

ESTIMATION OF NITROGEN STATUS OF GRASS-LEGUME SWARDS UNDER FOUR N FERTILIZATION RATES

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The aim of this study was to estimate nitrogen nutrition index of pure lucerne and their three mixtures with grasses subjected to four different levels of nitrogen in three years duration. The experiments had a randomised block design with four replicates and eight treatments in experimental scheme. Examined treatments were pure lucerne crop and three different mixtures of lucerne and grasses in the same proportion (lucerne and orchard grass, lucerne, orchard grass and tall fescue and lucerne, orchard grass, tall fescue and sainfoin) and four nitrogen fertilization rates (0, 70, 140, 210 kg ha⁻¹). Pure lucerne achieved higher yield by 12.8% than their mixtures. Forage production was the highest at 210 kgN ha⁻¹ which was 14.6% more than treatments without nitrogen. Nitrogen uptake by the plant that received nitrogen fertilization was significantly higher than the plants without N. In all three experimental years control nitrogen treatment had satisfactory value of nitrogen nutrition index while other N treatments showed luxury consumption. Soil nitrogen reserves and nitrogen fixation when N was not applied, were sufficient to ensure enough biomass production. Any application of mineral N leads to accumulation of reserves in plant tissues.