

Seed and seedling vigour of winged bean (*Psophocarpus tetragonolobus*) after single and dual inoculation with rhizobium sp. and bacillus cereus

ABSTRACT

The present study was conducted to evaluate the effect of single and dual inoculation of *Bacillus cereus* strain UPMLH24 and *Rhizobium* sp. strain AM2 on seed germination and seedling vigour of winged beans (*Psophocarpus tetragonolobus*). Treatments were as follows: Uninoculated control, *Rhizobium* sp. AM2, *Bacillus cereus* UPMLH24, and a combination of *Rhizobium* sp. AM2 and *B. cereus* UPMLH24. Present study found that inoculation with *B. cereus* alone and its combination had significantly increased ($p < 0.05$) root length, shoot length and vigour index of winged bean seedlings as compared to uninoculated control. However, present study indicated that single inoculation with *B. cereus* UPMLH24 was significantly higher than *Rhizobium* sp. AM2 + *Bacillus cereus* UPML24 inoculum in all parameters. In conclusion, single inoculation with *Bacillus cereus* UPMLH24 or in combination with *Rhizobium* sp. AM2 have the potential to enhance seed germination and seedling vigour of winged beans and might be suitable to be formulated as a biostimulant.

Keyword: Combined inoculation; *Psophocarpus tetragonolobus*; Rhizobacteria; Single inoculation; Winged bean