

Yaowalak Netsing 2011: Effects of by-Product of Monosodium Glutamate (ami-ami) Application on Growth and Yield of Sugarcane (*Saccharum officinarum* L.), Properties of Soil and Net Revenue. Master of Science (Sustainable Land Use and Natural Resource Management), Major Field: Sustainable Land Use and Natural Resource Management, Interdisciplinary Graduate Program. Thesis Advisor: Assistant Professor Chaisit Thongjoo, Ph.D. 90 pages.

Study on investigated efficient use of by-product of monosodium glutamate (ami-ami) on growth and yield of sugarcane (*Saccharum officinarum* L.) planted in Kamphaeng Saen soil series. Experimental design was Randomized Complete Block Design (RCBD) with 4 replications and 7 treatments. The study revealed that applying ami-ami 400 lit/rai combining with chemical fertilizers, i.e., equivalent to 400 lit/rai of ami-ami effected on the highest height of sugar cane at 8 months (382.67 cm.). Found all treatments are applying chemical fertilizers or ami-ami, both were single use or combination with chemical fertilizers, effected on height of sugar cane at 9 months nearly the same, and significantly different when comparing with the control treatment.

Regarding yield and yield components of sugar cane at 12 months, it was found that applying ami-ami 400 lit/rai combining with chemical fertilizers, i.e., equivalent to 400 lit/rai of ami-ami effected on the highest of stalk heights, stalk diameter and weight per stalk. While, applying ami-ami 400 lit/rai combining with chemical fertilizers, i.e., equivalent to 400 lit/rai of ami-ami effected on the highest of cane yield (26.79 ton/rai) It's does not different apply chemical fertilizers, i.e., equivalent to 800 lit/rai of ami-ami. Besides, applying ami-ami 400 lit/rai combining with chemical fertilizers, i.e., equivalent to 400 lit/rai of ami-ami effected on the highest of CCS (commercial cane sugar) and sugar yields (10.99 % and 2.94 ton/rai, respectively) Subordinate, applying chemical fertilizers, i.e., equivalent to 800 lit/rai of ami-ami and applying ami-ami 800 lit/rai respectively. While the control treatment effected on the lowest of stalk heights, stalk diameter, weight per stalk, cane yield, CCS and sugar yields.

Economic compensation found that applying ami-ami 400 lit/rai combining with chemical fertilizers, i.e., equivalent to 400 lit/rai of ami-ami effected on the highest of net revenue (11,760.12 baht/rai) and net revenue over control about 9,000 baht/rai.

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Thesis Advisor's signature