ALLELOPATHIC EFFECT OF *Argeratum conyzoides L.* EXTRACT ON THE GROWTH OF AEROBIC RICE (*Oryza sativa*)

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ABSTRACT

ALLELOPATHIC EFFECT OF *Argeratum conyzoides* l. EXTRACT ON THE GROWTH OF AEROBIC RICE (*Oryza sativa*)

Rice is a staple food in Asia and one of the main problems of the rice production is water scarcity. Using genetic engineering, the common lowland rice was enhanced to withstand less availability of water for its growth. Aerobic rice can thrive on drought-prone conditions which are suitable for weed growth. A proper sustainable weed control is needed for the cultivation of aerobic rice as no standing water to suppress weed germination at early planting stage. The concept of allelopathy is to use Argeratum *conyzoides L.* extract which can control weed thus eliminating the competition of the crop to grow. Different concentration of *Argeratum conyzoides L*. (20%, 30% and 50%) extract were applied into the soil of the crop cultivation. This method can show the effects on different concentration of the extract towards the growth of weed thus giving different growth rate of aerobic rice. The result was analyzed using one-way ANOVA analysis in Statistical Package for Science Studies (SPSS). In 60 days-period, the weeds that are found germinated are dominantly *Echinochloa crus-galli* and *Eragrotis aspera* with the percentage of dominance 61.5% and 38.5% respectively. The result shows no significant difference of various concentration of *Argeratum conyzoides L.* towards the aerobic rice development in terms of the rice's height, number of tiller and chlorophyll concentration. The ineffectiveness of the extract towards those weeds is caused by the high selectivity of the allelopathic effect towards weeds growth.

KEYWORDS: *Sustainable, dominantly, selectivity, ineffectiveness*