

**Effectiveness of Kirinyuh Leaved Bio-Herbicide (*Chromolaena odorata* L.)  
Towards Weed Diversity in Corn Field (*Zea mays* L.)  
Supervised by Dr. Ir. Mochamad Syarief, M.P.**

**Lili Emiliya Rosenda**  
Study Program of Food Crop Production Technology  
Department of Agricultural Production

**ABSTRACT**

*Various allelopathic compounds contained in the Kirinyuh plant aka Siam weed (*Chromolaena odorata* L.) make this plant a potential natural herbicide. However, the effectiveness of this plant as a bioherbicide needs to be studied further. This research aims to examine the effectiveness of the Kirinyuh leaves herbicide compared to synthetic herbicides containing atrazine in controlling weeds in corn plants (*Zea mays* L.). This field research was carried out in Jember State Polytechnic, Jember Regency, East Java in September-December 2023. Sampling used a random quadratic method at five sample points with three replications in a 1 m<sup>2</sup> plot. Data were analyzed using SPSS, and the further data then be tested using the Mann-Whitney Test. Observations include weed species diversity (using the Shannon-Wiener index), weed species similarity index (using the Sorensen index), SDR (Summed Dominance Ratio), absolute dominance, absolute density, plant height, and fresh weight of unpeeled cobs. The results showed a moderate value of weed species diversity ( $1 < H' < 3$ ) in both Kirinyuh herbicides (2,594) and synthetic herbicides (1,400) with a species similarity index between the two herbicides of 33%. In the SDR, the Kirinyuh herbicide area was dominated by puzzle grass while broadleaf weeds dominate the synthetic herbicide area. Meanwhile, the absolute density of weeds and the absolute dominance of weeds between Kirinyuh herbicides and synthetic herbicides did not show any significant differences. Likewise, for plant height and fresh weight of unpeeled cob, there was no significant difference between Kirinyuh and synthetic herbicides.*

**Keywords:** *Bio-Pesticide, Glutinous Corn, Grass, Irrigated Field*