

Halotolerant *Azotobacter* spp. and its formulations to screen, different carrier materials and shelf life study

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ABSTRACT : The present research work was conducted to screen different carrier materials for salinity tolerant *Azotobacter* spp. to be used as biofertilizer and its shelf life study. Formulations of *Azotobacter* spp. in fly-ash, saw dust and rice husk ash were screened for the better survival as bacterial biofertilizers. Fly ash was observed as best carrier material and fly ash was further used as carrier material for optimization and shelf life study stored at $30\pm 1^{\circ}\text{C}$ up to six months. Optimization of Fly ash based bioformulation revealed that $30\pm 1^{\circ}\text{C}$ temperature, 35% moisture content and zero day of storage time were found as best condition for biofertilizer bioformulation to survive. Shelf life study in (fly ash) reveals that the population of bacteria gradually decreases with storage time and maximum population was observed at zero day (41) of formulation. The population of *Azotobacter* declined upto 02 log at 10^8 cfu/g after six months of storage which is within the permissible limit. From these results it can be concluded that the stress tolerant strains of biofertilizer formulations in fly ash could be a better option for the growth and yield of the crop in sodic/saline type of soil.

Key Words: *Azotobacter* spp., formulation, halotolerant, fly-ash, shelf life.