

EVALUATION OF ZINC STATUS OF
SEVERAL ECUADORIAN SOILS

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A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

MASTER OF SCIENCE

Department of Crop and Soil Sciences

1974

ABSTRACT

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A short-term greenhouse cropping procedure was developed to evaluate the zinc status of soils. In this procedure, corn plants are grown in sand culture in such a way that the actively-growing roots can be placed in contact with a small volume of soil (100 grams) for two weeks. This results in an exhaustive removal of available zinc from the soil, and the zinc content of the corn plants gives a measure of the zinc status of the soil. In each cropping experiment, a standard soil known to be deficient in zinc is included to provide a means for comparison.

By using this technique to evaluate the zinc status of 10 Ecuadorian soils, it was determined that 3 of the 10 soils were possibly deficient in zinc. Therefore,

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field experiments are advisable at these locations to evaluate possible zinc responses.

Total zinc content of the soils was not related to the level of available zinc in the soils. However, linear correlation analyses indicated that any one of three methods of extracting available soil zinc (0.1 N HCl, EDTA, and DTPA) could be used to evaluate the zinc status of the soils. The results suggested that DTPA would probably be the most satisfactory extractant because of a higher level of correlation and because the use of this extractant can be more easily adapted to routine laboratory procedures.