

Abstract

In this study, papaya plants were treated once a week with, bioextract from Chinese green mustard and bioextract from fish meal at the ratios of 1:250, 1:500 and 1:1,000 (bioextract:water, v/v), 15-15-15 fertilizer solution and water (control). There were two experiments in this study which were combined with the study for appropriate ratio of bioextracts (8 treatments) and the study of opportunity for using only the bioextract (appropriate ratio from the 1st study) or mixed with the fertilizer solution (7 treatments). Both experiments were designed in RCBD with 4 blocks.

In the first experiment, vegetative growths were not significantly different among the treatments during 8 months after transplanting. However, the number of fruits, fruit weight and total yield were significantly different. The use of bioextract from the Chinese green mustard at ratio of 1:250 gave the highest number of fruits (9.00 fruits) and total yield (6.92 kg) which were not significantly different with those from the application of fertilizer solution. The fruit size, sweetness and macronutrient in leaf were not significantly different. Nitrogens in soil (after 8 months transplanting) were not significantly different while phosphorus and potassium were significantly different among the treatments. The use of Chinese green mustard bioextract at ratio of 1:250 gave the lowest quantity of organic matter (6.40%), and the soil pH was significantly decreased from 7.1 to 6.3 after the use of fertilizer solution. In the second experiment, total vegetative growths were not significantly different. But the yield showed that the use of Chinese green mustard bioextract at ratio of 1:250 + fertilizer solution gave the highest number of fruits (17.17 fruits), so the yield on this treatment was the highest too (3.33 kg). The control gave the lowest TSS. Nitrogen and potassium in leaf were not significantly different while phosphorus was significantly different among the treatments. The electrical conduction in the soil insignificantly increased as compared with before transplanting. The use of fertilizer solution made the soil pH significantly decrease into the lowest. The soil nitrogen insignificantly increased in every treatment. Therefore the Chinese green mustard bioextract must be used at the ratio of 1:250. Additionally, if it is used together with the fertilizer solution, it will give the same growth, yield and quality as of those from the use of the only fertilizer solution.