2.5.1 Nawale Edah M. (1997). Effect of planting date and population density on grain yield of two varieties of mungbean (*Vigna radiata* (L.) Wilckzek.). (Supervisor: Dr. D. M. N. Mbewe).

The objective of the study was to investigate the effect of planting date and population density on grain yield of two varieties of mungbean (*Vigna radiata* (L) Wilczek). It was carried out at the Natural Resources Development College Farm (Lusaka) during the 1995/96 rainy season. A split-split plot design with whole units arranged as Randomized Complete Block Design (RCBD) was used. There were three treatments i.e. varieties, planting date and plant population density: two varieties, Kenya 1 and Accession 183407 were assigned to the main plots, three planting dates, 5/1/96, 19/1/96 and 2/2/96 were assigned to the sub plots; and four plant population densities 30cm x l0cm (666,667 plants per hectare), 60cm x 20cm (200,000 plants per hectare), 50cm x 10cm (400,000 plants per hectare), and 60cm x 10cm (333,333 plants per hectare) were assigned to the sub-sub plots. The main plot size was 281.35m^2, the sub plot size was 80.49m^2, while the sub- sub plot size was 9.60m^2. The parameters measured included: days to 50% flowering, days to physiological maturity, plant height, number of pods per plant, pod length, number of seeds per pod, 100 seed weight, grain yield (kg/ha) and grain protein content(%). The study revealed that all the three factors, variety, planting date and plant population density contributed significantly to grain yield. Accession 183407 yielded more (526.4 kg/ha), was earlier in maturity (65 DAP), and had a higher protein content (21.8%) than K-l, which yielded 284.4 kg/ha, matured later (70 DAP) and had a lower protein content (18.4%). Second planting date (19/1/96) gave the highest yield (543.0 kg/ha) across the varieties and plant population. The plant population of 666,667 plants per hectare gave the highest yield of 481.5 kg/ha across variety and planting date. The results led to the following conclusions; the optimum planting date is mid-January (19/1/96), while the optimum plant population is 666,667 plants per hectare.