

Current Natural Products Research in the Department of Chemistry

Boniface Mbewe, PhD
(Head of Department)



Department of Chemistry

- The Department of Chemistry is at the main campus on the Great East Road in **Lusaka**
- It is one of the oldest departments in the University of Zambia



Dept of Chemistry, Unza



Department of Chemistry

- The Department of Chemistry is in the **School of Natural Sciences**
- It is one of the **six** (6) departments in the school, others being Physics, Mathematics and Statistics, Geography, Biological Sciences and Computer Studies

Department of Chemistry

- The Department of Chemistry has an establishment of **24** academic staff
- At present we have 13 academic staff (10 have PhD)

Department of Chemistry

Background

- Zambia is endowed with an abundant and extremely diverse plant flora and fauna
- A large number of plants/preparations derived from plants are used as traditional medicine (TM) by traditional health practitioners (THP) in Zambia
- Despite this fact, natural products research in Zambia is still in its infancy.

Department of Chemistry

Background

- Natural products research in Zambia can be considered to involve the following aspects:
 - (a) drug development
 - (b) validation of herbal materials
 - (c) value addition and
 - (d) isolation of components which have commercial/industrial potential

Department of Chemistry

Background

- Until early 1990s, only a few scientific studies had been undertaken on natural products:
- A study on isolation of abortifacient component(s) of a certain plant – Department of Chemistry, UNZA, M. Sc. study supervised by Prof. Siamwiza

Department of Chemistry

Background

- Development of soft carbonated drink (*Tip-Top*) from local fruits at National Institute of Scientific Research (NISIR), one of Zambia's Research institutes
- A preliminary clinical trial on an undisclosed plant extract claimed to be effective for the treatment of TB – also undertaken at NISIR

Department of Chemistry

Natural products work in the department:

- Dr. S. Prakash is one of the active persons in this area of research (1990 – to date)
- He is leading a multidisciplinary research group comprising chemists, biochemist, biologist, microbiologist and pharmacologist has been established.

Department of Chemistry

- Dr. S. Prakash's group has investigated 32 plant species
- Diseases targeted include microbial infections, diarrhoea, and malaria

Department of Chemistry

- **Current and Ongoing Research**
- Isolation and Identification of anti- *Neisseria gonorrhoea* components of an indigenous plant – (Ph. D. study in progress, supervised by Dr. Prakash)
- Study on resinous material from an indigenous plant – (Proposed M. Sc. study to be supervised by Prof. Siamwiza)
- Physicochemical and antifungal properties of a certain fruit (– Mrs. N. Prakash)

Department of Chemistry

- **Research by Other Groups** (mainly clinical trial, no systematic scientific investigation, no chemistry)
- Observational clinical trial on a herbal remedy claimed to be effective for treatment of HIV/AIDS in humans – led by Dr. P. Chikusu, School of Medicine

Department of Chemistry

- For a number of years UNZA through the Department of Biological Sciences had a collaborative research with Southern African Botanical Network SABONET (Key Person at UNZA was Prof. PMS Phiri, since moved on to another university)
- Extensive information on botanical resources is available through SABONET, a website is available

Department of Chemistry

- **Potential** for therapeutic plant species
- **Resource persons** for such plant species include traditional healers
- We certainly look forward to a fruitful relationship with ***GIBEX-Africa***

Thank you