

# **Impact of land use types and farming practices on occurrence of arbuscular mycorrhizal fungi (AMF) Taita-Taveta district in Kenya**

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## **Abstract**

A study was undertaken along land use gradients in Taita-Taveta district, southeast Kenya to evaluate the occurrence of arbuscular mycorrhizal fungi (AMF) in seven land use types (LUT). The gradient was from indigenous forest (IF) to croplands with coffee (CO), maize (MA), horticulture (HT), napier (NA) and planted forest (PF). A total of 12 AMF morphotypes comprising of 4 *Glomus*, 1 *Claroideoglomus*, 5 *Acaulosporaceae*, 1 *Racocetra* sp. and 1 *Gigaspora* were isolated from the study site. Occurrence of *Acaulospora denticulata*, *Glomus ambisporum* and *Claroideoglomus etunicatum* was significantly ( $p < 0.05$ ) affected by LUT; *A. denticulata*, *Acaulospora laevis*, *G. ambisporum*, *Glomus* sp. 1, *Glomus* sp. 2 and *Gigaspora margarita* were common in all LUT; *C. etunicatum* and *Glomus* sp. 3 were restricted and *Acaulospora scrobiculata* and two additional undescribed morphotypes were found only in trap cultures. Mean spore abundance was significantly ( $p = 0.007$ ) different in cropped systems with CO (35), HT (36.6) and MA (41.7) recording lower mean spore abundance compared to non-cropped systems with PF (130), NA (91.3), FA (89.7) and NA (84.3). AMF species showed preference for either cropped or non-cropping systems and species diversity and richness were maintained despite dramatic changes in LUT.