

both birds and bees, and determined the following before and after the introduction of beehives: Bird abundance, bird diversity, nectar availability and bee abundance. We were able to significantly increase bee abundance but found no significant difference (bootstrap multiple comparisons) in nectar availability, bird abundance and bird diversity. Sugarbird numbers dropped at the site with the highest bee density, but this was only a trend and not significant. Abundant nectar in protea inflorescences excludes possible competition for the shared resource; only once the system is nectar limited we would expect the bees to have an impact. We conclude from this that when bee numbers are modestly increased in protea veld there is no negative impact on nectar-feeding birds and their dependent plants.

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Manipulation of plastidial pyrophosphate

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★ *Awarded the Van Staden Prize for best paper by a PhD student*

Inorganic pyrophosphatase (PPase) enzymes are responsible for the hydrolysis of pyrophosphate (PPi), yielding two orthophosphates (Pi) and water. Cytoplasmic PPi concentrations have been shown to be >5 times greater than the largely independent plastidial pool which contains *ca.* 80% of the cells' PPase activity. It is thought that maintenance of a low PPi concentration is required to drive anabolic plastidial metabolic reactions. In this paper we discuss the silencing of the plastidial PPase enzyme and its effect on the carbohydrate and carotenoid metabolism of *Nicotiana benthamiana*.

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Identifying trees on the East Coast of South Africa

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Before one can undertake any of numerous worthy activities involving plants, it is necessary to know the identity of the material being worked on. After a brief review of past compendia of Kwazulu-Natal trees, this presentation examines two new aids to the identification of material from this region which are nearing readiness for publication. One involves ink on paper, and is a thorough revision and expansion of Elsa Pooley's highly esteemed field guide. The other is an electronic key to the

same taxa as appear in the book, prepared and played using the Lucid identification package. The advantages and disadvantages of both of these aids are discussed, and it is evident that as they are complimentary, both are needed. Possible lines of future growth of these products are discussed as well.

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The economic impact of the introduction of low-phosphate detergents in South Africa

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Powdered laundry detergents used by households contain a significant amount of phosphates, known to cause eutrophication of water resources. Eutrophication, which is the excess build-up of algae, has a number of negative consequences for the environment and society. One solution to this problem is to remove, or to significantly reduce, the phosphates in laundry detergents. The aim of the study is to determine the economic costs and benefits associated with following this option, should it be legislated in South Africa. This forms part of a larger project initiated by the Water Research Commission. The study is guided by three objectives. Firstly, the extra costs to consumers of low-phosphate laundry detergents are calculated. Secondly, the costs and benefits that would accrue to various parties affected by the introduction of low-phosphate detergents are determined via a cost benefit-analysis. The final objective evaluates the ramifications of low-phosphate detergents on the Waste Discharge Charge System, which is an economic incentive policy to be introduced by the Department of Water Affairs in the near future. This study is currently in progress, and thus far, following interactions with Unilever, it has been established that phosphate-free detergents can result in the spotting of garments. This will lead to the additional cost of rewashing and this was calculated for a country-wide basis. In addition, the introduction of phosphate-free detergents will not affect the Waste Discharge Charge System from a policy perspective, as the aim of this system is to discourage pollution and not to make a profit.

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The molecular analysis of the effects of the rhizosphere signal molecule lumichrome as a plant growth promoter

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