

fluorescence data indicated a concomitant decline in PS II function (photosynthetic performance index) of canola plants fumigated at 200 ppb. No significant changes in photosynthetic gas exchange were evident at this level of SO<sub>2</sub>.

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### Are fleshy fruits of alien shrubs a preferred food resource for avian frugivores in the Cape Floristic Region?

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It has been proposed that alien shrubs with their attractive fruit displays could out-compete native shrubs for the attention of avian frugivores, thereby restricting seed dispersal of native species which is crucial for ecosystem maintenance. This hypothesis was tested by comparing the abundance and duration of avian species visitations and foraging activity in two fleshy-fruited alien shrubs (*Solanum mauritianum* and *Lantana camara*) with those of two fleshy-fruited native shrubs (*Chrysanthemoides monilifera* and *Olea africana*) at four different study sites (Cape Town, Paarl, Hermanus and Swellendam) in the Cape Floristic Region where these alien and native shrubs co-occur. Tests for significant differences (Generalized Linear Model) in the numbers of birds of different species and size class visiting, foraging and perching on alien and native shrubs during their fruiting stage were based on over 1000 records compiled from 240 h of observation at the four study sites. The results showed no significant differences in the total avian species complement visiting native and alien shrubs, but significantly greater numbers of birds of different species and size class visiting, foraging and perching on native than alien shrubs. These differences were apparent at all sites, except Paarl. They were most prominent among small to medium (50–150 g) and large birds (>150 g) and also apparent among individual avian species visiting the shrubs. Insignificantly different numbers of small birds (>30 g) were observed visiting, foraging and perching on native and alien shrubs. It is concluded that alien shrubs do not restrict seed dispersal of native species since more avian frugivores prefer fruits of indigenous plants, which could be due to their natural adaptation to the local flora. Since local avian frugivores forage both alien and native fruits, they share available avian dispersal services and thus, a potential exists for further spread of alien species. A shorter bird foraging bouts on the alien than indigenous shrubs may suggest that alien fruits have higher energy content than indigenous fruits which are being investigated.

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### Taxonomic studies on the genus *Dolichos* (Phaseoleae, Fabaceae) in South Africa

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Taxonomic studies on the mainly African genus *Dolichos* are presented. The genus belongs to the tribe Phaseoleae and can be distinguished from the closely related *Macrotyloma* by the short standard appendages, reticulate pollen grains and purple flowers. It is also closely related to, and often confused with, the two monotypic genera *Lablab* and *Dipogon* (previously placed under *Dolichos*), from which it differs in the characters of the style. Many species of *Dolichos* have a rootstock which is sometimes large and woody or fibrous and is eaten in some parts of southern Africa. The species can be distinguished from each other mainly by the growth form (scandent, prostrate or erect), shape and size of leaflets and shape of calyx lobes (round versus triangular). In South Africa, the genus is represented by ten species, two of which (*D. sericeus* and *D. trilobus*) also extend to Tropical Africa. Diagnostic characters, nomenclature and distribution of these species are briefly discussed.

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### Antimicrobial and phytochemical evaluation of twelve medicinal plants used by the Venda People

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High demand for the development of new drugs from natural products to counter resistant pathogens has led to an increase in research to validate bioactivities of plants used in traditional medicine. Twelve plants used in Limpopo province to treat venereal diseases, wounds, colds and fever, were extracted with petroleum ether, dichloromethane (DCM), 80% ethanol (EtOH) and water. The extracts were evaluated for antimicrobial [Gram-positive (*Bacillus subtilis* and *Staphylococcus aureus*), Gram-negative (*Escherichia coli* and *Klebsiella pneumoniae*) bacteria and a fungus *Candida albicans*] activities using micro-dilution techniques. The extracts were also tested for phytochemical composition including phenolics, condensed tannins, gallotannins and flavonoids using spectrophotometric methods. The DCM and EtOH extracts of *Bolusanthus speciosus* bark and stem showed good antibacterial activity against *B. subtilis*, *E. coli* and *S. aureus* with MIC values ranging from 0.0123 to 0.098 mg/ml. The water extracts of *Ximenia caffra* leaf showed a good activity with a MIC value of 0.049 mg/ml against *S. aureus*. All the extracts showed a broad-spectrum antifungal activity with MIC values ranging from 0.39 to 12.5 mg/ml against *C. albicans*.