



Bee Friendly Pastures: A partnership to expand and secure Australia's floral resources

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Speaker Bio

Dr. Kevin Foster. Pasture Agronomist and Physiologist. Kevin's research over the last 35 years has centred on the study and development of improved pasture species. He has extensive knowledge of agricultural research methodology in designing and conducting field experiments and understanding of southern Australia farming systems. His research interests are in plant ecophysiology, stress physiology and the effects of the environment on plant growth, seed and dry matter production in legumes. Also experienced in conventional plant breeding and hybridization technique. Interested on how locally-adapted legumes can contribute to more sustainable and profitable livestock production systems.

Presentation

The loss of traditional nectar and pollen sources has been identified as a major issue confronting the industry. Productive areas of native flora for the bee-keeping industry are eroding due to fire-frequency, drought and land-use change. With fewer traditional native flora apiary sites, sustained bee health using quality nutrition is becoming a constant challenge for the industry. Beekeepers have used canola and lucerne crops to fill this gap but both produce low-value apiary products. Australia has a world leading research program providing innovative breeding and management of highly-adapted pasture legume species to support livestock and seed production industries, but their commercial potential is largely unexploited with respect to the apiculture industry. Many of the *Trifolium* species of Mediterranean origins are adapted to dry areas, yet produce copious nectar and pollen when foraged by a bee, produce honeys with distinct and complex flavour profiles. These legume species often grow wild overseas and are highly valued for their honey production. In Europe some of the most flavourful honeys in the world are still being produced from pasture legumes. Some of these species are already in commercial production in Australia, with others soon to be released. Critically, these species also have the potential to provide a wide and reliable flowering window, abundance of resource leading to reduced hive movement, opportunity for new honey markets, maintenance resource for pollinator health and rapid restoration in the event of decline and damage to local floral resources. We also know the flowering patterns of these legumes and how seasonal conditions may affect these patterns.

An exciting new project has begun at the University of Western Australia, with funding support from AgriFutures and the Collaborative Research Centre for Honey Bee Products will assess annual and perennial pasture legumes for suitability to provide alternative forage resources for honey bees. The Bee Friendly Pasture team has begun characterising commercially grown pasture legumes in commercial fields and under controlled conditions with regard to their bee attractiveness, accessibility and the nutritional content of their flowers. Floral abundance and morphology, pollen quality, nectar volume and quality are also being examined. The team has already identified several species of annual and perennial legume pasture species that may provide excellent floral resources for European honey bees in Australia.