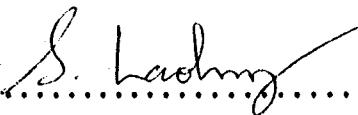
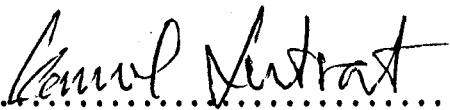



THESIS TITLE : A STUDY OF GENOTYPE X ENVIRONMENT INTERACTION OF
SESAME

AUTHOR : MR. SRISOM VISRUTARATNA

THESIS ADVISORY COMMITTEE :

.....  Chairman
(Assistant Professor Dr. Suwit Laohasiriwong)

..... 
(Assistant Professor Dr. Kamol Lertrat)

..... 
(Assistant Professor Prasit Jaisil)

ABSTRACT

A genotype and environment interaction for yield and some important agronomic characters of 14 sesame cultivars was studied. Heritability and comparison of two stability analysis methods i.e. those were suggested by Eberhart and Russell and Kang and Miller were also carried out. The experiments were conducted in five locations, Field Crop Section of Faculty of Agriculture, Khon Kaen University, Ubon Ratchathani Field Crops Research Center, and Loei, Mahasarakham and Roi-et Field Crops Experiment Stations. The studies conducted during both late rainy season 1988 and early rainy season 1989. At each location, the experiment was arranged in randomized complete block design with 4 replications.

Genotype and environment interaction was found for all characters measured in both seasons and two seasons combined. The environmental variation was high in all trials except 1000 seed weight.

The results from both stability analysis methods showed that cultivars, Hnanni 25/160 and Nakhonsawan had very good stability for late rainy season. In early rainy season, good performance cultivars were CW-103, and Sukhothai. When locations and seasons were combined, cultivars Sukhothai was more stable than the others. For heritability, the results indicated 90-99 percentages of broad sense heritability for first height of the pod, plant height at harvesting, number of branches per plant and 1000 seed weight in all trials and 60-90 % for number of pods per plant and grain yield. Cultivars No.585-2 and 586-2 which had high percentages of broad sense heritability of 1000 seed weight may be used as parent sources for breeding program for larger seed size.