

EFFECT OF HUMIC ACID AND SEWAGE SLUDGE APPLICATION ON SELECTED CHEMICAL PROPERTIES OF A CLAY SOIL

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INTRODUCTION

Organic matter and humic materials affect soil physical, chemical and biological properties greatly. Recently synthesis of humic materials as soil conditioners has increased. Producer of these materials claim significant improvement in soil properties as the results of application of these material to soil. The purpose of this study was to investigate the effect of application of increasing rates of one locally produced and one imported synthesized humic compound along with sewage sludge on selected soil chemical properties of a clay soil.

MATERIALS AND METHODS:

An incubation study was conducted with a completely randomized design with 24 treatments and 3replications. Treatments were control , sewage sludge (1, 2, and 4% weight bases), two types of humic acids (locally produced and imported) each in 1, 2, and 4% rates. Materials were mixed with two kilogram soil samples in pots kept for four months in a greenhouse at 60% of water holding capacity and 10-25° C temperature. After 4 month of incubation soil samples were analyzed to determine pH, EC, CEC, OM, P ,and K .

RESULTS AND DISCUSSION:

Results showed that CEC increased significantly by using 4% of sewage sludge and 2% of humic acid. Electrical conductivity (EC) and OM also increased significantly as the results of applying 4 % sewage sludge and humic acid. Available phosphorus was significantly increased by 2 % and 4 % sewage sludge .Overall results, however, showed that sewage sludge in 4% rate had a better effect in improving clay soil chemical properties.

Keywords: chemical properties of soil , sewage sludge, humic acid , clay.

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