



## agriculture & rural development

Department:  
agriculture  
& rural development  
**PROVINCE OF KWAZULU-NATAL**

# FERTILIZERS

## The Influence of Fertilizers on Intake of Annual Ryegrass by Dairy Animals

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Intake is an important factor in determining the performance of dairy animals on pasture. In addition the cost of fertilizer is an important consideration in the establishment of annual ryegrass pastures.

An investigation was carried out to assess the effects of fertilization on utilization (intake) of annual ryegrass pastures by dairy animals (Holstein-type lactating cows and heifers). Intake of grass by animals was evaluated by grazing small plot trials and measuring intake on individual plots. Treatments included varying rates of Nitrogen (N), Phosphorus (P), Potassium (K) and Sodium (Na). Rates of application of these nutrients ranged from sufficient to excessive, in terms of the grass requirements for optimum dry matter production. A wide range of N applications were imposed with monthly applications ranging from 20 kg N/ha to 105 kg N/ha.

In response to varying rates of N fertilization, grass protein levels ranged from <15% to >30%. For some of the season, there was a significantly lower intake of grass containing high protein levels. There was also evidence of lower intake of grass with containing low protein levels. In some cases grass intake increased significantly with increased Na fertilization. P and K had little or no effect on intake.

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