



1.4.1 Nyoni Shenal S. (1996). The effect of rate and time of application of azolla on rice (*Oryza sativa* L.) grain yield. (Supervisors: Dr. C. Mwindilia, Dr. O. A. Yerokun and Dr. D. M. N. Mbewe).

This study was designed to determine the effectiveness of using azolla in rice fields and to investigate the appropriate time and quantities of azolla to be incorporated. The trial was conducted at the University of Zambia Field Station as a pot experiment. Three different quantities of *Azolla pinnata* at 4, 8 and 12 t/ha were used to check yield performance compared to urea at 60 kgN/ha and a control (no azolla, no urea). Four times of application i.e during transplanting (DT), DT and 42 days after transplanting (DAT), DT and 56 DAT, DT and 70 DAT were studied. The experiment was arranged as a randomized complete block design with three replications. There was a slight increase in rice yield with increasing quantities of azolla. The highest rice yield with azolla was obtained when azolla was applied at the rate of 12 t/ha (209 gm/pot), but this did not differ significantly from that obtained with azolla applied at the rate of 8 t/ha (203.52 gm/pot). Yield obtained with urea (60 kgN/ha) (217.11 gm/pot) was the highest. The lowest yield was from the control plants (130.44 gm/pot). The best treatment combination was when azolla at a rate of 12 t/ha was applied at the time of transplanting and 56 days after transplanting. This gave a yield of 261.27 gm/pot, as compared to a yield of 128.4 gm/pot under the control treatment. Other parameters studied were plant height, panicle length, tiller per plant, 1000 grain weight, days to 50% flowering, days to maturity and harvest index. From the study it shows that the use of azolla increases rice yield but not beyond that obtained with inorganic fertilizers also azolla can substitute inorganic fertilizer in rice cultivation.

