

## **Abstract**

Degradation of soil health through excessive usage of chemical fertilizer has led to decreased agricultural production, to mitigate the effects of soil degradation, compost containing PGPM should be utilized. This study focuses on characterizing Plant-Growth Promoting Microorganisms in Takakura compost isolates, by identifying nitrogen-fixing, and phosphate solubilization capabilities. PGPMs have an important role in the growth and health of plants, by increasing the availability of nutrients, synthesizing growth hormones, increasing resistance to abiotic stresses through the production of stress hormones, and protecting against pathogenic microbes. The data gained from the PGP experiment using isolates from Takakura compost shows that 36 isolates can survive in nitrogen-free medium while 4 isolates have exhibited phosphate solubilization capabilities, which could be concluded that the isolates have PGP capabilities and can be used as soil inoculants.

Keywords: Characteristics Testing; Composting; Plant-Growth Promoting Microorganisms