**Management of acid soils by using organic fertilizer on organic herbal roselle product**

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## Abstract

The study on management of acid soils by using organic fertilizer on organic herbal roselle product was conducted at farmer's field, Banlam sub-district, Wihandaeng district, Saraburi province, during October 2008 – September 2010. Soils were classified as Hin Kong soil series, soil group no.16. The objectives of the research were to study effect of various soil conditioners with organic fertilizer on soil chemical properties change, yields of roselle and economic return. The experimental design was randomized complete block with 3 replications. The treatments included 1) control 2) farmers pratice 3) cow dung at rate of 2 tons per rai 4) compost at rate of 2 tons per rai 5) marl at rate of 500 kilogram per rai in combination with cow dung at rate of 2 tons per rai 6) marl at rate of 500 kilogram per rai in combination with compost at rate of 2 tons per rai 7) dolomitic limestone at rate of 500 kilogram per rai in combination with cow dung at rate of 2 tons per rai 8) dolomitic limestone at rate of 500 kilogram per rai in combination with compost at rate of 2 tons per rai. The results showed that soil pH increased when compare to before experiment. The treatments of dolomitic limestone in combination with cow dung and dolomitic limestone in combination with compost showed highest soil pH of 6.5. The highest organic matter and available potassium content were observed in treatment applied cow dung, which were 2.71% and 150 milligram per kilogram, respectively. The highest available phosphorus and magnesium content were observed in treatment applied with dolomitic limestone with compost, which were 19 and 169 milligram per kilogram, respectively. The calcium content was highest in treatment applied with marl 500 with cow dung, which was 1,625 milligram per kilogram. The effect of lime and organic fertilizer on roselle yields was found. Application of marl in combination with cow dung gave highest average roselle yield of 1,519 kilogram per rai. While for control treatment showed the lowest average yield of 612 kilogram per rai. The economic analysis showed that the application of marl in combination with cow dung obtained the highest economic return of 8,490 baht per rai.

**Keywords:** dolomitic limestone, organic herbal roselle, acid soils