CONCLUSION

The study has demonstrated that the process invented to produce biopesticides proved effective in maintaining a CFU load of $10^{9-10}$ of *Trichoderma harzianum* or *Pochonia chlamydosporia* and $10^{12-13}$ of *Pseudomonas fluorescens* per gram formulation upto 3 months. The strains of the biocontrol agents used to prepare the biopesticides were found quite compatible with higher concentrations of the fungicides and established in soil, hence can provide a longer disease control. The seed treatment with Biowilt-X (*T. harzianum*) and Bionem-X (*P. chlamydosporia*) satisfactorily controlled the wilt and root-knot of pigeonpea and improved the yield by 3.5 and 2.9 q/ha, respectively. *P. fluorescens* was found multifarious in activity as it promoted the plant growth and suppressed both fungal and nematode pathogens, hence it can be used for different situations. Seed treatment with the commercial formulation of *P. fluorescens* (Biocomp-X @ 5g/kg seeds) provided effective control of wilt, root-knot and the resulting wilt disease complex and improved the yield of pigeonpea by 5.7, 2.8 and 7.9 q/ha, respectively which was greater than fungicide-nematicide treatment. The bacterial biopesticide also acted as an effective biofertilizer and its application in pathogen free plots resulted to a yield promotion of 4.3 q/ha. The cost of the newly produced biopesticides is estimated Rs. 45/500 g pack (equivalent to US $ 1.0) which is much less than the cost of contemporary biopesticides available in the Indian market. Hence application cost of biopesticide for 1 hectare comes around Rs 100 (US $ 2.0) which is well affordable to small and poor farmers of India and other developing countries.