

**Kajian Keamanan Pangan Rimpang Segar dan Bubuk Ditinjau dari Sifat  
Sitotoksik, Aktivitas Antimikroba, dan Antioksidan**  
*(Food Safety Assessment of Fresh and Powdered Rhizomes in Terms of Cytotoxic  
Properties, Antimicrobial, and Antioxidant Activities)*  
Dr. Titik Budiati, S.TP., M.T., M.Sc.

**Ani Sri Martini**  
**Study Program of Food Engineering Technology**  
**Majoring of Agriculture Technology**  
Program Studi Teknologi Reakayasa Pangan  
Jurusan Teknologi Pertanian

***ABSTRACT***

*Rhizomes are one type of spice that is often used as a cooking ingredient as well as herbal medicine or traditional medicine. The usage of rhizomes into herbal medicine or medicine because they have phytochemical components that can maintain and overcome degenerative diseases. The rhizomes used in this study were ginger, turmeric, and kencur (*Kaempferia galanga*) in two forms: fresh and powdered. The purpose of this study was to determine the cytotoxic activity, antibacterial properties, and antioxidant properties possessed by the two rhizomes. Data analysis used T-test and Analysis of Variance (ANOVA) which was then continued using DMRT test if the difference was significant. The results of the cytotoxic test showed that both types of fresh and powdered rhizomes at all concentration variations did not have cytotoxic activity against Vero cells. The antibacterial test shows that fresh rhizomes and powder have antibacterial properties because they can inhibit *Escherichia coli*, *Listeria monocytogenes*, *Bacillus cereus*, and *Pseudomonas aeruginosa* bacteria. The ANOVA test results showed that the types of rhizomes consisting of ginger, turmeric and kencur (*Kaempferia galanga*) in each fresh and powdered form on antioxidant properties were significantly different. T-test showed that different types of fresh and powdered rhizomes had a significant effect on antioxidant activity, with the antioxidant properties of fresh rhizomes relatively higher than powdered rhizomes.*

**Keywords:** *antibacterial antioxidant, cytotoxic, rhizome*