**Non-rhizobial bacteria exhibit persistent colonization in the roots and nodules of chickpea cultivars across diverse environments**

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Rhizobia are known for forming stable symbiotic relationships within the endosphere of legume hosts. However, the colonization of non-rhizobial bacteria in legume roots has been less explored. Firstly, we investigated the mechanisms for the microbiome establishment in the chickpea (*Cicer arietinum* L.) root across different cultivars and soils. Deterministic effects were more important than the stochastic processes in shaping the endophyte community structure for all the cultivars tested. The cultivar with higher symbiotic potential had greater secretion of benzoic acid (BA) and consistently colonised by 3 core ASV (Amplicon Sequence Variant) from *Burkholderia* clade in the root. Using a selective media, DNA identification, and colonisation testing, two of 98 isolated strains were confirmed as the culturable candidates of the core ASV. The two core strains were able to survival and grow in higher concentration of BA than the other strains, but had no plant growth promotion potential. In the second study, we analysed the nodule microbiome of four chickpea cultivars across five different growing environments spanning 1,400 km in Australia. Besides the symbiotic *Mesorhizobium*, we found two ASV from the *Burkholderia* clade and *Pseudomonas* sp. were persistently enriched in the nodules of all tested cultivars and environments. The culturable strains of these ASV were isolated, and demonstrated significant capability in producing Indole-3-Acetic Acid and enhancing chickpea nodulation and nitrogen fixation. The conserved colonisation of non-rhizobial endophytes is one target for future research developing beneficial strains to promote legume growth.