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Structural and available phosphorous dynamics in Brazilian Oxisols on a toposequence in high slopes

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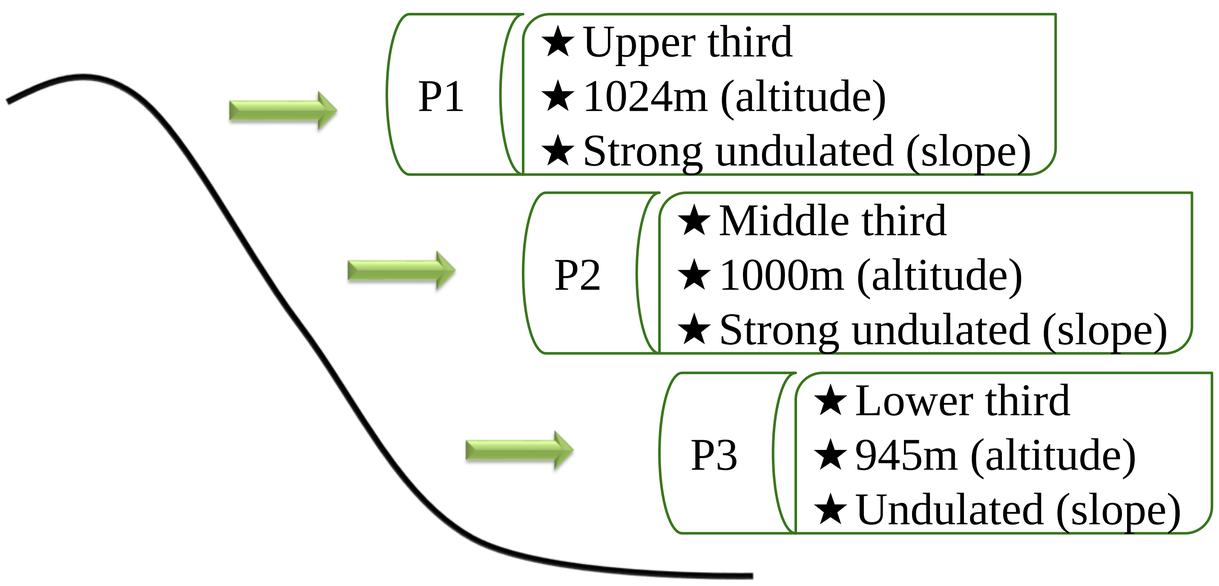
INTRODUCTION

In tropical soils the portable X-Ray Fluorescence (pXRF) spectrometer was a recent tool that promote soil elements content fast read, then it's easy to estimate soil minerals and fertility, find contaminants and so on, it can be used in laboratory or field analyses.

This equipment possibilities more accurate studies as for the pedological formation, morphology and chemical constitution. In Brazil the Oxisols are the most common soil class.The complete study is of Oxisols in right slopes, its nutrients and minerals dynamic, once rugged reliefs are expected in younger soils. Then this work aim to understand how is the behavior of the P in this toposequence.

MATERIAL AND METHODS

On this toposequence composed by Oxisols, localized in Muzambinho municipality, south of Minas Gerais, Brazil, it was analyzed phosphorous behavior. Three profiles were made in the toposequence, and collected the samples for pXRF and chemistry analysis:



The climate is classified as Cwb second Köppen.

RESULTS AND DISCUSSION

The P availability is conditioned by the O.M. content, since the pH was less variable, and the P structural had a similar behavior, being different only in P3-Bw, the higher found, follow by A (P2 and P3), the last were expected, while the O.M. is higher on the surface, but in the other hand, the higher depth content in the lower third is probably due the P leaching in the toposequence and following accumulation.

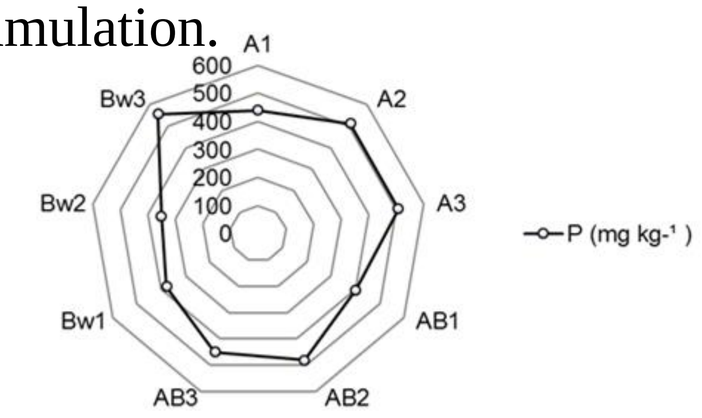


Figure 1: Structural phosporous analysed by portable X-Ray Fluorescence (pXRF) spectrometer. Muzambinho, south of Minas Gerais, Brazil, 2019.

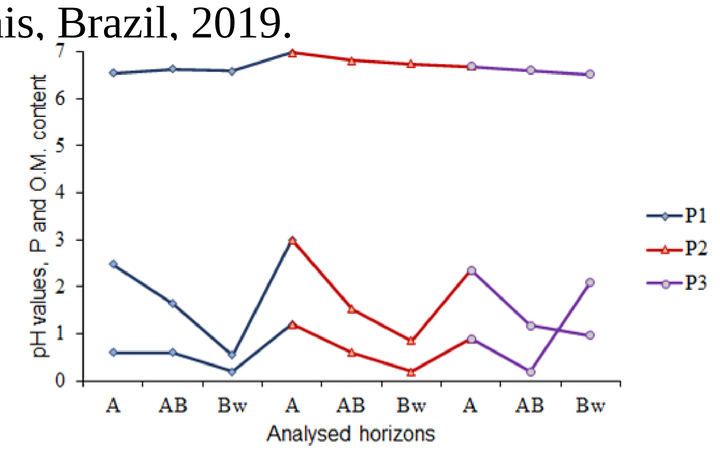


Figure 2: pH values, Phosphorous and Organic Matter content. Muzambinho, south of Minas Gerais, Brazil, 2019.

CONCLUSIONS

The P availability is conditioned by the O.M. content, and the P structural had a similar behavior. The total P leached in the toposequence and in P3.

ACKNOWLEDGEMENTS