Mya Thandar 2009: Effects of Seeding Rates and Harvesting Dates on Yield, Oil and Protein Contents and Aflatoxin Incidence in Sesame Seed (*Sesamum indicum* L.). Master of Science (Tropical Agriculture), Major Field: Tropical Agriculture, Interdisciplinary Graduate Program. Thesis Advisor: Associate Professor Ed Sarobol, Ph.D. 79 pages.

To determine the effects of different seeding rates and harvesting dates on yield of sesame and improvement of seed quality, the field experiment was conducted at the National Corn and Sorghum Research Center, Pak Chong, Nakhon Ratchasima Province during rainy season 2008. A split-plot in RCB design was used and replicated four times. Treatments consisted of four seeding rates (4, 6, 8 and 10 kg $ha^{-1}$) as main plots and different harvesting dates (52, 56 and 60 days after flowering, DAF) as sub-plots, respectively.

Results revealed that all growth and yield parameters were significantly affected by the seeding rates and harvesting dates. The interaction of seeding rates and harvesting dates significantly affected on all parameters studied, while 1000-seed weight showed no significant interactions. For each seeding rate, delay harvesting increased plant height at harvest, height to first capsule, node numbers per plant, capsule numbers per plant and capsule length, but reduced seed numbers per capsule. Most importantly, for each seeding rate, the greater seed yield was obtained from the early harvest (52 DAF) and the greatest seed yield was from 4 kg $ha^{-1}$ seeding rate. Low seeding rate reduces seed cost. Therefore, it could be suggested that 4 kg $ha^{-1}$ seeding rate application was optimum for high sesame yield.

Aflatoxins are considered a potential hazard to human and animal health, due to their toxicity and carcinogenicity. Aflatoxin contamination in seed occurred at 7.58 ppb which was less than 20 ppb maximum limit. Although the concentration was not toxic level, it is considered unfit for human consumption and trade and may reduce seed quality for consumption. The average oil and protein contents in sesame were 37.46% and 26.36%, respectively.

Student's signature | Thesis Advisor's signature | 23 / 11 / 2009