

Sudy on the absorption of Fe, Mn, Mo and Zn, by two cultivars of pigeonpea (*Cajanus cajan*, Millsp) submitted to two doses of fertilizers, using the instrumantal neutron activation analysis method (INAA)

Ricardo M. Piasentin*, Maria José A. Armelin* , Odo Primavesi**, Mitiko Saiki*

*Supervisão de Radioquímica, Instituto de Pesquisas Energéticas e Nucleares - IPEN-CNEN/SP, São Paulo, Brasil

**Southeast Cattle Research Center - CPPSE/EMBRAPA, São Carlos-SP

In the animal nutrition area, the unbalance of minerals, deficiencies and excesses, in soil or forrage, can be pointed as one of the most important responsible for the low production and reproductive problems of ruminants in tropical areas. Animals depend on pasturages and water to obtain energy, proteins, vitamins and minerals to supply their physiological demands. Considering the climatic variability, there is a high disposability of forrages in the rainy period, but a low offer of food during the dry season, what results in lack of proteins, energy and some macro and micro minerals in this season. Providing high quality forrage to the animals, by means of grazing or its supply in feed bunks could be a way to compensate the lack in the cattle's diet. Pigeonpea (*Cajanus cajan*, Millsp) is an easy cultivation legume species, originated from Africa and adapted to brazilian conditions, which has been used as an economical source of proteins for ruminant supplemental feeding during the droughty period. However, despite the wide-ranging utilization of guandu, data about the composition of microelements and trace elements of this forrage species are scarce in the literature yet.

Samples of two pigeonpea cultivars, called G3 (EPAMIG 1822) and G36 (EPAMIG 1679), which were submitted to two doses of Fe-oxide (63%; 3 and 5 kg/ha), Mn-oxide (50%; 2 and 4 kg/ha), Mo-trioxide (59%; 0,1 and 0,2 kg/ha) Zn-hidroxide (70%; 3 and 6 kg/ha) fertilizers, applied individually, and harvested in two different times, were analysed by INAA. This paper has the purpose of verifying the influence of these minerals in the absorption of each element of interest by the biomass, compared to the test plants.

The results showed that just the younger plants of the cultivar G3 reacted positively to the Fe fertilizer, when compared to the test plants. The addition of Mn mineral fertilizer conduced to an increased absorption of Mn by the younger plants of the cultivar G3, in both fertilizer doses. In respect to the older plants of both cultivars, there was a tendency to decrease Mn absorption. The absorption of the fertilized Mo increased, in the cultivar G3 biomass, in both harvest times, at the higher dose. The cultivar G36 showed to be more reactive to the Mo fertilizer, showing a three time increase in the absorption by the older plant biomass, with the lower dose.

In the experimental conditions, the use of Zn fertilizer did not change the Zn absorption by both pigeonpea cultivars.

The instrumental neutron activation analysis method showed to be an adequate option to monitore these elements in plant biomass.

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