

**OR050***Towards isolating and identifying feeding stimulants in honeybee pollens***Richard Bridgett**, Falko Drijfhout

One contributing factor to the decline of honeybees could be that reduced colony strength during the winter period, and in times of sparse natural forage, leaves bees more susceptible to parasites, disease, and starvation. Beekeepers may attempt to enhance colony health during such times by feeding high protein supplemental diets to colonies. Unfortunately, these tend not to be as readily consumed as pollen. The addition of natural pollen to such diets can increase uptake by bees. It is therefore believed that pollens contain naturally occurring feeding stimulants to honeybees. Modern analytical techniques provide the best hope of being able to conclusively isolate and identify such stimulants. Current work is looking at the novel application of Counter-current Chromatography, within a process of bio-guided fractionation of mixed-species pollen extracts, to attempt to isolate and identify compounds within pollen that elicit an increased feeding response in pollen consuming bees. Results obtained through feeding trials indicate that the majority of the common sugars and amino acids present in pollens may have a limited effect on increasing consumption. Work to isolate compounds responsible for increasing the consumption of diets in feeding trials continues, with initial screening suggesting sterols may be present in the more active extracts. If stimulant identification can be achieved it is hoped a future range of more palatable supplemental diets, which more effectively maintain colony strength, may be produced for use by beekeepers. Such diets could also be of significant benefit to commercial beekeeping and industrial pollination services.