

Body of work on Basotho medicinal plants

By conducting research on traditional medicine, the values and contribution of indigenous knowledge systems (IKS) towards broader scientific research can be explored.

So says the principal investigator of the University of the Free State's Phytomedicine and Phytopharmacology Research Programme (PPRP), Professor Anofi Ashafa. Based in the Department of Plant Sciences on the Qwaqwa Campus, the PPRP studies the biological effects of medicinal plants used in the traditional medicine of the eastern Free State.

"Our research is mainly aimed at documenting plants used by the Basotho in the management of different ailments and to further discover, isolate and purify active phytoconstituents that are responsible for disease curation or amelioration, thereby assisting in the global promotion of accessible and affordable medication in developing countries," said Prof. Ashafa.

Phytoconstituents are chemical compounds that occur naturally in plants, and since 2012 the PPRP has investigated numerous Basotho medicinal plants used as antimicrobials, antioxidants, antidiabetics, antitubercular, anticancer, anthelmintic and antidiarrheal agents. Apart from studying their biological activity, the researchers have evaluated toxicity to kidney, liver and heart functions in order to establish safe dosage parameters.

These activities have led to the discovery of four potent antidiabetic biomolecules that are awaiting the processes of patency and commercialisation. Additional outputs include 104 published peer-reviewed articles, seven postdoctoral fellows, six PhDs, nine Master's and 16 Honours graduates.

"Our research informs teaching and the development of expertise in ethnobotany, phytomedicine and phytopharmacology in order to contribute to the National Development Plan (NDP) through human capacity development, skills and knowledge transfer," says Prof. Ashafa.

The group is also investigating some threatened species on the Red List of South African Plants, compiled



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by the South African National Biodiversity Institute (SANBI), through micropropagation and field trials, and is proposing conservation strategies for the species' protection. Research is done in collaboration with several local and international universities, as well as the Agricultural Research Council (ARC).

Issued by Thabo Kessah, communication specialist for UFS: Qwaqwa Campus



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Clockwise from top left: *Dicoma anomala*, *Pentanisia prunelloides*, *Lessertia* (formerly *Sutherlandia*) *montana* and *Gazania krebsiana* are just some of the plants that have been investigated by PPRP researchers.