ABSTRACT

Title : EFFECT OF PLANT DENSITY ON GROWTH AND YIELD IN RED KIDNEY BEAN LINES (Phaseolus vulgaris Linn.)

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Five red kidney bean lines namely ; MKS#2, MKS#8, MKS#9, MKS#10 and MOKCHAM were studied under three planting densities of 120,000, 160,000 and 200,000 pts/ha using Factorial in RCBD. The experiments were conducted at Maesamai Royal Project Station in early and late rainy season in 1996. The results showed that yield of red kidney bean lines planted in early rainy season were higher than those of the late rainy season. MOKCHAM, MKS#2 and MKS#8 gave yield of 2126, 2000 and 1835 kg/ha respectively, which were significantly higher than MKS#9 and MKS#10, yielding 1557 and 1463 kg/ha respectively. Yield of red kidney bean at higher planting density of 200,000 pts/ha, 1990 kg/ha, was higher than those of 160,000 and 120,000 pts/ha, which gave yield of 1744 and 1655 kg/ha respectively. MKS#2 and MKS#8 showed higher LAI of 1.86 and 1.66. Regardless of the red kidney bean lines, the highest LAI was observed at 55 days after planting at the densities of 200,000

pts/ha. The relationship between yield and LAI were positive with correlation coefficient (r) of 0.386, 0.399 and 0.319 at the age of 40, 55 and 70 days after planting respectively. This revealed that the increasing of LAI resulting in the higher yield.