

Pecuária Sudeste

# INFLUENCE OF PHOSPHORUS, POTASSIUM AND LIMING ON YIELD OF TWO ALFALFA GENOTYPES

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## INTRODUCTION

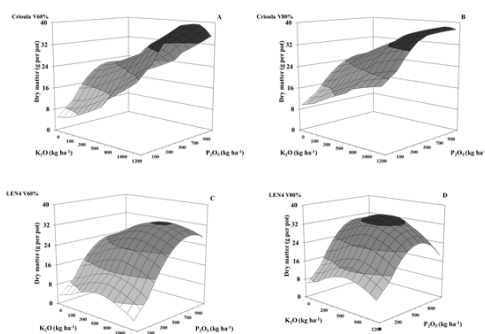
- Providing an adequate supply of nutrients is important for alfalfa production and is essential to maintain high quality and profitable yields.
- Lime, P and K fertilizers are the most common inputs for this forage in the high weathered, low-fertile and acidic soils of tropical region.
- Besides the potential of this forage on ruminant livestock system little is known in Brazil about the agronomic performance of cultivars and their nutritional requirements.

## OBJECTIVE

- Evaluation of the effects of combined lime and P and K fertilization on alfalfa and its impact on yield of two genotypes.

## MATERIAL & METHODS

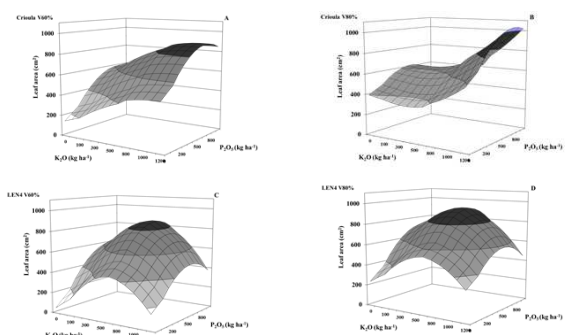
- ✓ Greenhouse study
- ✓ Alfalfa (*Medicago sativa*) inoculated with *Sinorhizobium meliloti*.
- ✓ Experimental design: 2x2x5x5 factorial randomized blocks.
- ✓ Treatments:
  - 0, 0,3, 0,9, 1,6, 3,2 g per pot of P as super triple phosphate (48% P<sub>2</sub>O<sub>5</sub>) = applied all at sowing ;
  - 0, 0,47, 0,94, 1,91, 3,78 g per pot of K as KCl (60% K<sub>2</sub>O) = applied after each cutting.
  - Two basis saturation levels V = 60 e 80%,
  - cv. Crioula and cv LEN 4
  - frequency of application: after each cutting (12 applications).
- ✓ Alfalfa shoot dry matter yield was evaluated when the crop was 10% of flowering.
- ✓ Data were tested for differences among treatments using analysis of variance and response function and equations were adjusted.



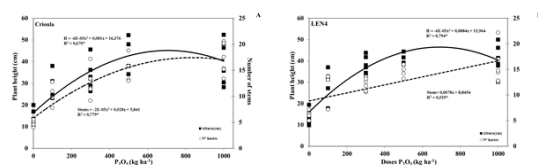
Dry matter production of Crioula (A) and LEN 4 (B) cvs.



LEN V60% Low P and K    LEN V80% High P and K    Crioula V60% Low P and K    Crioula V80% High P and K



Leaf area of Crioula (A) and LEN 4 (B) cvs.



Plant height and number of stems of Crioula (A) and LEN 4 (B) cvs.

## CONCLUSIONS

- Number of stems and plant height were affected by P fertilizer.
- Genotypes differed on dry matter yield and leaf area, and the best results were obtained with P and K at higher basis saturation levels.
- Crioula was the most productive at V=80% and did not presented response to K fertilizer at V=60%.
- LEN4 needed less K fertilizer to higher yield and presented lower decrease in production at V=60%.