

# A Comparative Evaluation and Utilization of Entrapped *Bacillus* sp. (Gen Bank MN 243657) and *Pseudomonas aeruginosa* SU-1 in Poultry Waste Degradation †

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**Abstract:** *Bacillus* sp. (Genbank MN243657) was obtained from the Center for Bioscience and Nanoscience Research, and *P. aeruginosa* SU-1 were used in this study. Initially, biomass was optimized for the incubation period, pH, and temperature, following biomass optimization with RSM. The obtained organisms were able to produce keratinase, which was found to be a 64 KDa protein and 56KDa. Now the biomass produced using the optimized condition was immobilized and checked for its ability to degrade keratinase, and efficiency was compared. Immobilized *P. aeruginosa* SU-1 was degrading keratin and feather better than *Bacillus* sp. (Genbank MN243657). It was found to reduce featherweight by 57.3% and 41%. Hence it was found that both the immobilized bacterium can be used for poultry waste treatment, and *P. aeruginosa* SU-1 was more efficient than *Bacillus* sp. (Genbank MN243657).

**Keywords:** *Pseudomonas aeruginosa* SU-1; *Bacillus* sp. (Genbank MN243657); Keratinase; Biomass; Feather Degradation.

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## Conflicts of Interest

The authors declare no conflict of interest.