

*Potchefstroom 2520, South Africa*

<sup>b</sup>*School of Environmental Science and Development, North-West University, Private Bag X6001, Potchefstroom 2520, South Africa*

<sup>c</sup>*Laboratory for Electron Microscopy, North-West University, Private Bag X6001, Potchefstroom 2520, South Africa*

Namibia is the centre of diversity for *Boerhavia* L. and *Commicarpus* Standl. in southern Africa and these two genera have the ability to grow on soil rich in gypsum. Namibia is known to be a dry, hot country. This arid environment poses challenges to the survival of species and as a result plants have developed morphological and anatomical adaptations that assist them to survive. The adaptations of the leaves and anthocarps of two endemic *Boerhavia* species, *B. deserticola* Codd. and *B. hereroensis* Heimerl, as well as six *Commicarpus* species found in Namibia, were investigated using light- and scanning electron microscopy. Both the abaxial and adaxial surfaces of the leaves are covered with multicellular, glandular trichomes that secrete mucilage. The trichome layers are very dense in the two *Boerhavia* species but less so in the *Commicarpus* species. These trichomes decrease transpiration and lower the leaf temperature by increase reflection of solar radiation. The *Boerhavia* species also show Kranz anatomy. The cuticle is thick and impregnated with calcium oxalate crystals. These crystals, tannin and mucilage cells are scattered throughout the leaves. The anthocarp of the *Boerhavia* species has five ribs which are glabrous in *B. deserticola* but pubescent in *B. hereroensis*. The anthocarp of the *Commicarpus* species has ten obscure ribs and large, dark, glands scattered over the surface with very few trichomes. The anthocarp of both genera produces mucilage which might aid in seed dispersal and germination, and they have abundant sclerenchyma for structural support.

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**Species with potential for Industrial Crops in South Africa**

K.M. Swanepoel<sup>a</sup>, W.G. Alberts<sup>b</sup>

<sup>a</sup>*University of Zululand, Coral Str 111, Lynnwoodglen, Pretoria 0081, South Africa*

<sup>b</sup>*Karwil Consultancy, PO Box 462, Newlands, Pretoria 0049, South Africa*

The demand for natural products is estimated growing at 25% per year. This includes essential oils, plant extracts, and medicinal plants amongst others. A pressure on natural resources can be prevented if careful sustainable measures are taken in time. Industrial crops are plant species that need processing before utilisation. Species with potential for development as industrial crops in South Africa has been identified and studied. The focus was on medicinal, essential oils, beverages and fibres. Ten species were chosen under each category and a data base was formed. International production, market trends and international standards were documented

against the production of South African producers. Advantages and problems have been identified with potential of crop development. This study could assist role players of community projects, agricultural and rural development in the decisions of choosing alternative crops and entrepreneurship for skills development and poverty alleviation. The information from the study can also be applied by small scale and emerging farmers in the feasibility studies of utilisation of natural products as enterprises.

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**The value of anatomy in pharmacognosy and forensic studies**

P.M. Tilney, B.-E. Van Wyk

*Department of Botany and Plant Biotechnology, University of Johannesburg, PO Box 524, Auckland Park 2006, South Africa*

Anatomical characters are potentially useful to identify small fragments of commercially important herbal products as well as toxic plants that may be of relevance in forensic investigations. An increasing number of indigenous medicinal plants are being used both in the formal and informal economy so that the positive identification of species and infraspecific taxa has become important. Unfortunately very few of these plants have been studied anatomically. Plants are often the cause of fatalities due to the inappropriate use of herbal medicines or the use of misidentified plants (or sometimes intentionally used in homicide and suicide). The large number of toxic plants in South Africa often leads to stock losses. Anatomical characters can be useful as supportive evidence in forensic work to help identify the plant species in question/anatomical evidence may often give additional clues as to the identity of the plant when medical diagnosis/chemical forensic studies turn out to be inconclusive. Anatomical characters of potential diagnostic value will be presented for a selection of herbal medicines and highly toxic plants. Herbal medicines include *Agathosma betulina*, *Aloe ferox*, *Aspalathus linearis*, *Catha edulis*, *Cyclopia intermedia*, *Elytropappus rhinocerotis*, *Harpagophytum procumbens*, *Lippia javanica*, *Myrothamnus flabellifolius*, *Pelargonium sidoides*, *Sceletium tortuosum*, *Siphonochilus aethiopicus*, *Sutherlandia frutescens* and *Warburgia salutaris*. Poisonous plants discussed will include *Nicotiana glauca*, *Boophone disticha*, *Nerium oleander*, *Datura stramonium*, *Calilepis laureola*, *Abrus precatorius*, *Jatropha curcas* and *Ricinus communis*.

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**Consideration of factors associated with *Euphorbia ingens* decline in the Limpopo Province of South Africa**

J.A. Van der Linde<sup>a</sup>, D. Six<sup>b</sup>, M.J. Wingfield<sup>a</sup>, J. Roux<sup>a</sup>

<sup>a</sup>*Department of Microbiology and Plant Pathology, Tree Protection Co-operative Programme (TPCP), Forestry and*