

CURRICULUM VITAE



NAME	BEATRICE ANYANGO
CURRENT POSITION	DEAN ,SCHOOL OF BIOLOGICAL AND PHYSICAL SCIENCES
UNIVERSITY ACADEMIC POSITION	ASSOCIATE PROFESSOR
INSTITUTION	JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE ANDTECHNOLOGY
PHYSICAL ADDRESS	BONDO TOWN, KISUMU- USENGE ROAD

PERSONAL DATA

DATE OF BIRTH	24 TH AUGUST 1955
PLACE OF BIRTH	SIAYA
NATIONALITY	KENYAN
PROFESSION	UNIVERSITY PROFESSOR
CONTACT ADDRESS	P.O.BOX 2996-40100, KISUMU

1. SUMMARY OF EXPERIENCE

I am a trained teacher and a holder PhD in Soil Microbiology, Microbial Ecology of root- nodule bacteria and other soil microorganisms. I have been involved in biological nitrogen fixation (BNF) research for the last 21 years working with both food and tree legumes in agriculture and agro forestry. Specifically, I have done genetic characterization of root nodule bacteria that nodulate common beans, *Phaseolus vulgaris* from various Kenyan soil types. Together with collaborator from Kenya Forestry Research Institute, we developed programs for proposal writing training courses for researchers in agriculture and forestry. Besides this, I have trained young scientists on biotechnology to create a critical mass in the country. Personally, i have undergone extensive training in bio-safety and environmental risk assessment of genetically modified organisms. I'm part of the regional bio-safety experts and I coordinated bio-safety activities in the School of Biological Sciences, University of Nairobi. Currently I'm the dean of the School of Biological and Physical Sciences, JOOUST. Recently I had the opportunity of participating in a leaders training program to become a Champion for Change in Food Security in Africa.

Personally, I'm a change agent and I endeavour to remain relevant to the issues affecting Kenya and other African countries.

2. EDUCATION

<i>Year (from – to)</i>	<i>Degree, Institution</i>
Ph.D 1989-1992	Soil Microbiology - Wye College, University of London, UK
MSc. 1980-1982	Botany (Microbiology) - University of Nairobi, Kenya
BSc. 1977 - 1980	Botany and Zoology - University of Nairobi, Kenya
S1. 1974-1977	Science Teacher Training at Kenya Science Teachers College

3. EMPLOYMENT

<i>Years since</i>	<i>Company / Institution</i>
3	JaramogiOginga Odinga University of Science and Technology
24	University of Nairobi

4. POSITIONS PREVIOUSLY HELD

<i>Year (from – to)</i>	<i>Position, Project / Programme, Company / Institution / Client Description of roles and responsibilities</i>
2010-Current	Associate Professor and Dean of the School of Biological and Physical Sciences
1997-2010	Senior Lecturer
1992-1997	Lecturer
1989-1992	Assistant Lecturer
1986-1989	Tutorial Fellow

5. TEACHING RESPONSIBILITY

<i>School/Institute</i>	<i>Class/Discipline</i>
SBPS	Fundamentals of Ecology
	Cell Biology
	Microbiology
	Mycology

6. EXTERNAL APPOINTMENTS/AWARDS	
<i>Year</i>	<i>Appointment as/Institution/Project</i>
2010	External Examiner, Kenyatta University
2012	External Examiner, Cape Peninsula University of Technology
2013	External Examiner, Eldoret University
2013	External Examiner, University of Botswana
2013	Taskforce on Establishment of Universities

7. OTHER LEADERSHIP POSITIONS	
<i>Year</i>	<i>Position/Programme/Institution</i>
1986-2010	Coordinator Biotechnology Programmes, School of Biological Sciences, University of Nairobi
2010- Current	Dean, School of Biological and Physical Science, Jaramogi Oginga Odinga University of Science and Technology(JOOUST)
	Patron, Christian Union, JOOUST

8. RESEARCH ACTIVITIES/PROJECTS(Past and Present)	
<i>Years/Duration</i>	<i>Position /Title / Sponsor</i>
4	UNEP-GEF Project on the Implementation of Cartagena Protocol on Bio-safety, \$ 100,000 (2002-2006) collaborator was the National Council for Science and Technology, Kenya Government.
3	GMO Guidelines Project, Funded by the Swiss government (2002-2005), no direct funding received, collaborators were ICIPE, Kenya Agricultural Research Institute, Swiss Technical Institute in Zurich.
4	Assessment of Ecological Impacts of Introducing Genetically engineered Crops in Kenya, funded by US-AID, \$400,000 (2001-2005); Collaborator was the International Centre for Insect Physiology and Ecology (ICIPE), Nairobi.
3	Characterization and Microbial Analysis of <i>Senna didymobotria</i> , funded by National Council for Science and Technology, KSh.2.5Million (2011), collaborators, Members of Bondo University college, Maseno University and KARI.
13	Regional Training Program on Molecular Biology and Biotechnology, (1996-2007). Collaborator were Department of Biochemistry, University of Nairobi Department of Botany,

	Moi University, Department of Biochemistry and Biosciences, University of Sussex, UK and Department of Biosciences, University of Hertfordshire, UK.
1	Adoption of Bio-fertilizers for Soybean production in Kenya. Toyota Foundation, 3Million Yens (1998-1999)
2	Nursery studies on nitrogen fixation of <i>Dalbergia melanoxylon</i> funded by the International Foundation for Sciences, Sweden, \$12,000 (1994-1995).
2	Genetics analysis of <i>Phaseolus</i> bean rhizobia from some Kenyan soils. Funded by Third World Academy of Sciences, Italy, \$ 10,000 (1994-1995)

10. OUTREACH ACTIVITIES

Year from - to	Specific description of Activity
2009-Current	Working with farmers in Siaya county in the following areas Simenya, Ugenya Constituency-Tissue culture banana Malanga, Gem constituency-Tissue culture bananas, improved sweet potatoes, pigeon pea, Jatropha (biofuel) and soil fertility Wagai, Gem Constituency- Tissue culture bananas and soil fertility Karemo, Alego Constituency- Bananas and onions Agwara, Sakwa Constituency- groundnuts and soil fertility

11. LINKAGES AND COLLABORATIONS

Year from – to	Description of links/collaborations
2010-Current	Staff and student exchange, Faculty of Applied Sciences, Cape Peninsula University of Technology, South Africa
2011-Current	Outreach and joint research on herbal plant, BAMA CBO, Bondo
2012-Current	Staff and student exchange, Faculty of Applied Sciences, University of Western Cape, South Africa

12. TRAININGS /WORKSHOPS/SYMPOSIA ATTENDED

2004	International Organization for Biological Control working group: Transgenic organisms in IPM and Biological Control. Hochi Minh City, Vietnam, 31 st March - 6 th April, 2004.
2008	African Forum on Climate Change, Kigali, Ruanda 9-11 September

	2008.
2009	Resource person on the Workshop on Communication in Biotechnology for Educators. UNESCO/UON/ISAAA 2nd to 5 th November, 2009, Nairobi, Kenya.
2011	Food Security workshop jointly organised by BUC and CPUT, 20-23 Feb.

13. MEMBERSHIP TO COMMITTEES/BOARDS

	Member of the Editorial Board, Journal of Tropical Microbiology and Biotechnology
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14. MEMBERSHIP TO PROFESSIONAL ASSOCIATIONS /BODIES

	Member, African Association of Biological Nitrogen Fixation (AABNF)
	Member, African Women in Science and Engineering (AWSE)
	Member, Kenya DAAD Students Association (KDSA)
	Kenya Society of Microbiology (KSM)
	Member, Network of African Champions for Change in Food Security

15. LANGUAGE PROFICIENCY

Luo	<i>Good</i>
Kiswahili	Fair
English	Good

16. CONFERENCES ATTENDED

2008	13 th Conference of African Association of Biological Nitrogen Fixation (AABNF) 8 th to 11 th December, 2008, Hammamet, Tunis, Tunisia.
2012	Joint Conference on Science and Technology for Development in Africa , Cape Town 26-28, June
	UNESCO-DAAD Alumni Conference "Water in Africa" jointly organized by UNESCO, Maseno University and Bondo University College, 1-3 , October
2013	Conference on Trends and Opportunities in the Production, Processing and

17. ABSTRACTS FOR CONFERENCES

Application of Biotechnology in Agriculture: a risk assessment study on the impacts of *Bacillus thuringiensis* (Bt) Cry1Ab Toxins on nodulation of the common bean, *Phaseolus vulgaris*. L

ABSTRACT

This study was carried out to assess the possible effect of *Bacillus thuringiensis* (Bt) δ -endotoxin [Cry1Ab] on rhizobium nodulation on the common bean (*Phaseolus vulgaris*). Germinated bean seeds (var. wairimu) were planted in two soil types (red collected from kabete and black cotton from mwea, containing increasing concentrations of *B. thuringiensis* (bt) toxin and inoculated with rhizobium culture. The toxin was obtained from cultures of *Escherichia coli* containing the Bt toxin crystal. Sampling was carried out at 2, 4, 8 - week intervals. Results were collected for- the total root length, root and fresh shoot (leaf) weights, nodule count, color and size. Observations so far indicate low levels of nodule establishment in the red soil and higher levels within the higher concentrations of bt toxin for the black soil.

AABNF CONFERENCE, TUNIS, TUNISIA, DEC, 2008

Challenges of Common Bean Production in a World of Changing Climates

Beatrice Anyango and George Ouma, Jaramogi Oginga Odinga University of Science and Technology, P. O.Box 210-40601, Bondo.
e-mail:banyango@bondo-uni.ac.ke

ABSTRACT

Legumes form an important part of the diets of people in developing countries. Specifically common beans, *Phaseolus vulgaris* has been referred to as the poor mans meat in countries like Kenya. There are other important legumes for example, groundnuts, and cowpea, pigeon pea and green grams. The production of legumes in the tropics depends heavily on rainfall and this has negatively impacted the availability and market prices. This paper reports on case studies in Lake Victoria basin since 2012. The study involved two farming villages each in the two study sites which were medium potential with high rainfall and a semi arid area which embraces the two planting seasons. Heavy rains in April-May 2012 improved production in three villages (200kg/h). One of the villages from the high rainfall areas lost most of their crop due to heavy rains during flowering time. Production in the short rainy season was low (20 kg/) while the semi arid zone lost their entire

	<p>crop to erratic rainfall and prolonged drought. Long rains (March-May) of 2013 have spoilt most of the crop, according to our records. Bean prices in Kenya hardly drop below \$ 1.18, a figure the rural communities cannot afford; May 2013 price is at \$1.8, the price of half a kilogram of meat. Here we present mitigation and adaptation options to farmers in this region which can sustain family livelihoods.</p> <p>Conference on Trends and Opportunities in the Production, Processing and Consumption of Staple Food Crops in Kenya, 25-26 April, 2013</p>
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24. PUBLICATIONS

1. Bancy N. Muruga and Beatrice Anyango (2013) .A Survey of Extremophilic Bacteria in Lake Magadi. Columbia International Publishing: American Journal of Molecular and Cellular Biology (2013) 1: 14-26
2. AD Njoroge, B Anyango, SF Dossaji (2012) Screening of *Phyllanthus* Species for Antimicrobial properties. Chemical Sciences Journal, Vol.2012: CSJ-56
3. Amugune N.O., Anyango B and Mukiyama T.K.(2011) Agrobacterium-Mediated Transformation of Common Bean. African Crop Science Journal Vol.19 , No. pp.137-147
4. Wepukhulu, M, N, Kimenju J, Anyango B, Wachira P and Kyallo G (2011) Effect of Soil fertility Management Practices and *Bacillus subtilis* on Plant Parasitic Nematodes associated with Common Beans *Phaseolus Vulgaris* .Tropical and Subtropical Agroecosystems.139(2011):27-34
5. Lelman E.K., Osir E.O, Jefwa J., Anyango B.and Boga H.I .(2007) .Preliminary Investigations reveal that *Bacillus thuringiensis* delta –endotoxinCry1A(c) incorporated in soil does not affect *arbuscular mycorrhiza* in *Sorghum bicolor* (L) (Moench) .Journal of tropical Microbiology and Biotechnology Vol.3(1); pp.12-18.
- 6 Maina S.M, Gudu S., .Onkware A.O and Anyango B. (2006). Response of Common bean (*Phaseolus vulgaris* L.) cultivars to *rhizobium* inoculation and phosphorus fertilizer application in acid soils. Journal Of East African Natural Resource Management: Vol. (1)
Pp. 98-110.
7. Anyango B., Keya S.O. and Owino, F. (2005.) Occurrence of Nodulation in Leguminous Trees in Kenya. Journal of Tropical Microbiology and Biotechnology. Vol.4 (1) pp.22-26.

8. Anyango B., Wilson K. J. and Giller K. (1998). Competition in Kenyan soils between *Rhizobium leguminosarum* biovar *phaseoli* strain Kim5 and *R. tropici* strain CIAT 899 using *gus* marker gene. *Plant and Soil* **204**: 69-78.

Contributions to Book Chapters

9. Toan Van P., Binh Hoang Ngong, B.H., Anyango B., Zwahlen C., Manachini B., Andow D.A. and Wheatley, R. (2008) Potential Effects of Transgenic Cotton on Soil Ecosystem Processes in Vietnam : In ; Environmental Risk Assessment of Genetically Modified Organisms Vol.4.Eds.David E.Andow, Angelika Hilbeck and Nguyen Van Tuat. CABI Publishing, Wallingford, UK.

10. Mendonca Hagler L.C., de Melo I.S., Valadres-Inglis M.C., Anyango B., Siqueira J.O., Pham Van Toan and Wheatley R.A. (2005). Non-Target and Biodiversity Impacts in Soil. Methodologies for Assessing Bt. Cotton in Brazil, pp. 225-260. In. Hilbeck A., Andow D.A. and Fontes E.M.G (eds.). Environmental Risk Assessment of Genetically Modified Organisms. Vol. 2. Methodologies for Assessing Bt. Cotton in Brazil, CABI Publishing, Wallingford, UK.

11. Birch A.N.E., Wheatley R., Anyango B., Arpaia S., Capalbo D., Getu E. Degaga, Fontes E., Kalama P., Lelmen E., Lovei G., Melo I. S., Munyekho F., Ngi-Song A., Ochieno D., Ogwang J., Pitelli R., Shuler T., Setamou M., Sithanantham S., Smith J., Van Son N., Songa J., Sujii E., Tan T.Q., Wan F. H. and Hilbeck A. (2004). Biodiversity and Non-target Impacts: a Case Study of Bt Maize in Kenya, pp. 117-186. In. Hilbeck, A. and Andow, D. A (eds.) Environmental Risk Assessment of Genetically Modified Organisms. Vol. 1. A Case Study of *Bt* Maize in Kenya. CABI Publishing, Wallingford, UK.