prise open one of these tepals, clamber into the flower with their legs around the style, and receive pollen on the dorsal surface of their thorax from one of the primary anthers. When entering another flower, this pollen is deposited on the glandular hood of the inner tepal being prised open. The pollen germinates and penetrates the style only when the flower wilts and the tepal hoods are appressed against the stigma. Megachilid (leafcutter) bees are apparently the most important pollinators of *Albuca* species; this was confirmed by experiments involving virgin flowers in which we found that megachilids deposited and removed more pollen grains per visit than did honeybees. We also established that pollen transfer in *Albuca* populations is generally more efficient than in plants with conventional stigmatic pollen receipt. The floral conservatism in the genus *Albuca* apparently reflects the dedicated function of the inner tepals for mechanically filtering flower visitors, protecting the primary anthers from pollen-collecting insects, and transferring pollen to the stigma.

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An overview of the biological properties of volatile compounds - examples from the South African flora

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For many decades, essential oils produced by aromatic plants have been used to treat various ailments such as malaria and microbial. Many indigenous plants used in traditional health care are aromatic and this has prompted scientific investigations into the biological activities and chemical composition of several indigenous species. The antimicrobial, antimalarial, anti-oxidant and anti-inflammatory activities of selected South African aromatic plants used in traditional medicine will be discussed with emphasis on the Lamiaceae, Verbenaceae, Rutaceae, Geraniaceae and Asteraceae. The essential oil of *Vitex poora* exhibited good antimalarial activity (IC_{50}: 6.6×10^{-4} μg/ml), however the oil was also very toxic to kidney cells (IC_{50}: 4.2×10^{-6} μg/ml). The essential oil of *Salvia africana-caerulea* exhibited good antibacterial activity against *Bacillus cereus* (MIC value: 0.75 mg/ml) and also showed promising antimalarial activity (IC_{50}: 4.76 μg/ml). *Agathosma betulina*, often used topically to treat inflammation, inhibits the 5-lipoxygenase enzyme which is involved in the inflammation process (IC_{50}: 35.2 μg/ml). The paper will unequivocally illustrate the diverse biological properties of aromatic plants and emphasise the importance to record the pharmacological activity of ethnomedicinally important species.

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The use of aeroponics to investigate desiccation tolerance in the roots of the resurrection plant, *Xerophyta viscosa*

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The ability of resurrection plants to tolerate desiccation in vegetative tissues has fascinated researchers in the field. In order to understand the whole plant mechanism of attaining desiccation tolerance, we undertook to investigate the root tissues of the resurrection plant *Xerophyta viscosa,* as previous work has only been conducted on the leaf vegetative tissues of resurrection plants. An aeroponic plant growth system was designed and optimised to observe the roots response to desiccation without the restrictions of a soil medium and enable easy access to roots. The growth of both *X.viscosa* and control maize (*Zea mays*) plants were accomplished by regular spraying of roots with nutrient solution and dehydration was conducted through reduction of nutrient spraying. For the rehydration process *X. viscosa* plants were flooded with solution and were able to recuperate in under 48 hrs. Root relative water content and changes in antioxidant activity in response to desiccation were monitored. It was found through taking root water content samples that the roots are able to dry at a rapid rate aeroponically, in comparison to control plants dehydrating in soil. The antioxidant potential during dehydration was monitored and found to be active at a constant level between 80% and 5% RWC for antioxidant enzymes and at relatively high concentrations of 70 μM and 100 μM for the housekeeping antioxidants, ascorbate and glutathione, respectively.

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Molecular characterisation of pathogenesis-related protein 10 from *Xerophyta viscosa*

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Xerophyta viscosa is a poikilochlorophylous, desiccation tolerant plant that is able to withstand long periods of drought. The protective mechanisms that allow survival under abiotic stress conditions are being studied at the molecular level. A cDNA clone encoding a pathogenesis-related family 10 protein from *X. viscosa* (designated as XvIPR10) was isolated and characterised. *XvIPR10* encoded a 152 amino-acid, hydrophilic polypeptide with a molecular weight of 16.5 kDa and pI of 5.05 at pH 7. Phylogenetic and multiple sequence alignment analysis revealed that XvIPR10 had high identity (45.96%) and was related to AoPRP (AJ132610) from *Asparagus officinalis*. The recombinant XvIPR10 protein was over-expressed in a prokaryotic expression system and the protein exhibited ribonucleolytic activity against yeast transfer RNA. Furthermore a