Investigating the Association of Vesicular Arbuscular Mycorrhiza (VAM) with *Commelina benghalensis* Weed Species in Tea Lands

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A study was conducted to investigate the association of Vesicular Arbuscular Mycorrhiza (VAM) with *Commelina benghalensis* (Girapala), which is an aggressive weed infesting in tea cultivations. A field experiment was carried out at Wewessa estate, Badulla from September to December 2019. Four treatments i.e. Tea infested with *C. benghalensis* slashed at 3 weeks interval, Tea infested with *C. benghalensis* slashed at 6 weeks interval and Tea with no weeding for 3 months and tea alone (weed-free), were included. VAM spore count and root colonization percentages were calculated at 6-week intervals. Soil Phosphorus was analyzed and tea yield was measured. VAM spore count and root colonization percentage were significantly ($p<0.05$) higher in two treatments with *C. benghalensis* compared to those of no weeding treatment. Spore counts were recorded as 190, 200 spores/100g of soil in the treatments of which *C. benghalensis* was slashed at 3 and 6 weeks interval, against 120 in no weeding treatment. Root colonization was also reported as 56.7%, 60%, 39.4% in tea infested with *C. benghalensis* slashed at 3 and 6 weeks interval, and no weeding treatments, respectively. Significantly higher levels of soil Phosphorus (241 ppm and 237 ppm) were also reported from two treatments of C. *benghalensis* slashed at 6 and 3 weeks intervals compared to no weeding (230 ppm) treatment at the end of 3 months. There was no significant difference in tea yield between treatments. The study concluded that there is an association of VAM with *C. benghalensis* and P solubilization is taken place with VAM colonization in the rhizosphere of *C. benghalensis*. VAM association with *C. benghalensis* weed has thus been favorably affected on tea growth.

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