Making data count

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The plethora of high-tech data collection methods available to the modern biologist presents opportunities, but also challenges. While tools such as automated camera traps can vastly increase the efficiency of data collection and storage, allowing for the collection of massive amounts of photographic data, extracting quantitative data from these images manually can be a time-consuming and tedious task. Prototype counting software currently in development at Plant & Food Research that can be used to automatically process large numbers of photographs or scanned images is presented. The user trains the software to recognise objects to be counted, such as insects or seeds, allowing the software to be used across different image types, qualities and conditions. The abilities of the counting software to extract object counts from a variety of images is discussed, and data presented comparing its accuracy to manual counting in different situations. The viewer is also given an opportunity to try the counting software in a hands-on demonstration.

Olfactory responses of *Epiphyas postvittana* larvae to apple leaf extracts: a new behavioural bioassay technique

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Epiphyas postvittana (lightbrown apple moth, LBAM) is a polyphagous pest of horticulture, native to Australia and introduced into New Zealand, New Caledonia, the British Isles, Hawaii and California. Olfactory responses of LBAM have been well studied, but this has mostly been confined to adult moths. In this study, olfactory responses of LBAM larvae to apple leaf extracts were measured using a new laboratory bioassay technique for choice tests. Apple leaf extracts were prepared using four different extraction methods: methanol soak, near boiling water dip, chloroform soak and 70% ethanol blended. The choice of larvae between an apple leaf extract and solvent control was examined, and the bioassays were video-recorded in time-lapse mode with an infrared-enabled camera. LBAM larvae were significantly attracted to some of the apple leaf extracts. The results indicate that the new bioassay method can be used as a reliable tool for evaluating the olfactory attraction of LBAM larvae and, most likely, also of many other species. Based on these findings, an attempt will be made to identify the active compounds present in the apple leaves that are responsible for the larval attraction.