

Abstract

This study determined the effect of seeding rate and nitrogen fertilizer on performance of four wheat varieties Ngamia, Duma, NBW1, and Chozi at KARI- Katumani, Eastern province of Kenya in two seasons, 2005 and 2006. The experiment was laid out in a 4x3x4 factorial split-plot in an RCBD replicated four times. Seeding rates (SR) of 75, 100 and 125 kg/ha and nitrogen (N) rates of 0, 12, 23 and 46 kg N/ha were tested. There were variety differences in grain yield (GY), Cultivar Duma had significantly highest GY in 2005 and 2006, respectively. Increasing SR significantly increased plants/m², tillers/m², and spikes in cultivar Chozi.. There were significant yield differences due to SR, 125 kg/ ha gave highest GY of 1150.3 and 1175.7 kg/ ha compared to, 75 kg/ ha SR which gave lowest GY of 1018.7 and 1033.6 kg/ha in 2005 and 2006, respectively . N application increased the number of tillers/m²; spikes/m² and grain yield. The highest N rate of 46 kg/ ha gave the highest GY of 1176.7 and 1200.9 kg/ha compared to the control (0 N) yield of 1022.9 and 1039.7 kg/ ha in 2005 and 2006, respectively. No significant variety x SR, variety x N and N x SR interactions were detected. The study showed that application of N at 46 kg ha⁻¹ at the time of planting is beneficial to wheat crop. SR of 100 kg/ ha is appropriate to save on seed cost as there was no significant difference in GY between 100 and 125 kg/ha SR at Katumani. Wheat is a newly introduced crop in these areas and these results will benefit farmers as they diversify their crops to improve their incomes, food security and raise their living standards.