

Thanasamont Kulkaranlert 2012: Utilization of by-Product of Monosodium Glutamate (ami-ami) Mixing with Fly ash on Growth and Yield Components of Maize (*Zea mays* L.)
Master of Science (Soil Science and Management Technology),
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The aim of this study was to investigate the effects of by-product of monosodium glutamate (ami-ami) mixing with fly ash (1:1 by weight) on the growth and yield components of maize (*Zea mays* L.). Experimental design was randomized complete block. The study revealed that the application of ami-ami mixing with fly ash of 600 kg/rai in combination with chemical fertilizers equivalent to 600 kg/rai of ami-ami mixing with fly ash effected on the highest of plant height, leaf collar height and leaf greenness (SPAD reading) of maize at all growth stages nearly the same as the application of chemical fertilizers equivalent to 1,200 kg/rai of ami-ami mixing with fly ash and ami-ami mixing with fly ash of 1,200 kg/rai, respectively. While the control treatment produced the lowest plant heights, leaf collar height and leaf greenness (SPAD reading) of maize at all growth stages. Regarding yield and yield components of maize, it was found that the application of ami-ami mixing with fly ash of 600 kg/rai in combination with chemical fertilizers equivalent to 600 kg/rai of ami-ami mixing with fly ash effected on the highest numbers of full ear, ear weight, ear without husk weight, husk and cob weight, grain weight and 1,000 grain weight of maize nearly the same as the application of chemical fertilizers equivalent to 1,200 kg/rai of ami-ami mixing with fly ash and of ami-ami mixing with fly ash of 300 kg/rai in combination with chemical fertilizers equivalent to 300 kg/rai of ami-ami mixing with fly ash, respectively. While the control treatment gave the lowest numbers of ear per plant, numbers of full ear, ear weight, ear without husk weight, grain weight and 1,000 grain weight of maize.

All treatments applying chemical fertilizers or ami-ami mixing with fly ash both with single use or combination with chemical fertilizers as well as the control treatment effected on chemical properties of soil: a) soil pH was slightly acid to alkaline; b) level of electrical conductivity (EC_e) of soil was low; c) level of organic matter and exchangeable K were low to moderate; d) level of available P was moderately high to very high; and e) level of exchangeable Ca and Mg were high.

Student's signature

Thesis Advisor's signature