Abstract:

A study was conducted in the semi-arid Kibwezi division of Kenya to investigate the effect of moisture availability on nitrogen and phosphorus uptake by plants. The study consisted of four treatments i.e. control, grass, legume, and grass/legume mixture. These were replicated on two sites with different soils. On each site, two sets of treatment were set up whereby one was given additional water, whereas one remained unwatered. The experiment was conducted during the short and the long rains. CP and P contents were determined for each of the treatments and seasons. The CP content of plants generally decreased as they grew from vegetative to seeding stage. Watering had no significant effect ($P<0.05$) on the CP content of plants during the short rains. During both seasons, the legume component had higher CP content than the grass. The effect of watering on P content was only significant during the long rains. Overall, during the long rains, plants had less P content. There was no significant difference ($P<0.05$) in the P content of the watered plots between sites during the short rains season. Generally, the level of CP and P of grass and legume depended on the level of available nitrogen and phosphorus in the soil, as well as soil moisture content.