



3.1.1 Mwansa Nicholas N. (1998). The effects of seed tuber size and spacing on yield, dry matter content and daughter tuber size in three potato (*Solanum tuberosum* L.) varieties. (Supervisor: Dr. M. S. Mwala).

A field trial was conducted at Mt. Makulu Research Station in Chilanga, Zambia to determine the effect of seed tuber size and plant spacing on the yield, dry matter content and daughter tuber sizes of three potato varieties. The trial was also meant to determine the combination of seed tuber size and spacing that would give highest economic returns. The varieties used were Up To Date, Baraka and Pentland Dell while the four seed sizes included 26-30 mm, 31-35 mm, 36-40 mm and 41-45 mm at two interrow spacings of 75 cm and 90 cm. Treatments were arranged in a split-split plot design with varieties as main plots, spacing as sub plots and seed tuber sizes as sub-sub-plots. The treatments were replicated three times. Results showed that seed size had no significant influence on the total tuber yield or on daughter tuber sizes in all varieties. Spacing at 75 cm produced a higher tuber yield (27.51t/ha) than at 90 cm (24.89t/ha). The percentage of larger tubers however was higher at 90 cm spacing where 35% of tubers were larger than 50 mm compared to 27% at 75 cm. Spacing at 90 cm produced tubers of higher dry matter content (19.04%) than spacing at 75 cm (17.73%). The largest seed tuber size (41-45 mm) produced tubers of higher dry matter content (18.83%) than the smallest seed size (25-30 mm) which gave a dry matter content of 17.76% across varieties. The highest economic returns were obtained using seed size 26-30 mm at a spacing of 20 cm x 75 cm.