

The *Marasmius haematocephalus* complex: global diversity and centres of diversity

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Marasmius haematocephalus (Mont.) Fr. was thought to be a cosmopolitan or at least pan-tropical species, but relatively recently has been shown to occur only in the Neotropics (Brazil and Ecuador). In the biodiversity hotspot of Brazil, where the type collection of *M. haematocephalus* was made, several closely related endemic species have been described.

Indo-Malayan and Australasian tropical and subtropical regions rival the Neotropics in floristic diversity, and the fungal flora reflects this diversity with high endemism. Approximately 60 collections of *Marasmius* in the *haematocephalii* complex from the Wet Tropics of north Queensland to the Big Scrub of northern New South Wales were analysed using morphological and molecular data. Our study shows at least eight species occurring in Australia (all misnamed *M. 'haematocephalus'*), which are within the broader '*haematocephalus*' morphological complex. Molecular analysis of three gene regions (ITS, LSU and *tef1*) places them within a well-supported clade, grouped around *M. haematocephalus* s.str. Six of the Australian taxa appear to be endemic to highly restricted geographic areas of southeast Queensland and northern New South Wales, far north Queensland, or FNQ and SEQ. Two are globally widespread, distributed across subtropical and tropical QLD, Papua New Guinea, southern Asia, Madagascar and Florida and may well hide cryptic species or varieties. Documenting the species and their distributions is important in considering their ecosystem roles, conservation values and potential as exotic introductions.