Quebec

Ampong-Nyarko K 2008 *Rhodiola rosea* Agronomic Research in Alberta Canada. Meeting Nettverk Rosenrot, Bioforsk Øst Apelsvoll / Kapp Norway Aug 25th 2008

K. Ampong-Nyarko, Z. Zhang, B. D. Sloley, D. Cole, S. F. Hwang, S. Lutz and H. Semple 2009. Development, production, and quality of cultivated *Rhodiola rosea* in Alberta. Pharmaceutical Biology vol 47 Supplement 1

K. Ampong-Nyarko, S. Lutz, B. D. Sloley, D. Cole, L. Papworth, S. F. Hwang, F. Dooley, A. N. Chaudhary, P. Watson, H. Semple and Z. Zhang 2009. Development, production, and quality of cultivated *Rhodiola rosea* as a new crop in Alberta. FarmTech 2009 Showcase guide and Proceedings p 136.

Integrated Pest Management

N. K. Maniania, S. Sithanatham, S. Ekesi, K. Ampong-Nyarko, J. Baumgärtner, B. Löhr, C. M. Matoka 2003 A field trial of the entomogenous fungus *Metarhizium anisopliae* for control of onion thrips, *Thrips tabaci* Crop Protection, Volume 22, Issue 3, April 2003, Pages 553-559

Blade, S. F., Ampong-Nyarko, K., Bandara, M. S., Buss, T. J., Lopetinsky, K., Olson, M., LaFlamme,

P., Piquette, K. G., and Clark, N. F 2002. Yield Potential and Constraints Analysis of Field Pea Crops in Alberta 4th Canadian Pulse Research Workshop, Edmonton, Dec 8-10.

Ekesi, Sunday; Maniania, Nguya K.; Ampong-Nyarko, Kwesi; Akpa, Abubakar D. 2001 Importance of timing of application of the entomopathogenic fungus, *metarhizium anisopliae* for the control of legume flower thrips *Megalurothrips sjostedti* and its persistence on cowpea... Archives of Phytopathology & Plant Protection, Feb2001, Vol. 33 Issue 5, p431, 15p; (AN 6389617)

Ekesi, Sunday; Maniania, Nguya K.; Ampong-Nyarko, Kwesi; Akpa, Abubakar D Effect of intercropping cowpea with maize on the performance of *Metarhizium anisopliae* against *Megalurothrips sjostedti* (Thysanoptera: Thripidae) and predators. Environmental entomology, Dec 1999. v. 28 (6), p. 1154-1161.

Effect of Temperature on Germination, Radial Growth and Virulence of *Metarhizium anisopliae* and *Beauveria bassiana* on *Megalurothrips sjostedti*. By: Ekesi, S.; Maniania, N. K.; Ampong-Nyarko, K.. Biocontrol Science & Technology, Jun99, Vol. 9 Issue 2, 2 charts, 1 diagram, 2 graphs; (AN 3972813)

Ekesi S., N. K. Maniania and K Ampong-Nyarko 1999. Effect of temperature on germination, radial growth and virulence of *Metarhizium anisopliae* and *Beauveria bassiana* on *Megalurothrips sjostedti* , Biocontrol Science and Technology 9, 177-185.

Ekesi S., N. K. Maniania, K Ampong-Nyako and I. Onu. 1999. Effect of Intercropping cowpea with maze on the performance of *Metarhizium anisopliae* against *Megalurothrips sjostedti* (Thysanoptera:Thripidae) and predators. Environmental Entomology, vol. 29 no.6. 1154- 1161.

Khan, Z. R., K. Ampong-Nyarko , P. Chiliswa, A. Hassanali, S. Kimani, W. Lwande, W. A. Overholt, J. A. Pickett, L. E. Smart, L. J. Wadhams and C. M. Woodcock (1997). Intercropping increases parasitism of pests . Nature, vol. 388, 14 August

Annan, I. B., K Ampong-Nyarko, W. M. Tingey and G. A. Schaefer (1997). Interactions of fertiliser, cultivar selection, and infestation by cowpea aphid (aphididae) on growth and yield of cowpea. International Journal of Pest Management 43(4) 307-312.

S. Ekesi, N. K. Maniania, K. Ampong-Nyarko and I. Onu (1998) Potential of the entomopathogenic fungus, *Metarhizium anisopliae* (Metsch) Sorokin for control of the legume flower thrips , *Megalurothrips sjostedti* (Trybom) on cowpea in Kenya. Crop Protection Vol 17

Khan Z. R., P. Chiliswa, K. Ampong-Nyarko , L. E. Smart, A. Polaszek J. Wandera and M. Mulaa (1997). Utilisation of wild graminaceous plants for management of cereal stem borers in Africa. Insect Science and Its application 17, 143-150.

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Ampong-Nyarko, K. V Seshu Reddy, R. A. Nyango'r and K. N Saxena (1994). Reduction of insect attack on sorghum and cowpea by intercropping. *Entomol. exp. Appl.* 70: 179-184.

Ampong-Nyarko, K. V Seshu Reddy, R. A. Nyango'r and K. N Saxena (1994). Compatibility of stemborer resistance sorghum lines for intercropping. *Tropicicultura* 12, 1, 10-14.

Ampong-Nyarko, K. V Seshu Reddy and K. N Saxena 1994 *Chilo partellus* (Swinhoe) (Lep., Pyralidae) oviposition on non-hosts. A mechanism for reduced pest incidence in intercropping. *ACTA Oecologica* 15 (4), 469-475

Ampong-Nyarko, K. V Seshu Reddy, R. A. Nyango'r and K. N Saxena (1994). Reduction of insect attack on sorghum and cowpea by intercropping. *Entomol. exp. Appl.* 70: 179-184.

Ampong-Nyarko (1993). Physiological shade adaptation and its implication for intercropping. International Meeting on Ecophysiology of Tropical Intercropping, Gosier, Guadeloupe, December 6-10, 1993

Ampong-Nyarko, K., Harahap, Z. and Olela J. C. (1994). *Striga* resistance in upland rice. *Rice Biotechnology Quarterly*, Vol 18, 5.

Harahap, Z., Olela J. C. Ampong-Nyarko, K. and R. C. Saxena (1992). Upland rice cultivars resistant to parasitic weed *Striga hermonthica* 1992. *International Rice Research Newsletter*, volume 17, Number 4:10

Agronomy

Ampong-Nyarko, K. (1994). Weed Management in tropical cereals: maize, sorghum and pearl millet. In R. Labrada, C. Casely and C. Parker (Eds.) *Weed Management for developing countries*. FAO Plant Production and Protection paper 120, FAO, Rome. pp 264-270.

Ampong-Nyarko, K. (1994). Weed management in cowpea In R. Labrada, J. C. Casely and C. Parker (Eds.) *Weed Management for developing countries*. FAO Plant Production and Protection paper 120, FAO, Rome. Pp 277-281.

Ampong-Nyarko, K. (1994) Weed management in tropical roots and tubers: yams, cocoyams, cassava and sweet potato. In R. Labrada, J. C. Casely and C. Parker (Eds.) *Weed Management for developing countries*. FAO Plant Production and Protection paper 120, FAO, Rome. Pp 301-308.

Ampong-Nyarko, K. (1997) Weed management in Rice Africa. *Weed Management in Rice*, FAO

Ampong-Nyarko, K. and S. K. De Datta (1993). Interaction of nitrogen and light on the dynamics of rice-weed competition. *Weed Research*, 1993, Volume 33, 1-8

Ampong-Nyarko, K. and S. K. De Datta (1993). Effects of nitrogen application on growth nitrogen use efficiency and rice-weed interaction. *Weed Research*, 1993, Volume 33,

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Ampong-Nyarko, K. and S.K. De Datta (1990) Rice and weed competition for resources. *Philippine Journal of Weed Science*

Ampong-Nyarko, K. and S. K. De Datta (1989). Ecophysiological studies in relation to weed management strategies in rice. Pages 35-45 in *Proceedings 12th Asian Pacific Weed Science Society Conference Seoul South Korea, 19-25 August 1989*. This paper won the second best paper award among over 100 papers

Ampong-Nyarko, K. (1989) *Striga* in Ghana. In Robson, T.O. and H. R. Broad editors. *FAO Plant Production and Protection Paper 96*, FAO, Rome, pp 51-53

De Datta S. K., Ampong-Nyarko, K. (1988). Integrated weed management in irrigated rice. Keynote paper presented at 20th Philippines Pest Control Conference, May 1988 Sacred Heart Centre, Cebu.

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