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USE OF  $^{32}\text{P}$  IN SHORT TERM EXPERIMENTS WITH BEAN  
(*Phaseolus vulgaris* L.)

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Among the processes used to explain plant tolerance to Al toxicity we can cite the past accumulation of phosphorus by the plant and the use of this phosphorus later by the plant. To test for accumulation of P, an experiment using  $^{32}\text{P}$  was carried out to determine if there is a correlation of multiple regression analysis in six varieties which were formerly classified into different grouping with reference to Al tolerance.

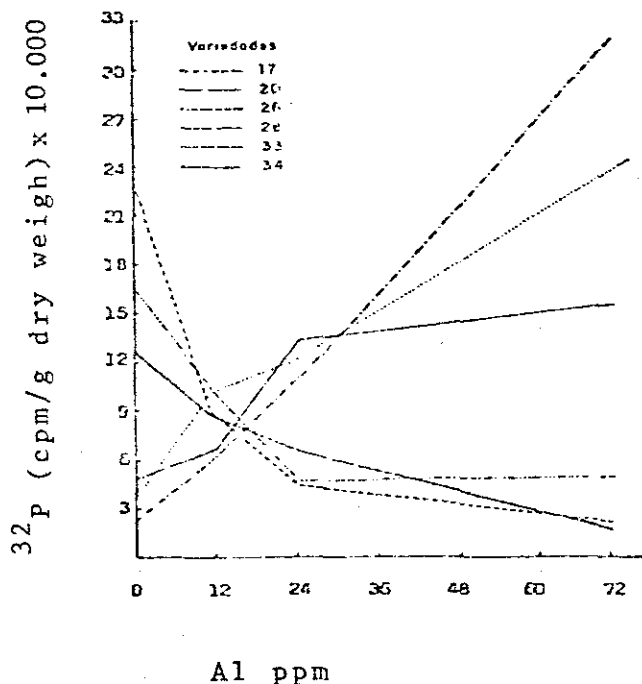
Bean plants, which were grown in a nutrient solution for 40 days, were washed three times and placed for 2 hours into a solution of water containing  $^{32}\text{P}$  with 2.5  $\mu\text{Ci/ml}$ .

The varieties used were:

Aluminium tolerant  
V20 - Mulatinho Paulista  
V26 - Ricobaio 1014  
V33 - Roxo 760

Aluminium sensitive  
V17 - Jamapa  
V28 - Rio Tibagi  
V34 - Tambo

The results of  $^{32}\text{P}$  absorption are shown in the following graph:

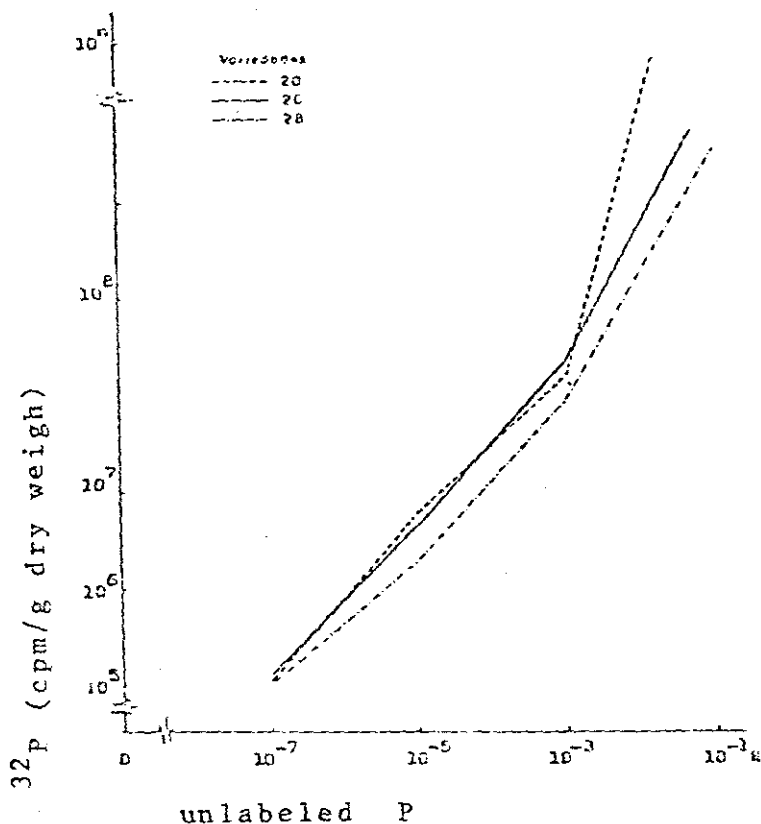


Short term experiments on the influence of Al concentration on  $^{32}\text{P}$  up-take showed differences in the reaction of sensitive and tolerant varieties.

Chopped roots showed to be the best parameter to classify varieties into tolerant and sensitive ones.

Another test was carried out using three varieties selected by the previous method to test the  $^{32}\text{P}$  absorption in presence of  $10^{-7}$ ,  $10^{-5}$ ,  $10^{-3}$  and  $10^{-1}\text{M}$  of unlabeled P during two hours and the results are shown on the following graph:

V20 - Mulatinho Paulista - tolerant  
 V26 - Ricobaio 1014 - tolerant  
 V28 - Rio Tibago - sensitive



The test was efficient in classifying sensitivity to Al. The tolerant varieties showed greater capacity to absorb P under the condition of both experiments.