



## Integrative taxonomy of a key weevil pest in South Africa (*Phlyctinus callosus* Boh.) reveals a complex of at least six species.

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*Phlyctinus callosus* Boheman, 1934 (Curculionidae, Entiminae, Oosomini) is a species native from the Western Cape Province of South Africa. This pest causes economic damage to deciduous fruit during the adult stage and its quarantine status is strongly affecting fruit export markets. In addition to the damage caused within the country, it has spread to several areas of the Southern hemisphere via human mediated transportation. *Phlyctinus callosus* is presently considered as the only species of the genus *Phlyctinus*, however, slight morphological variation and the sporadic nature of this pest raised doubts on the present taxonomic status of this species. We applied an integrative taxonomic approach, combining the examination of external and internal morphological characters of adults and DNA sequencing (COI) of samples, to specimens from 23 localities of the Western Cape Province. Our preliminary results suggest that a total of 6 cryptic species are currently grouped under the name *P. callosus*. Diagnostic morphological features used to distinguish between species were found on the ventrites and genitalia of the males. Females cannot yet be distinguished reliably based on morphology. Uncorrected interspecific genetic distances based on COI sequences ranged from 3 to 11 %. Among the species of this complex, two were found in orchards and are causing damage. The other species were found in the surrounding, natural environment and seemed to be primarily associated with *Asteraceae*. More research is needed to explore the niche partitioning of each species, such as geographic distribution, hosts plant associations and phenology. More generally, this research highlights the importance of detailed integrative studies to identify functional taxonomic units of insect pests in agriculture.

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