ชื่อเรื่อง **Effect of Soil Water Levels and Nitrogen Fertilizer on Growth of Vetiver Grown on Three Major Soil Series of Northeast, Thailand**

ชื่อผู้วิจัย Santibhab Panchaban and Mongkon Ta-oun

ชื่อหน่วยงาน Department of Soils, Faculty of Agriculture, Khon Kaen University, THAILAND

ปีที่ดำเนินการ

ปีที่พิมพ์รายงาน

Abstract

Experiments were conducted in greenhouse and in the field to elucidate the effect of soil water and nitrogen fertilizer levels on growth of vetiver on three major soil series of the Northeast, Thailand, namely Satuk (Oxic Paleustults), Nampong (Ustoxic Quartzip-samments) and Roi-et (Aeric Paleaquults at Khon Kaen Province during 1993-1994).

For the greenhouse study, four levels of soil water (100, 80, 60 and 40% of field capacity) were applied with each level of 0, 2.5, 5 and 10 kgs. nitrogen fertilizer per rai, three weeks old Songkla-3 vetiver seedlings were transferred into 5 kgs. capacity pots. Soils were treated with respective levels of water and nitrogen. Experimental design was factorial in CRD. Plants were observed for growth and harvested at 3 months.

Roi-et soils gave the highest shoot dry matter followed by Nampong and Satuk soils. In general, increase in soil water as well as nitrogen fertilizer levels resulted in increase in shoot dry matter for all soils. There was no interaction between soil water and nitrogen fertilizer levels for Satuk and Nampong but Roi-et soils.

For field study, three soil series with three different locations were surveyed and selected. For each soil, 2 levels of soil water (control and irrigation) were applied with each level of nitrogen fertilizer (0 and 10 kgs. N per rai). Plot size were 4x6 m. with 1x1 m. spacing. Experimental design was in RCBD with 3 replications. Growth was observed and measured. The plants were harvested when they were 8-10 months old. Shoot dry matter as well as other parameters were determined. In general, increase in soil water levels as well as nitrogen fertilizer resulted in increase shoot dry matter. Nampong soils gave the highest shoot dry matter followed by Satuk and Roi-et soils respectively. For Nampong soils, the effect of irrigation was extremely high for shoot dry matter when compared to the effect of nitrogen fertilizer where as on the other soils, the effect from both treatments were more or less similar.