

## CURRICULUM VITAE



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### School education

1972-1978 Primary. Racecourse Day School, Nairobi (Kenya)  
1979-1982 GCE O-level. Eastleigh High School, Nairobi (Kenya)  
1983-1984 GCE A-level. Njiiris High School, Thika (Kenya)

### University

1986-1989 B.Sc. (Agriculture). Nairobi University (Kenya)  
1989-1991 M.Sc. (Plant breeding and Genetics). Nairobi University (Kenya)  
2000-2003 Doctorate. (Agricultural Science) Kiel University (Germany)

### Work Experience

1985-1986 Civil servant: Cartography Department. Ministry of Finance and Economy.  
1990-1991 Research Assistant: Pigeonpea Improvement Project-crop science department: Nairobi University  
1993 Energy Conservation Officer: Eukawa Technical Services, Kiambu  
1994-1999 Self-employed: Agricultural consultation services to flower and horticultural farmers in Kenya.  
1994-1999 (2005) Lecturer (Part-time): Horticulture/Botany departments, Jomo Kenyatta University for Agriculture and Technology.  
2000-2003 Research Fellow: Institute for Crops and Grassland sciences, Federal Agricultural Research centre (FAL) Braunschweig, Germany.  
2006 to 2008 Lecturer: Horticulture department-JKUAT  
2008 to date Senior Lecturer Horticulture department  
2008 to 2011 In Country Co-supervisor: University of Kwazulu-Natal  
2008 to date Director Institute for Biotechnology Research (JKUAT)  
Manage biotechnology and tissue culture research and development.  
Conduct training in biotechnology at postgraduate level. Provide support structure for biotechnology research innovations and products.

- 2009 to date 1. External examiner. Dept. of Botany and Horticulture-Maseno University. Kenya
- 2010 to date 2. External examiner. Dept. of Applied Biology. Kigali Institute of Science and Technology. Rwanda.
- 2010 to date 3. Member of the Joint Academic board of KIOF (Kenya Institute of organic farming) and RUCID (Rural Community in Development).
- 2012 to date 4. External examiner, School of Agriculture and Biotechnology. Chepkoilel University College
- April 2012 to Dec 2012 Ag. Director: Board of postgraduate studies-JKUAT

## **Publications**

### **1990-2000**

#### **Journal publications (1990-2000)**

1. Nyende, A.B. 1992. Selection and evaluation of pigeonpea (*Cajanus Cajan* L.) genotypes for resistance to fusarium wilt pathogen (*Fusarium oxysporium* f.sp. *udum*) and other agronomic traits. M.Sc. Thesis. University of Nairobi.
2. Kimani, P.M., **A.B. Nyende**, S. Silim. 1994. Development of early maturing fusarium wilt resistant pigeonpea cultivars. African Crop Science Journal. 2: 35-51.

#### **Proceeding papers (1990-2000)**

1. Nyende, A.B. 1990. Selection for early maturing wilt resistant pigeonpea genotypes. In (Eds.) Kimani P.M, S.M. Githiri, E.W. Njoya, C.B. Mukindia, H.M. Mugo and A.B. Nyende, Pigeonpea Improvement in Kenya. Third report of phase IV. International Development Research Centre (IDRC), Ottawa, Canada.

### **2001-2005**

#### **Journal publications (2001-2005)**

1. Nyende, A.B., S. Schittenhelm, G. Mix-Wagner, J. -M Greef. 2002. Synthetic potato seeds offer the potential to improve the Kenyan seed system. Landbauforschung Völkenrode 52: 141-148.
2. Nyende, A.B., S. Schittenhelm, G. Mix-Wagner, J.-M Greef. 2003. Production, storability and regeneration of shoot tips of potato (*Solanum tuberosum* L.) encapsulated in calcium alginate hollow beads. In Vitro Cellular and Development Biology-Plant Journal. 39: 540-544.

3. Nyende, A.B. 2003. Production, regeneration and field growth of synthetic seeds of the potato. Dissertation, Christian-Albrechts- University of Kiel. Cuvillier Verlag, Göttingen, Germany.
4. Nyende, A.B., S. Schittenhelm, G. Mix-Wagner, J. -M Greef. 2005. Yield and canopy growth characteristics of field grown synthetic seeds of potato. *European Journal of Agronomy* 22 (2005) 175-184.

#### **Proceeding papers (2001-2005)**

1. Nyende, A.B., S. Schittenhelm, G. Mix-Wagner, J.-M. Greef. 2002. Synthetische Kartoffelsamen. Eine Alternative zur Knolle? In Kurzfassungen der Vorträge und Poster. Mitteilungen der Gesellschaft für Pflanzenbauwissenschaften. September 26-28, Berlin, Germany. 14: 314-315.
2. Nyende, A.B., S. Schittenhelm, G. Mix-Wagner. 2002. Plant Regeneration from Synthetic seeds of Potato. In Abstracts of papers and posters. G. Wenzel and I. Wulfert (Eds.), Potatoes Today and Tomorrow. The 15<sup>th</sup> Triennial Conference of the European Association for Potato Research. July 14-19, Hamburg, Germany. p 272.

#### **Journal publications (2006-2010)**

### **2006-2010**

1. Kuria, P., Demo, P., **Nyende, A. B.**, Kahangi, E. M. 2008. Cassava starch as an alternative cheap gelling agent for the *in vitro* micropropagation of potato. *African Journal of Biotechnology*. 7 (3). pp 301-307.
2. Nyende, A.B. 2008. Biotechnology in plant nutrient management for sustainable production in the tropics: The research link. *African Journal of Biotechnology*. 7 (6). pp 664-669.
3. Mwangi J.K, **Nyende A.B**, Demo P, Matiru V. 2008. Detection of latent infection by *Ralstonia solanacearum* in potato (*Solanum tuberosum*) using stems for seed tuber production. *African Journal of Biotechnology*. 7 (11). pp 1644-1649.
4. Demo, P., Kuria, P., **Nyende, A.B.**, Kahangi, E. M. 2008. Table sugars as an alternative low cost medium component for *in vitro* micropropagation of potato (*Solanum tuberosum* L.). *African Journal of Biotechnology*. 7 (15). pp 2578-2584.

5. Karuri, H. W., Ateka, E. M., Amata, R., **Nyende, A.B.**, Muigai, A.W. T. 2009. Morphological markers cannot reliably identify and classify sweet potato genotypes based on resistance to SPVD and dry matter content. *Journal of Applied Biosciences*. Vol. 15: 820-828.
6. Karuri, H. W., Ateka, E. M., Amata, R., **Nyende, A.B.**, Muigai, A.W. T. 2009. Molecular characterization of Kenyan sweet potato genotypes for SPVD resistance and high dry matter content using SSR markers. *The African Journal of Biotechnology*. Vol. 8 (10) pp 2169-2175.
7. Mwirigi P.N., Kahangi E.M., **Nyende A.B.**, Mamati E.G. 2009. Morphological variability within the Kenyan yam (*Dioscorea* spp.) *Journal of Applied Biosciences* 16: 894-901.
8. Nyende A.B, Mwangi J.K, Demo P, Matiru V. 2009. Improving seed potato tuber multiplication in Kenya using the Rapid-seed scheme technique. *Journal of Agriculture, science and Technology*. March 2009: *Journal of Agriculture Science and Technology*. 11(1): 1-16.
9. Karuri, H. W., Ateka, E. M., Amata, R., **Nyende, A.B.**, Muigai, A.W. T. E. Mwasame and S.T. Gichuki. 2010. Evaluating diversity among Kenyan sweet potato genotype using morphological and SSR markers. *International journal of Agricultural Biology*.12: 33-38.
10. Murungi L.M., **A. B. Nyende**, P. W. Masinde, J. M. Wesonga and M. A. Knapp (2010) Effect of African nightshade species (Solanales: Solanaceae) on developmental time and life table parameters of *Tetranychus evansi* (Acari: Tetranychidae): *Journal of Exp. Appl. Acarology* 52 (1): 19-27.
11. James Oluoch Nonoh, Wilber Lwande1, Daniel Masiga, Rafi Herrmann, James K. Presnail, Eric Schepers, Matilda Angela Okech, Richard Bagine, Paul Mungai, **Aggrey Bernard Nyende** and Hamadi Iddi Boga. 2010. Isolation and characterization of streptomyces species with antifungal activity from selected national parks in Kenya. *African journal of Microbiology Research*. Vol. 4 (9) pp 856-864.
12. Mwirigi P.N., Kahangi, E.M., **Nyende A.B.**, and Mamati E.G. 2010. In vitro propagation of the Kenyan yam (*Dioscorea* spp). *African journal of Horticultural Science*. 3: 112-122.
13. Asudi G., E.M. Ateka, **A.B. Nyende**, F. Wanzala. (2010), Morpho-

logical diversity of Kenyan Papaya Germplasm. Accepted October 2010.  
African journal of Biotechnology 9 (51): 8754-8762

### **Proceeding papers (2006-2010)**

1. Nyende, A.B. 2006. Biotechnology in plant nutrient management for sustainable production in the tropics: The link. In abstracts of papers and programme. (HAK). Sustainable horticultural production systems in the tropics. December 6-9, KARI, coast regional research centre, Mtwapa, Kenya pp. 22.
2. Kuria P, Demo P, Kahangi E.M., **Nyende A.B.** 2006. Cassava starch as a gelling agent for micropropagation of potato nodal explants. In abstracts of papers and programme (HAK). Sustainable horticultural production systems in the tropics. December 6-9, KARI, coast regional research centre, Mtwapa, Kenya pp. 23
3. Mwangi, J.K., **Nyende A.B.**, Matiru V.N., Demo, P. 2007. Improving seed potato quality in farmer's fields in Kenya using positive selection. pp. 79. Book of abstracts. The JKUAT scientific technological and industrialisation conference. 25-26th October 2007. Nairobi, Kenya.
4. Nonoh, J., H.I. Boga, W. Lwande, **A.B. Nyende**, D. Masiga, M. Okech. Isolation and characterisation of actinobacteria producing secondary metabolites with potential for control of *fusarium* spp. and *fusarium kahawae*. The JKUAT scientific technological and industrialisation conference. 25-26th October 2007. Nairobi, Kenya.
5. Nyaga, A., **Nyende, A.B.**, K. Ngamau.2007. Selection for yield and high oil content in macadamia hybrids using conventional breeding tools. KARI mini conference. KARI headquarters: Nairobi 5-7<sup>th</sup> November 2007.
6. Murungi, L.K., Knapp M., **Nyende, A.B.**, Masinde, P., Wesonga, J.M. 2007. The development time of *tetranychus evansi* on different accessions of African nightshade species. pp 10-11. The 4<sup>th</sup> African Acarology symposium. 22-26 October 2007. Yasmine Hammamet-Tunisia.
7. Murungi, L.K., Knapp M., **Nyende, A.B.**, Masinde, P., Wesonga, J.M. 2007. Effects of African nightshade (*Solanum spp.*) species on fecundity and longevity of *Tetranychus evansi*. In abstracts of papers and pro-

- gramme (HAK-7<sup>th</sup> workshop). Sustainable horticultural production systems in the tropics. 28<sup>th</sup> Nov to 1<sup>st</sup> Dec. 2007. University of Nairobi
8. H.W. Kariuki, E.M. Ateka, R. Amata, **A.B. Nyende** and A. Muigai. Characterisation of Kenyan sweet potato genotypes for sweet potato virus disease resistance and high dry matter content using morphological markers. Book of Abstracts. 2008 Jomo kenyatta scientific, technological and industrial conference.” Scientific and technological solutions for sustainable industrialization and socio-economic growth. Pp81.
  9. Mwirigi P.N., Kahangi E.M., **Nyende A.B.**, Mamati E.G. Morphological variability within the Kenyan Yam (*Dioscorea* spp.). Book of Abstracts. 2008 Jomo kenyatta scientific, technological and industrial conference.” Scientific and technological solutions for sustainable industrialization and socio-economic growth. Pp87.
  10. Murungi, L.K., **A.B. Nyende**, P.W. Masinde, P., J.M. Wesonga, and M. Knapp. Population density of *tetranychus evansi* on different African nightshade species. Book of Abstracts. 2008 Jomo kenyatta scientific, technological and industrial conference.” Scientific and technological solutions for sustainable industrialization and socio-economic growth. Pp94.
  11. C.M. Mweu, J.M. Onguso, J.N. Rugetho and **A.B. Nyende**. Mass micropropagation of *Aloe vera* L. through leaf derived callus. Book of Abstracts. 2008 Jomo kenyatta scientific, technological and industrial conference.” Scientific and technological solutions for sustainable industrialization and socio-economic growth. Pp81.
  12. Muthamia Z.K., G.N. Ngae., S. Njau, E.M. Ateka., **A.B. Nyende**, E.G. Mamati. 2008. Distribution and agronomic practices of farmer-named (*Dioscorea* spp) cultivars in major growing areas in Kenya. 11<sup>th</sup> KARI biennial scientific conference and 3<sup>rd</sup> agricultural forum. KARI headquarters: Nairobi 10-14<sup>th</sup> November 2008.
  13. Murungi, L.K., Wesonga J.M., Masinde P.W., **Nyende A.B.**, and M. Knapp. Influence of leaf trichome density of selected African nightshade species on fecundity of *tetranychus evansi*. December 2008. Book of Abstracts, 8<sup>th</sup> workshop on sustainable horticulture production in the tropics. “Value chain of fruits for local, market, export and processing.

Pp 20.

14. Cecilia Mbithe Mweu, Justus M. Onguso, Jane Njambi Rugetho, and **Aggrey Bernard Nyende**. 2008. Regeneration Protocol of Aloe Vera L. In book of abstracts. pp12. The 1<sup>st</sup> All Africa Congress on Biotechnology. 22-26<sup>th</sup> September 2008. Nairobi, Kenya.
15. Waithira Serah Kahiu and **Aggrey B. Nyende**. 2008. Biotechnology and the youth: A Kenyan perspective. In book of abstracts. pp131. The 1<sup>st</sup> All Africa Congress on Biotechnology. 22-26<sup>th</sup> September 2008. Nairobi, Kenya.
16. Bii, F. Wanyoike, W., Bii, C., **Nyende, A.B.**, Gituru, R. 2009. Characterization of fusarium species in maize and determination of their mycotoxins in eastern Province, Kenya. Scientific conference Book of abstracts-faculty of science Jomo kenyatta university of agriculture and technology. 5-6<sup>th</sup> May 2009. pp8.
17. Makobe M.N., Wambua J.M., **Nyende, A.B.**, .Njue, E.M. 2009. Field assessment of somaclonal variants of sorghum bicolor L. Moench. 2009. Scientific conference Book of abstracts-faculty of science Jomo kenyatta university of agriculture and technology. 5-6<sup>th</sup> May 2009. pp23.
18. J.K. Akwale, **A.B. Nyende**, A. Muigai, G. Magoma and H.I. Boga. (2010). screening of novel antibiotics from termite gut actinobacteria to counter the effect of antibiotic resistance. The 2<sup>nd</sup> annual health sciences conference (innovative trends in health sciences). JKUAT 27<sup>th</sup> to 28<sup>th</sup> May.2010.
19. Stella Muiruri, Mweu M.C., and **A.B. Nyende**. (2010). Invitro propagation of roses from nodal explants. 10<sup>th</sup> workshop on sustainable horticultural production in the tropics of the Horticultural association of Kenya (HAK). Pg 7. Value chains of ornamental for local and export markets. 8<sup>th</sup> to 11<sup>th</sup> December 2010. AICAD-JKUAT. Nairobi-Kenya.
20. Njeru MJ, Njue EM, **Nyende AB**, Mamati EG, and Njoroge G. The case of liming on biodiversity in Embu tea zone landscapes: case study kavutiri area. 10<sup>th</sup> workshop on sustainable horticultural production in the tropics of the Horticultural association of Kenya (HAK). Pg 14. Value chains of ornamental for local and export markets. 8<sup>th</sup> to 11<sup>th</sup> December 2010. AICAD-JKUAT. Nairobi-Kenya.

21. Nyakundi W, G. Magoma, J. Ochora and **A. Nyende** (2010). Biodegradation of diazinon and methomyl by white rot fungi from selected horticultural farms in rift valley and central provinces, Kenya. Pg 54. The 5<sup>th</sup> JKUAT scientific technological and industrialization conference - science, technology and innovation for industrialization and sustainable development. 17<sup>th</sup> to 19<sup>th</sup> November.

22. S. Agili, **A.B. Nyende**, K Ngamau and P. Masinde. Screening, yield evaluation of drought tolerant orange fleshed sweet potato hybrid clones for East Africa. Pg 56. The 5<sup>th</sup> JKUAT scientific technological and industrialization conference - science, technology and innovation for industrialization and sustainable development. 17<sup>th</sup> to 19<sup>th</sup> November.

## **2011- to date      Journal publications (2011 to date)**

1. J.M. Wambua, M.N. Makobe, E.M. Njue and **A.B. Nyende**. 2010. Hydroponic screening of sorghum cultivars for Salinity tolerance. Journal of Agriculture and technology. Vol 12 (2). pg 82-91.

2. Tsoka O., P. Demo, **A.B. Nyende**, K. Ngamau. 2011. Potato seed tuber production from invitro and rooted apical stem cuttings under aeroponic systems. African journal of Biotechnology Vol 11(63) pp 12612-12618.

3. J.M. Kimani, P. Tangoonga, J. Derera and A.B. Nyende. **2011**. Upland rice varieties development through participatory breeding. Journal of Agricultural and Biological Science. Vol. 6: 2011. pg 1-11.

4. Stella N Muiruri, C.M. Mweu, **A.B. Nyende**. 2011. Micropropagation protocols using nodal explants of selected Rose (*Rosa Hybrida*) cultivars. African journal of Horticultural Science. Vol. 4 (1). 2011.pg 60-65.

5. W.O. Nyakundi, G. Magoma, J. Ochora and **A. B. Nyende** (2011). Biodegradation of diazinon and methomyl pesticides by white rot fungi from selected horticultural farms in rift valley and central Kenya. Journal of applied technology in environmental sanitation. Vol 1 (2). Pg107-124.

6. Johnstone Neondo, Joseph Machua, Anne Muigai, **Aggrey Bernard Nyende**, Moses Munjuga, Ramni Jamnadass and Alice Muchugi. 2011.



Micropropagation of *Allanblackia stuhlmanii*: Amenability to tissue culture techniques. International Journal for Biotechnology and Molecular Biology Research. Vol. 2 (11). Pg185-194.

7. Murungi, L.K., M. Knapp, D. Salifu, J.W. Wesonga, **A.B Nyende**, P. Masinde and B. Torto. (2011). Differential effects of various African nightshade species on the fecundity and movement of *Teranychus evansi*. International journal of tropical insect science Vol. 31 (4). pp 269-276.

8. S. Agili, **A.B. Nyende**, K Ngamau and P. Masinde. 2012. Selection, yield evaluation, drought tolerance indices of orange fleshed sweet potato hybrid clone. Journal of nutrition and food sciences Vol 2-3. open access

9. Gichimu B.M., Gichuru E.K., Mamati G.E. and **Nyende A.B.** 2012. Selection of Ruiru 11 Hybrid Sibs based on Raw Coffee Quality. African journal of Horticultural sciences 6: 72-82.

10. Gichimu B.M., Gichuru E.K., Mamati G.E. and **Nyende A.B.** 2012. Selection within Coffee Arabica cv. Ruiru 11 for high cup quality. Accepted. African journal of food sciences. Vol. 6 (18) pp 456-464.

11. Njeru MJ, Mugai EN, Njoroge G, and **Nyende A.B.** 2012. The impact of liming on biodiversity in embu tea zones landscapes: A case study of kavutiri area. African journal of Horticultural sciences 6: 61-71.

12. Gichimu B.M., Gichuru E.K., Mamati G.E. and **Nyende A.B.** 2012. Yield Selection within *Coffea arabica* cv. Ruiru 11. American Journal of Experimental Agriculture 3(1): 76-88, 2013.

13. Asudi G., F. K. Ombwara, F. Wanzala, E.M. Ateka, **A.B. Nyende**, L.S. Wamocho. 2013. Evaluating diversity among Kenyan papaya germplasm using simple sequence repeat markers. Vol. 13.no.1: African journal of food, agriculture, nutrition and development.

14. Tesfamichael A., **A. B. Nyende**, S. M. Githiri, R.W. Kasili, W. Araia. 2013. Documentation of Sorghum (*Sorghum bicolor* L Moench) Landraces: Production, Utilization and Challenges in Eritrea. Vo. 8. no. 6. Journal of Agricultural and Biological Sciences. Pp 498-508.

15. Brhan K. Saleh, Nyende A.B., Kasili R. Mamati E. and Woldeamlak Araia. 2013. Current status and future opportunities of pepper produc-

tion in Eritrea Accepted September 2013. Journal of Agricultural and Biological Sciences. Vol 8. no. 9. pp 655-672

16. Z. K. Muthamia, F. E. Morag, **A. B. Nyende**, E. G. Mamati and B. W. Wanjala. 2013. Estimation of genetic diversity of the Kenyan yam (*Dioscorea* spp.) using microsatellite markers. African Journal of biotechnology. Vol 12. (40): 5845-5851.

17. Lucy K. Murungi, Salifu, D, Peter Masinde, **Aggrey Nyende**, John Wesonga, Markus Knapp. 2013. The invasive tomato red spider mite (Acari: Tetranychidae) affects growth and leaf yield of African nightshades. Accepted November 2013 Crop Protection journal.

18. Mercy K. Liharaka, Amos E. Alakonya and **Aggrey B. Nyende**. 2013: Bioactivity determination of methanol and water extracts for roots and leaves of Kenyan *Psidium guava* L. landraces against pathogenic bacteria. Accepted December 2013. Springer plus.

19. Muthamia Z. K., **Nyende A. B.**, Mamati E. G., Ferguson M. E. and Wasilwa J. 2013. Determination of ploidy among Yam (*Dioscorea* spp.) landraces in Kenya by flow cytometry. Vol 13. (3): 394-402.

#### **Proceeding papers (2011 to date)**

1. J.K. Mwangi, M. Hunja, E.M. Ateka and **A.B Nyende**. Agronomic diversity among rice lines in a germplasm collection from Kenya. Proceedings. 2012. The 7<sup>th</sup> Jomo kenyatta scientific, technological and industrial conference.” Scientific and technological solutions for sustainable industrialization and socio-economic growth. Pp720-733.

2. M.E.M. Toili, F. Rimberia, **Nyende A.B.**, V. Mutwiwa, J. Kaluli and D. Sila. Assessing and morphological diversity of mango germplasm from the upper athi river region of eastern Kenya. Proceedings. 2012. The 7<sup>th</sup> Jomo kenyatta scientific, technological and industrial conference.” Scientific and technological solutions for sustainable industrialization and socio-economic growth. Pp596-613.

### **Other publications (non-refereed)**

1. Nyende, A.B. 1995. Investments in Horticulture: Soil tests, fertilizer use in fresh produce. December/January 1995-Farming News. Nairobi, Kenya.
2. Nyende, A.B., S. Schittenhelm, G. Mix-Wagner, J. -M Greef. Jahresbericht. 2001, 2002, 2003: Possible utility of synthetic seeds in tropical Africa. Bundesforshunganstalt für Landwirtschaft. Braunschweig, Germany.
3. Waruturu, C., Gichuki, S., **Nyende, A.B.**, Ogoyi, D., Macharia, H., Otadoh, J., Nyachae, O., Ochanda, J., Sese, L., Olembo, N., agundu, A., Otunge, D., Wafula, D., Shibalira, R., Karembu, M., Nguthi, F. 2007. Modern biotechnology and the environment. In Fact Sheets on Modern Biotechnology and Biosafety. Message maps. ISAAA-AfriCentre.c/o CIP, ILRI. Nairobi Kenya.

### **Poster presentations (2000 to date)**

1. Plant regeneration from synthetic seeds of potato. 15th Triennial conference of the European Association for potato research. July 14-19, **2002**. Hamburg, Germany.
2. Synthetische Kartoffelsamen - Eine Alternative zur Knolle?. 45. Jahrestagung. Mitteilungen der Gesellschaft für Pflanzenbauwissenschaften. Vom 26. Bis 28. September, **2002**. Berlin Germany.
3. Low cost tissue culture media for micropropagation of potato (*Solanum tuberosum* L.). CGIAR annual external review of the International Potato Centre (CIP) and partners research programs. CIP-SSA offices, ILRI campus. May 14, **2007**. Nairobi, Kenya.
4. Using stems instead of tubers in detection of latent infection by *Ralstonia solanacearum* in seed potato. CGIAR annual external review of the International Potato Centre (CIP) and partners research programs. CIP-SSA offices, ILRI campus. May 14, **2007**. Nairobi, Kenya.
5. Kuria Kimemia, **Nyende A.B.**, Paul Demo and Kahangi Esther Murungi. 2008. Micropropagation of Potato (*Solanum tuberosum* L.) in a modified low cost tissue culture medium. (Submitted July, 2008) for the Jomo Kenyatta scientific, technological and industrial conference. Book of Abstracts. 2008 Jomo Kenyatta scientific, technological and industrial conference." Scientific and technological solutions for sustainable industrialization and socio-economic growth. Pp118.
6. Wambua JM., **Nyende A.B.**, Makobe MN., Mugai E.N. Hydroponic screening of sorghum for salinity tolerance. December 2008. Book of Abstracts, 8<sup>th</sup> workshop on sustainable hor-

ticulture production in the tropics. "Value chain of fruits for local, market, export and processing. Pp 40.

7. Agili, S., **Nyende A.B.**, Ngamau K., Masinde P.W, Kapinga R. In vitro screening of sweet potato genotypes for drought resistance using polyethylene glycol. December 2008. Book of Abstracts, 8<sup>th</sup> workshop on sustainable horticulture production in the tropics. "Value chain of fruits for local, market, export and processing. Pp 41.
8. Mwirigi P.N., Kahangi E.M., Mamati E.G., **Nyende A.B.** Occurrence of Yam landraces in selected Yam growing regions of Kenya. Book of Abstracts, December 2008. 8<sup>th</sup> workshop on sustainable horticulture production in the tropics. "Value chain of fruits for local, market, export and processing. Pp 43.
9. Nyende A.B. Principle component analysis (PCA) of the Kenyan yam (*Dioscorea* spp). 2010. International conference on agro-biotechnology, biosafety and seed systems in developing countries. 8-1 march 2010. Kampala, Uganda.
10. Grace Mungai, E.M. Ateka, A.B. Nyende and D. Miano. (2010). Development of an Invtro protocol for elimination of banana streak virus (BSV) in banana. 10<sup>th</sup> workshop on sustainable horticultural production in the tropics of the Horticultural association of Kenya (HAK). (pg 42 in book of abstracts) Value chains of ornamental for local and export markets. 8<sup>th</sup> to 11<sup>th</sup> December 2010. AICAD-JKUAT. Nairobi-Kenya

### **Conferences and workshops**

1. Erneuerbare Energietechnologien für eine nachhaltige Entwicklung im Ländlichen Raum. 16. Juni 2001. Dedelstorf, Germany.
2. 44. Jahrestagung . Mitteilungen der Gesellschaft für Pflanzenbauwissenschaften. Vom 27. Bis 29. September, 2001. Bonn, Germany.
3. Workshop. Anbauverfahren mit N-Injektion (CULTAN). Ergebnisse, Erfahrungen, Perspektiven. 29 bis 30. November 2001. Braunschweig, Germany.
4. Workshop. DAAD sponsored on Research Management, Data Acquisition, Analysis, Interpretation and Dissemination. JKUAT. 25th- 26th March, 2004, Nairobi, Kenya.
5. Symposium. World intellectual property day. Symposium and Exhibition at the Kenya Industrial Property Institute (KIPI), 26th April 2004, Nairobi, Kenya.
6. Workshop. Tissue Culture Banana Stakeholders Workshop, 22nd - 23 rd June 2004, KARI-Macadamia, Thika, Kenya.
7. Workshop on Biotechnology research, policy, and product development in East and Central Africa. 7-8<sup>th</sup> April 2005. Jacaranda hotel-Nairobi, Kenya.

8. World intellectual property day celebrations. Nairobi. April 26, 2006.
9. TNA workshop. Presentation of findings for the MKEPP/KENYA GOVT. /IFFAD project. July 4, 2006. Embu-Kenya.
10. National stakeholder's workshop on the global plan of action in plant genetic resources for food and agriculture. October 13-14, 2006. KARI headquarters, Nairobi-Kenya.
11. WTO-TRIPS agreement policy round table discussions. October 26, 2006. Norfolk hotel. Nairobi-Kenya.
12. JKUAT scientific technological and industrialisation conference. October 27, 2006. JKUAT, Nairobi-Kenya.
13. FAO-JKUAT institutional workshop on agrobiodiversity conservation. November 10, 2006. JKUAT. Nairobi-Kenya.
14. Stakeholders workshop on agricultural training and education in Kenya. November 30, 2006. School of monetary studies. Nairobi-Kenya.
15. National ABS workshop for Kenya: ABS capacity development initiative for Africa. Access and Benefit sharing. 12 to 13<sup>th</sup> February, 2009. ICIPE (African insect sciences for food and health). Duduville Nairobi-Kenya.
16. Status, impact and future prospects of Biotech crops. 13<sup>th</sup> February 2009. University of Nairobi. Kenya.
17. Biotechnology stakeholders meeting-Panafric hotel. Nairobi. 18<sup>th</sup> February 2009.
18. Kenya Society of Microbiology-Biotechnology workshop. 21<sup>st</sup> March 2009. Networking as an avenue for improving research and training in microbiology and biotechnology in the region. Chiromo campus, University of Nairobi. Nairobi.
19. Scientific Conference -Faculty of Science Jomo kenyatta University of Agriculture and Technology. 5-6<sup>th</sup> May 2009.
20. Intellectual property workshop for researchers in R & D institutions. 24<sup>th</sup> to 27<sup>th</sup> February 2010. Lukenya Gateway hotel. Machakos, Kenya.
21. Stakeholders forum on emerging crops policy. Ministry of Agriculture. 9<sup>th</sup> June 2010. KARI, Nairobi.
22. Bioprospecting experts workshop, Voi safari lodge, Tsavo Park. 20-25<sup>th</sup> June 2010. Kenya.
23. Preparatory workshop for African delegates to the COP-MOP5-Nagoya, Japan (cartagena protocol: Article 27 on the liability and redress (L&R) on biotechnology. Safari Park hotel, Nairobi. 25-27<sup>th</sup> August 2010.

24. Formulation of bioprospecting strategy framework for protected areas and adjacent lands. 27<sup>th</sup> February to 3<sup>rd</sup> March 2011, White sands hotel, Mombasa. Kenya.
25. Kenya national workshop on RABESA/COMESA regional biosafety policies and guidelines. 14<sup>th</sup> March, 2011. Panafric hotel, Nairobi. Kenya.
26. International conference on Agricultural Biotechnology in Africa: Fostering innovation. May 13-14<sup>th</sup> 2011. Addis Ababa. Ethiopia.
27. Stakeholders forum to discuss the national IP policy for Kenya at Kephis headquarters, Nairobi. September 24-25<sup>th</sup> 2012.
28. 2012 China-Kenya Forum on the collaboration in Dry land Agriculture. Focus on ridge and furrow mulching farm techniques. August 28<sup>th</sup> to September 1. 2012. Lanzhou, China
28. Open data incubator project-outreach to research community sensitization workshop on open data. 30-31<sup>st</sup> October 2012 at ICIPE Duduville, Kasarani Nairobi.

#### **Resource person/trainer at workshops**

1. EU/CRF/JKUAT TRAINING, NAIROBI-KENYA. Basic tissue culture techniques 5<sup>th</sup> to 9<sup>th</sup> MAY, 2008: Encapsulation of somatic embryos and synthetic seeds.
2. SENIOR RESEARCH SCIENTISTS AND TECHNICIANS FROM BURUNDI TRAINING IN PASSION FRIUT. JKUAT-NAIROBI-KENYA. June 2008. Biotechnology of fruit crops.
3. CAPACITY BUILDING FOR IMPROVED PRODUCTION OF CLEAN BANANA PLANTLETS THROUGH USE OF MICRO-PROPAGATION. April 12-16, 2010 at the KARI-Thika. Organised by the African Agricultural Technology Foundation (AATF).

#### **Membership**

1. Plant breeders Association of Kenya-Committee member
2. DAAD-Alumni, Kenyan Scholars-member
3. African Biotechnology Stakeholders Forum (ABSF)-member
4. Kenya DAAD scholars Association (KDSA)-JKUAT chapter- Committee member.

#### **Agricultural advisory activities (1994 –1999)**

Inlab enterprises: Instrumental in setting up soil analytical laboratory services for commercial flower farmers. Involved in recommendation of appropriate fertilizer and micronutrient foliar spray applications.

Inagrosa International: Responsible for promoting plant biostimulants and organic fertilizers into the Kenyan horticultural market.

Appraised and offered advice to several commercial flower-growing projects. Some of these projects included:

Karen Roses, Kakuzi ltd, Simbi roses, Sophia Roses, Gatoka ltd, Shalimar flowers, Penta flowers, Mt. Kenya roses, Beckya flowers, Finlay flowers, and A Touch of Velvet: Disease control, soil fertigation and analysis programme.

Shalimar flowers: Nematode control program and drainage water management.

Chamomile project in Naivasha and South Kinangop: Soil fertility analysis and fertilization program.

Red Hill flowers (Kiambu): Rehabilitation after an acute aphid infestation.

### **Current Activities (2005-2007)**

#### **Consultancy**

Consultant with ABSF. Involved in updating ABSF with current research in Biotechnology with respect to Agriculture and advisory on ongoing debate over benefits of GM crops and the biosafety bill. Also involved in writing proposals.

Consultant with Hyde Park Communications: Training needs assessment (TNA) survey for the Mt. Kenya east pilot project (MKEPP) for natural resources use sponsored by Kenyan government and IFFAD (international fund for agricultural development).

Consultant: Setting up an organic production farm at Isinya. Sponsored by the FARAJA-rust charitable organisation.

#### **Associate**

Programme Associate with ISAAA (International Services for the Acquisition of Agri-biotech Applications). Involved in formulation of research proposals with the central theme “biotechnology transfer in Agriculture”. Also involved in preparation for workshops organised by ISAAA.

#### **Lecturing and research**

Lecturer at Jomo Kenyatta University of Agriculture and Technology, in the botany and horticulture departments (both undergraduate and post graduate) in the field of plant breeding, biotechnology, molecular biology and genetics. and agronomy.

Main research interest is to develop *in-vitro* propagation protocols, clean healthy vegetative/synthetic seeds, and cryo-storage techniques of root crops and important native crops of Africa. Also involved in the genetic characterisation of sweet potato cultivars and macadamia fruits.

### **Student supervision and External examination**

Currently supervising six students at MSc. and three at PhD. levels from **JKUAT (see appendix on student supervision)**. All the students involved in potato research in collaboration with the International potato centre (CIP) and KARI.

Both internal and external supervisor for thesis examination at JKUAT and the University of Nairobi (UoN).

### **Paper and research proposal reviews**

Have reviewed article papers for the JAGST, AJB,AJHS, and the EJA.

Have also reviewed research proposals for the RPE-JKUAT.

### **Office-departmental responsibilities at JKUAT**

1. Coordinator of research projects (including post graduates) in the department
2. Represented the Chairman and Dean of Agriculture in various meetings
3. Member of the departmental research committee
4. Class advisor to post graduate students.

### **Equipment donations to JKUAT**

I have donated laboratory equipment, importantly a laminar flow hood (worth 1 million Kenya shillings) to the Horticulture department at JKUAT. This will aid in biotechnology-tissue culture research and student practical teaching.

### **Training (2005-2008)**

1. Attended an international course Agrobiodiversity, genetic resources, biotechnology, plant breeding and molecular marker assisted technology at the international Agricultural centre at the Wageningen University in the Netherlands (21<sup>st</sup> May to 2<sup>nd</sup> July **2005**).
2. Attended a FAO-AGROBIODIVERSITY institutional workshop in Naivasha (28<sup>th</sup> January to 2<sup>nd</sup> February, **2007**).
3. Intellectual Property (IP) training for Eastern Africa. 11<sup>th</sup> to 29<sup>th</sup> July **2007**. ICIPE, Dudsonville campus. Nairobi.
4. Finance for non-finance managers. Budgeting and Procurement Planning. The Kenya Institute of Management (KIM) course on procurement and budget planning. 28<sup>th</sup> to 29<sup>th</sup> July, **2008**. Nakuru-Kenya.
5. Concept process and evaluation of performance contracting by Corplan consultant's ltd. 10<sup>th</sup> – 11<sup>th</sup> December **2008**. At AICAD headquarters Juja, Nairobi Kenya.



## Book editions

1. **Dr. Bernard A. Nyende**, Prof. Norah Olembo, and Mr. Daniel Otunge. 2005 (Eds.) Workshop proceedings. Training workshops on biotechnology research. ABSF. Agricultural information centre, Waiyaki way, Nairobi.
2. Karembu Margaret, Otunge D., Muchiri N., **Nyende A.B (Eds.)**. 2008. Experiences in strengthening inter-institutional networking. Ramco printing works. Nairobi. **ISBN 9966-775-04-8**.
3. Olembo Norah, Mboyi Felix Mboyi, **Nyende Aggrey Bernard**, Oyugi, Kennedy and Ambani Leah. (2011): Status of crop biotechnology in sub-sahara Africa: a cross-country analysis. © Published by the African Biotechnology Stakeholders Forum (ABSF), Nairobi, Kenya.
4. McEnrue Mary Pat and **Nyende Aggrey Bernard** (2013): Opportunities and Resources for Agbiotechnology Research and Innovation: What Lies Ahead for Aspiring and Young Scientists in Kenya? Report of a Preliminary Study. On line; [cbe.calstatela.edu/mgmt/pdfs/ProjectDescription.pdf](http://cbe.calstatela.edu/mgmt/pdfs/ProjectDescription.pdf)

## Patents

1. KE/P/07/00593: Sole inventor: International filing number C0&D417/12: Synthetic seed technique for encapsulation in calcium alginate hollow beads (7 claims). Applied in 2007-05-15. Formative examination met. Patent awarded.
2. KE/P/2008/00783: Joint inventors (Dr. Onguso, Dr. Nyende, Ms. Mweu, and Ms. Njambi): Regeneration protocol for Aloe.

## Annex of student supervision

<b>Students (MSc)</b>	<b>Level</b>	<b>Title</b>	<b>Status</b>
1. Paul Kuria	M.Sc.	Investigation into low cost tissue culture media for micropropagation of potato	<b>Graduated</b>
2. John Mwangi	M.Sc.	Improving seed potato quality and production using positive selection and Elisa techniques in Kenya	<b>Graduated</b>
3. James Nonoh	M.Sc.	Isolation and molecular characterisation of soil actinobacteria producing secondary metabolites with antifungal potential against <i>fusarium spp.</i> and <i>colletotrichium coffeanum</i> .	<b>Graduated</b>
4. Antony Nyaga	M.Sc.	Selection for yield and high oil content in macadamia hybrids using conventional and molecular breeding tools	Absconded
5. Moses Wamalwa	M.Sc.	Evaluation and screening for drought resistant orange	Absconded

		flesh sweet potato ( <i>Ipomoea batatas</i> ) hybrid clones	
6. Hannah W. Karuri	M.Sc.	Characterization of Kenyan sweet potato germplasm for SPVD resistance and high dry matter content	<b>Graduated</b>
7. Peter Mwirigi	M.Sc.	Collection, morphological characterisation and invitro propagation and of Kenyan yams.	<b>Graduated</b>
8. Pauline Mundia	M.Sc	On-farm selection of the effect of positive selection on the yield of potato under conditions of high disease pressure	<b>Graduated</b>
9. Judy Mwende	M.Sc.	Screening and genetic analysis of somaclonal variants and mutants of sorghum for drought and salinity tolerance	<b>Graduated</b>
10. Osborne Tsoka	M.Sc.	Evaluation of seed potato tuber production under aeroponics in Malawi	<b>Graduated</b>
11. Bii Felix	M.Sc.	Characterization of Fusarium species on maize and determination of their mycotoxins in Eastern province of Kenya	<b>Graduated</b>
12. George Asudi	M.Sc.	Collection and characterization of papaya germplasm in Kenya	<b>Graduated</b>
13. James Mbora	M.Sc.	Surveillance of rickettsia infection in domestic animals presented at slaughter houses in Kenya	<b>Graduated</b>
14. William Nyakundi	M.Sc.	Diversity of white rot fungi from selected horticultural farms and their potential in biodegradation of pesticides	<b>Graduated</b>
15. Juliah Khayeli	M.Sc	Isolation and characterization of antibiotic and exoenzymes producing actinobacteria from guts of fungus-cultivating termites <i>macrotermes michaelsoni</i>	<b>Graduated</b>
16. Johnstone Nendo	M.Sc.	Micropropagation of <i>allanblackia stuhlmanni</i>	<b>Graduated</b>
17. Grace Mungai	M.Sc.	Development of an in vitro protocol for the elimination of viruses from banana	<b>Graduated</b>
18. James Njeru	M.Sc.	The impact of liming on biodiversity in Embu tea zones landscapes	<b>Graduated</b>
19. Pauline Okemo	M.Sc	Agrobacterium mediated transformation of pigeonpea with cry 1a gene for pod borer	To defend
20. Paul Telengech	M.Sc	Analysis of molecular and morphological characterization of cassava transformed with B-carotene genes	writing
21. Maureen Mwangangi	M.Sc	Elimination of cassava brown streak virus from infected cassava	writing
22. Phillip Miriti	M.Sc	Isolation and characterisation of aerobic soil bacteria degrading capability of selected organic pesticides applied in horticultural farms in Kenya	<b>Graduated</b>

<b>Students (PhD)</b>	<b>Level</b>	<b>Title</b>	<b>Status</b>
1. Lucy Kananu	Ph.D.	Biological performance, response and population dynamics of <i>Tetranychus evansi</i> Baker and Pritchard, as influenced by different African nightshade ( <i>Solanum</i> spp.) species	<b>Graduated (July 2010) JKUAT</b>
2. Sammy Agili	Ph.D.	Yield evaluation, selection and drought tolerant indices of Orange-Fleshed Sweet potato ( <i>Ipomoea batatas</i> Lam) under water stress	<b>Graduated (November 2012) JKUAT</b>
3. Zachary Muthamia	Ph.D.	Distribution, diversity and conservation of yam species in Kenya	Writing
4. John Kimani Munji	Ph.D.	Genetic studies of quantitative and quality traits in rice under low and high nitrogen and phosphorous conditions and a survey of farmer's preference for varieties.	<b>Graduated (April 2011) Kwazulu Natal</b>
5. Cecilia Mweu	Ph.D.	Somatic embryogenesis, molecular characterisation, and genetic transformability of <i>Jatropha Curcas</i>	<b>Graduated (November 2012) JKUAT</b>
6. Bernard Muchiri Gichimu	Ph.D.	Selection of quality and resistance to coffee Berry Disease in the coffee Arabica L. Composite cultivar, Ruiru 11.	<b>Graduated (November 2013) JKUAT</b>
7. Titus Kathurima Mureithi	PhD	Molecular resolution of genetic variability of diagnostic kit for cassava and sweet potato viruses	2 <sup>nd</sup> year
8. John Kamau Mwangi	PhD.	Diversity of rice blast pathogen population their interaction of rice blast pathogen for resistance in Kenya	3 <sup>rd</sup> year
9. Tesafamichael Abraha	PhD	Genetic diversity analysis and morphological evaluation of Eritrean sorghum landraces for drought tolerance	2 <sup>nd</sup> year
10. Lilian Onyango Ochieng	PhD	Selection of sweet potato lines having resistance to weevils ( <i>Cyrtosuchus fomicarius</i> )	2 <sup>nd</sup> year

### **Projects at the JKUAT**

1. Co-investigator in: Commercial and industrial development of papaya varietal improvement, production and processing technologies (2007-2010).
2. Co-investigator in: Calibration of lime requirement tests for acid soils of Kenya through maize yields and development of quick liming kit (2007-2010).
3. Value addition of Aloe Vera. (2009): 1.5million from Industry (East African Venter)

### **Referees:**

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