

# AAMPS NEWSLETTER

March 2023

**SHEA Issue 11**

## From the Editor

It's March already...Where has the year gone to? It seems we are still scrambling to start and catch up with it. It's been busy already on our end. We had our first **PharmaConnect Africa / AAMPS Connect Conversations** end of February. This is part of the Global Excellence in Ethnopharmacology in Africa. Part of this series of webinars is to drum up support for the **Frontiers in Pharmacology Special Issue** focusing on African ethnopharmacology. Africa's voice in research and product development needs to be heard through academic outputs so let's get those abstracts and papers coming in. **To submit to Global Excellence in Ethnopharmacology: Africa | Frontiers Research Topic (frontiersin.org), click here.**

For this issue, we continue with putting in focus on interesting people working with useful plants in Africa, wherever they

## Highlights

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may be, wherever they come from, they are all Africans, if they are adding value to the continent's resources.

**Dr Gurusamy Manikandan**, who newly arrived on the continent from India to take up a Research Fellowship in South Africa has the mammoth task of writing a monograph on one of the most important and commercially successful resources, the Shea tree (*Vitellaria paradoxa*). We found out that this tree is food, a culinary aid, an ingredient and also super cosmetic. We also meet a real mover and shaker from East Africa, **Dr Beatrice Irungu** who talks about her career in the world of phytochemistry and medicinal plant research. She also tells us a bit about her country and what makes it special from a plant use and traditional medicine perspective.

I love Kenya and I spent my Christmas holidays in Homa Bay County by the shores of Lake Victoria, so hearing a lot more of what is happening in that country was fascinating.



Editor with elders in Kisumu, Kenya

Lastly, we highlight **"The Legends" interview** in YouTube with our co-editor and AAMPS co-founder, Denzil Phillips. Connecting from the West Indies, Denzil talked to me about his expeditions across the world (England, East Africa, Germany, the Caribbeans) and across disciplines; how he lived and farmed sorghum in an African village and how he was introduced to essential oils. He also gives us **the story behind AAMPS** and all the colourful figures who were pioneers of the Association.

I hope that you enjoy this newsletter and please visit our website for back issues.

Warm regards,

A handwritten signature in black ink that reads "David".

# Meet The Monograph Author

## Dr Gurusamy Manikandan

**Q: What Monograph are you working on?**

**A:** *Vitellaria paradoxa* C.F. Gaertn. is commonly known as the Shea tree, which is where shea butter comes from.

**Q: Who did you work with and what was the best thing about working with that person?**

**A:** I am working under the guidance of Prof. David R. Katerere (TUT Research Platform Chair, Pharmaceutical and Biotech Advancement in Africa (PBA2)) at Tshwane University of Technology. He offered me a lifetime golden opportunity to work with him. He encouraged and helped me lot in the pharmaceutical research field. Now, I am following in his footsteps.



**Q: What challenges do you face with the collaboration?**

**A:** Actually, not any challenges but working on African plants is new and exciting for me.



The shea tree doesn't grow anywhere else in the world and yet it is an extremely valuable genetic resource.

**Q: Tell us one fun fact about the species that you chose.**

**A:** The leaves of the shea tree contain saponins. So, the leaves soaked in water turns to a soapy and frothy liquid that is used to bath the heads of fever patients. The shell or husk of the shea nut is used to purify water. This is mainly due to its ability to remove substantial amounts of heavy metal from aqueous solutions. The shell is pounded and made into a paste that is used for plastering traditional mud houses in northern Ghana. So, the shea tree is one plant with a variety of uses!

**Q: Why do you have such interest in this species?**

**A:** All parts of the shea tree are used for medicinal and economic purposes. Medicinally, shea butter is used in topical medicines against rheumatic and joint pains, wounds,

"The Shea tree doesn't grow anywhere else in the world and yet it is an extremely valuable genetic resource."

swellings, dermatitis, bruises, and other skin conditions. It's also used for cooking and if you like chocolate, you may be surprised to know that it can be made from shea butter.

**Q: What uses does it have and have you used it yourself?**

**A:** The shea butter is reported to have a great medicinal value. I am well aware of the medicinal properties of the shea tree but, I have never used it before.

**Q: What kind of research have you done into it?**

**A:** I have not done any research on the species. However, I read the published research literature that is associated with it.

**Q: What are your thoughts on the AfHP?**

**A:** I learnt that the African Herbal Pharmacopoeia is a compilation of different African medicinal plants monographs. It's an important resource with information on geographic distribution, medicinal, and economic uses of various African plants. Simply put, the African Herbal Pharmacopoeia is a "medicinal treasure for Africa." I take pleasure in contributing my knowledge to the African Herbal Pharmacopoeia, especially knowing that my contribution will continue to be relevant in future, too.



**Raw Shea butter**

**Q: In five years' time, what advances do you think this species would have made commercially and in research?**

**A:** The shea tree is considered the second most important oil crop in Africa, after the palm tree. The edible oil (shea butter) is extracted from the shea kernel and is ranked as the most economic product of the species. Shea butter is a useful cocoa butter substitute. Clinical tests with patients suffering from rhinitis and moderate to severe nasal congestion, showed that shea butter may relieve nasal congestion better than conventional nasal drops. Low-quality shea butter, often mixed with other oils, is used as a base for making soaps. In five years, we should be using tissue culture techniques to improve the conservation status of this important species. As a tissue culture expert, I would love to be part of that work.

# Our Scientist Profile

## Dr Beatrice Irungu

Dr. Beatrice Irungu is a Research Scientist at Kenya Medical Research Institute, Centre for Traditional Medicine and Drug Research. She holds a PhD degree in Chemistry from the University of Nairobi, Kenya. Her research activities mainly focus on natural products chemistry, including the isolation and characterization of bioactive compounds from plants with antiplasmodial and cytotoxic activities. Recently, Dr. Irungu and her team have expanded their research to include bioactive compounds from endophytes and filamentous fungi (Basidiomycetes) with antibacterial activity against ESKAPE pathogens. Dr. Irungu also has interest in pharmaceutical analysis/analytical chemistry.

Her work has received support from local and international funding agencies including IFS, TWAS, National Research Fund (Kenya), Internal Research Grant (Government of Kenya), WHO/TDR, ICAP-HICCC (University of Columbia) and Wellcome Trust. Dr. Irungu has published 28 papers in peer-reviewed journals.

We had a chance to talk to Dr. Irungu and here are the excerpts of the interview:



Dr. Irungu in the laboratory

### **At which institutions did you study and in which fields?**

- University Of Nairobi, Kenya, PhD (Chemistry)
- University of Dar es Salaam, Tanzania, Masters of Science (Chemistry)
- University of Nairobi, Kenya, Chemistry (major) and Maths (minor)

### **Can you share a brief overview of what your field of expertise is about?**

I have more than 15 years research experience with expertise in research proposal development, project implementation and dissemination through publications, and presentation in workshops and conferences. I also have experience in reviewing scientific and ethical content of research proposals. I am currently serving as a reviewer in my institutional Review Board (IRB).

I have experience in elucidating structures of different classes of compounds using Mass Spectrometry and 1D, 2D, and 13C Nuclear magnetic resonance. I also have expertise in the analysis of chemicals that are present in different matrices, including pharmaceutical and biological samples.

**In what way can your profession aid in the development of the African herbal pharmacopoeia?**

In my department, we have evaluated and published data on plants that are used for the treatment of malaria in Kenya. I have expertise in phytochemical profiling of crude extracts. I believe that such data and expertise would aid in the development of the African herbal pharmacopoeia.

**What drove you to pursue a career in your profession?**

I was among the best Chemistry students in high school. Therefore choosing chemistry as my career of choice was not difficult.

**What do you enjoy the most about your area of expertise?**

The ability to plan my work and the

fact that it is not a routine kind of a job. Every research project comes with its own challenges.

**What kind of research are you currently doing?**

I have two ongoing studies:

1. Work funded by TWAS: Here, we are looking at endophytes from *Clerodendrum myricoides* as a source of bioactive compounds against ESKAPE pathogens
2. Work funded by ICAP-HICCC, University of Columbia (pilot Grant): The goal of this project is to document hair products use and breast cancer risk among women in Kenya; assessing knowledge, attitudes, and perceptions on hair product use; determination of pH profiles of selected chemical hair relaxers.

**Which successes in your field are you most proud of?**

Supervising two PhD students and having them graduate.

**What changes or developments would you like to see in your field?**

More funding dedicated to discovery/basic sciences.

**What are some of the challenges that you have faced as a black female scientist?**

I have not faced any challenge as a black female scientist. However, there are challenges that I face as a scientist. My two major challenges are limited funding and lack of equipment.

**What opportunities are available to young people who would like to follow the path to your profession?**

Opportunities are plenty especially in emerging areas of Computer Aided Drug Discovery.

**What advice can you offer to young aspiring scientists in the pharmaceutical industry?**

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# Let's Hear From The Legends

## Denzil Phillips

You can safely call Denzil Phillips a London boy because he was born and bred in England. Denzil has played a major role in the natural products industry globally. The main part of Denzil's journey in this industry started in 1975 when he became the Marketing and Research Officer for the Tropical Products Institute, which is part of the UK Ministry of Overseas Development.

Denzil started by focusing on nutrition and was then introduced to medicinal plants and natural products when he joined the International African Institute. Denzil also worked with the German Herbal Industry.

For some reason, Denzil fell in love with Africa. When he was asked in an interview how all this started, Denzil highlighted that his first visit to Africa was mainly triggered by his thesis on "Nutrition and Farm Management," which landed him in Zambia.



From his experience and knowledge, Denzil highlighted that African Health systems need to adopt a more integrated approach to traditional medicine, as is the case with Germany and China. These countries have a regulatory system that makes medicinal plants an integral part of the health care system.

Find out more about Denzil's journey in the natural products industry by watching this interview session with Prof. David Katerere.

[Click Here](#)

### Career highlights

1975 Tropical Products Institute (part of UK Ministry of Overseas Development)

1979 Master's degree in Tropical Agricultural Development

1982 3-year research project into Village Foods Systems in West Africa

1985 Co-founded High Value Horticulture plc

1996 Business Development Director of Plant Sciences International

1998 Founded Denzil Phillips International Ltd

2003 Associate Expert in Natural Products at the EC Centre for Development of Enterprise, Brussels

2008 Co-founded the Association for African Medicinal Plant Standards

2010 Advisor to the Board of the Spa and Wellness Association of Africa

2017 Denzil Phillips International's Caribbean Office

2019 Co-founded Global Frankincense Alliance

# This Month's Country Focus

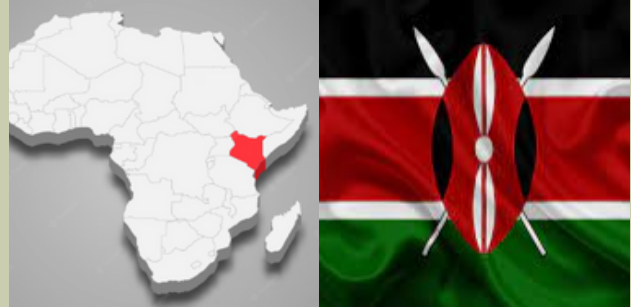
## Kenya

### Population

- 47,564,296

### Healthcare system

- Medical Doctors: 12,792
- Kenya Registered Community Health Nurses: 109,659,
- Pharmacists: 4491
- Traditional healers: 40,000 who practice birth attendance, faith healing, herbalism and bone setting



### Languages

- About 70 different languages, with English and Kiswahili being the official languages.
- Kikuyu and Luo are among the common ethnic languages, and are spoken by 17% and 11% of the population, respectively

### Popular native plants

- Meru Oak (*Vitex Keniensis*)
- Mpaga (*Adenia Globosa*)
- Parasol Tree (*Polyscias Kikuyuensis*)
- Spanish Tamarind (*Vangueria Madagascariensis*)

### Ethnic groups

- 42 (+) tribes

### Interesting facts

- Kenya is named after the country's tallest mountain, **Mt. Kenya**, which is the second-highest in Africa.
- Kenya has the **Big Five**: lions, elephants, buffalos, rhinos, and leopards.
- Kenya is known for its world record of "Olympic quality" **long distance athletes**.
- Kenya hosts the annual **Great Migration**, during which millions of zebras and wildebeest cross the Mara river.
- Based on the evidence that the earliest human ancestors were found in Kenya, the country is thought to be the **birthplace of humans**.

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# Connect Conversations

This month's conversations focused on "Global Excellence in African Ethnopharmacology."

**Dr Hellen Oketch-Rabah, Senior Manager, Dietary Supplements & Herbal Medicines at U.S. Pharmacopeia**

Dr. Oketch-Rabah talked about Frontiers in Pharmacology, with the spotlight on Africa. She greatly emphasised on the fact that African plants are an indispensable source of compounds that aid medicinal efficacy. The development of drugs such as metformin and antimycin from plant origins is good-enough evidence that there is a lot that can be done with green wealth.

**Prof Mamello Sekhoacha, University of the Free State, South Africa**

Prof Sekhoacha discussed on the anti-malarial activity of African mushrooms. Mushrooms have been reported to have antimalarial effects, among other properties. They can also be used to develop more drugs, hopes raised because

Penicillin was discovered from these fungi. There was further emphasis on the need to analyse the toxicity of mushrooms and any other medicinal plants.

**Prof Robert Nash, CEO & Founder, Phytoquest & Sugars For Health, Wales, UK**

Dr. Nash mainly focused on iminosugars in African plants and their benefits to health. Iminosugars are unique plant compounds that exist across families. These compounds have various medicinal attributes, too. Professor Robert Nash and his team have done extensive research on iminosugars. The better part is that African plants do have these important compounds!

**Prof Stanley Mukanganyama, University of Zimbabwe**

The conversation was concluded by discussing the Combretaceae family of plants, as led by Prof Mukanganyama.

## View our Connect Conversations

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