

## ABSTRACT

This research aims to develop a natural biopesticide from papaya leaves (*Carica papaya*) and organic soap to control the rice bug (*Leptocorisa oratoria*) pest, which is an effective, environmentally-friendly, and safe alternative to synthetic pesticides. The experimental study used a completely randomized design with 4 treatments and 4 replications, varying the concentration of papaya leaves (25%, 50%, 75%) combined with organic soap. The biopesticide solutions were tested for their chemical content and implemented by spraying on 20 rice bugs to evaluate their effectiveness. The results showed that the biopesticide with 75% papaya leaf concentration had the highest effectiveness, with an average of 5 rice bugs dying during the 5-day observation period. The biopesticide solutions also contained safe levels of flavonoids and alkaloids, indicating their environmental safety. This research offers a practical solution for farmers in Indonesia while supporting sustainable agriculture and environmental conservation, contributing to the SDGs 2, 12, 15.

**Keyword:** Biopesticide, Papaya leaves, Rice bug, Environment