

Thesis Title : Effects of seed size on growth, yield and quality of peanut  
CV. Khon Kaen 60-3  
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Thesis Advisory Committee :



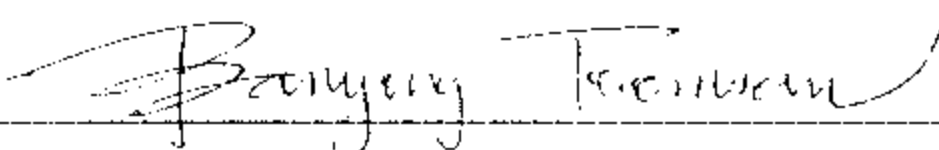
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#### Abstract

This study was carried out to investigate the effects of sowing seed sizes on growth, yield, and quality of Khon Kaen cv.60-3 peanut variety. The experiments were carried out at three locations during dry and rainy seasons. That is the first season was carried out at Ban Sapchareon, Tambon Samakkee, Amphur Rong Kam, Kalasin Province during January to May, 1997, the second season was carried out at Ta Phra Agricultural Research Center, Tambon Ta Phra, Amphur Muang, Khon Kaen Province during July to October 1997. The third experiment was carried out at Ban Phon Ngarm, Tambon Phon Ngarm, Amphur Komalasai, Kalasin Province during December 1997 to May 1998. The initial experiment was laid in a Randomized Complete Block Design (RCBD) with three replications. Peanut seed sizes were selected with the use of oval sieved screen of four sizes. That is 21.5/64 x 3/4 inch as large size, 18/64 x 3/4 inch as medium size, 16/64 x 3/4 inch as small size and the last one, the mixture of the three selected sizes. The plot sizes being used were 11.50 x 28 meters. Seeds being collected from the initial experiment were used in the second experiment and their sizes were chosen as that of their respective sizes in the plots. The second experiment was laid in a RCBD with four replications and the plot size being used was a 6 x 6 meters. The third experiment

from the second experiment and the layout of the experiment was a repeat of the second experiment.

The results showed that the sowing of seeds of different sizes had its significant effects on total dry weight per plant of Khon Kaen peanut cv.60-3 at days 56, 42 and 28 after emergence for experiments 1, 2 and 3, respectively. There after, there were no differences found throughout the final harvest.

Leaf area index (LAI) increased with an increase in the peanut plant age. During early growth period, leaf development was relatively slow and rapidly developed when the plants advanced in age with the LAI of 2.94 and 2.10 at days 70 and 84, after emergence for experiments 2 and 3, respectively. Nevertheless, these two season experiments were not statistical differed from one another. Whilst harvest index (HI) of experiments 1 and 3 were 0.27 and 0.28, respectively which were greater than that of rainy season experiment (experiment 2) which was 0.13. However, there were no statistical differences found with those varied sowing sizes of peanut seeds of the same season.

The sowing of differences in seed sizes had no effect on dry pod yields of the same season of the first, second and third seasons of growing the crop plants. Whilst that of yield components such as number of plants/harvesting area, number of pods/plant, number of seeds/pod and 100 seed weights, the results showed that there were no statistical differences found with all the three growing seasons except that of 100 seed weights of experiment 2. That is sowing of seeds with large seeds gave higher 100 seed weights than that of the smaller ones. Dry pod yields of Khon Kaen peanut cv #60-3 were ranging from 188-282, 254-326, and 300-375 kg/rai with the first, second and third experiments, respectively. The results also revealed that there were no statistical differences found among the various sowing seed sizes, seed proportions within their respective sowing seasons throughout the three sowing experiments.