

NITROGEN AND POTASSIUM FERTILIZATION OF VIRGINIA  
TOBACCO (NICOTIANA TABACUM L.) IN A  
SANSAI SANDY LOAM

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The thesis attached hereto, entitled "NITROGEN AND POTASSIUM FERTILIZATION OF VIRGINIA TOBACCO (NICOTIANA TABACUM L.) IN A SANSAT SANDY LOAM", prepared and submitted by VUT ANANBOONTARICK in partial fulfillment of the requirements for the degree of Master of Science in Crop Science (Agronomy) is hereby accepted.

  
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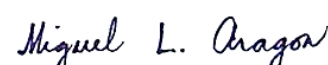
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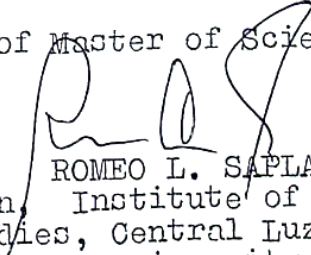
  
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*Vut Ananboontarick*

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## ABSTRACT

ANANBOONTARICK, VUT, Institute of Graduate Studies, Central Luzon State University, Muñoz, Nueva Ecija, Philippines, February 1985. Nitrogen and potassium Fertilization of Virginia Tobacco (*Nicotiana tabacum* L.) in a Sansai Sandy Loam.

Major Adviser: Dr. Miguel L. Aragon

A study was undertaken to determine the effects of N and K fertilization on the yield, yield components, quality, and nutrient content of Virginia tobacco in a Sansai sandy loam. The field experiment was conducted at the Maejo Tobacco Experiment Station, Chiangmai, Thailand, during the rainy season of 1984.

Four levels of N and K were used: 0, 50, 100, and 150 kg for N; and, 0, 120, 240, and 360 kg for K/ha. The treatments were laid out in a factorial experiment in RCBD with three replications.

The weight of fresh and cured leaves increased correspondingly as the level of N and K was increased from 0 to 100 kg/ha and from 0 to 240 kg/ha, respectively. With 150 kg N/ha, there was a reduction in the weight of cured leaves. In terms of the weight of fresh leaves, 150 kg N + 360 kg K/ha outyielded

all other treatments, however, in terms of the weight of cured leaves, 100 kg N + 240 kg K/ha seemed to be satisfactory with yield of 3.4 t/ha.

The weight of cured leaves was positively correlated with N and K fertilization. The maximum levels of N associated with the maximum yield at 0, 120, 240, and 360 kg K/ha were 100.00, 112.67, 117.17, and 117.83 kg/ha, respectively. The response function to increasing K was linear, hence, the maximum level of K to be applied to obtain the maximum yield was not determined.

The leaf length and width showed effects of N and K fertilization while the number of leaves harvested and the specific leaf weight remained unaffected. The quality of Virginia tobacco was improved with N and K fertilization, however, application of N higher than 50 kg/ha reduced the quality of tobacco leaves. The best quality leaves was obtained at 50 kg N + 240 to 360 kg K/ha. Based on crop value, 50 kg N + 120 kg K/ha with 99.50 thousand Bath/ha appeared to be satisfactory for tobacco production.

Application of N and K fertilizers, regardless of level, improved the nutrient status of the plant and corrected deficiency symptoms for both N and K.

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