protease inhibitor to enhance production of the VP1 antigenic protein. The VP1 construct was infiltrated into the plant through the method of syringe agro-infiltration. The VP1 protein was then transiently expressed in the cytosol of non-transgenic tobacco plants (*N. tabacum*) as well as in transgenic tobacco plants expressing the oryzacystatin and co-expressing a maize serine protease inhibitor. We are currently using SDS-PAGE analysis to analyse the protein profile and Western blotting to confirm the presence and amount of expression of VP1 in the different types of tobacco plants. First data about the different analyses will be presented.

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Nitrogen fertiliser requirements of medicinal plants

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The question of whether medicinal plants can be cultivated to meet rising demand for medicinal plants is a burning matter. Cultivation has been suggested to be a solution to not only meet increased demand for medicinal plants, but also a tool for biodiversity conservation and poverty alleviation. The growing demand for medicinal plants is related to the great cultural significance attached to medicinal plants. The growing demand has not only resulted in increased hazard for overexploitation of wild populations, but also an increased interest in cultivation. The intensive harvesting of medicinal plants due to increased use has in many places resulted in overexploitation and forms a serious threat to biodiversity. This results in acute shortages and price increases for certain plant species. Very little information is available on growing and cultivation of medicinal plants. In this study the effect of nitrogen fertiliser on the yield, chemical composition and antibacterial activity has been determined. Phosphorous and potassium were applied before planting and nitrogen after planting. LAN, ureum and ammonium sulphate were applied at 0 (control), 180, 240, 300 and 360 kg N/ha. The trial was harvested twice and the fresh plant material weighed. All the treatments showed significant increases in the fresh mass yield of the plants.

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The genus *Pelargonium* (Geraniaceae) in southern Africa

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Every year garden 'geraniums' by the million are being produced by nurserymen for adornment and decoration in homes, offices, streets, public parks and botanic gardens throughout the world. These are mainly derived or bred from the wild species of *Pelargonium* in southern Africa. Some species are used in the perfume industry, cultivated and distilled for their scent, while others have medicinal properties. *Pelargonium* species are also used as food plants by several butterfly and moth species (order Lepidoptera). L'Héritier, a French magistrate and botanist, was the first to use the generic name *Pelargonium.* The genus comprises about 280 species worldwide, with the majority (ca. 230 species) confined to the southern tip of Africa. Its wide range of variation in morphology and habit led to the recognition of various sections by botanists. However, to facilitate the identification of specimens from different parts of southern Africa, it was decided to develop an artificial key to the taxa based on leaf and floral characters, not taking into account life form, stem, pollen, chromosome or pollinator features. Currently sixteen informal 'groups' are recognised by using the outline, base, apex and margin characters of the leaf blade. Within the groups the characters of the flower are of importance—inflorescence, 2-many-flowered; colour, patterns of the markings and size of the petals; length of the hypanthium and the number of fertile stamens present. The fruit of *Pelargonium*, a rostrate schizocarp, is of no value as a tool in identifying species, since it is seldom collected. It is the striking beauty of the flowers that catch the eye of the zealous plant collector!

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DNA fingerprinting of *Plectranthus* plants for protection of cultivar registration

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The genus *Plectranthus* has provided several popular garden and potted house plants in South Africa. Vibrant floral colours and textured leaves contribute to its aesthetic appeal. Breeders have, for a number of years, developed new varieties with larger flowers and more exciting floral shades, ranging from white to blue. Unfortunately, it has become common for nurseries and garden centres to sell these new and improved *Plectranthus* varieties without permission from the breeders infringing on plant breeders rights. This has left many breeders struggling financially and unable to maintain their breeding programs. DNA fingerprinting techniques, RAPDs and ISSRs, were employed, in a forensic capacity, to determine which *Plectranthus* varieties were for sale at nurseries and garden centres in the Pietermaritzburg area. This research is directed at developing a simple, cost effective method for the rapid determination of *Plectranthus* varieties that are protected by registered patents.

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