

## Reaction of Triazine-Herbicides With Soil Components

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Triazine-type herbicides (atrazine, simazine prometryne, etc.) may persist in soil for extended periods and apparently are absorbed by clay and organic components of soil. These triazine herbicides are slowly decomposed by soil microorganisms. The research project includes (a) investigation of chemical and biological techniques of detecting certain triazine residues in soil and, (b) the nature of the chemical reactions between certain triazines and the colloidal components in soil.

Although the investigations have only been in progress for a short time the results thus far indicate that atrazine may be determined directly from a soil extract. Studies are now under way to determine if results obtained from a bioassay technique can be correlated to the atrazine level in the soil. Should such a correlation develop atrazine concentration in the soil and availability to the plant would be known. Also, one would be able to analyze for the triazine in an unknown soil sample and determine whether or not the next crop would be successful.

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## Transformations of Nitrogenous Compounds in Arizona Soils

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A major portion of fertilizer-nitrogen is not utilized by the crop to which it is applied because of (a) leaching of various nitrogen compounds from the root zone, (b) conversion of fertilizer nitrogen into plant unavailable organic forms and (c) chemical reactions of fertilizer nitrogen with soil colloids to form plant unavailable compounds.

This study was initiated to investigate the influence of organic residue and water management on the nature, origin and disposition of nitrogen compounds found in the soil solution.

The results of preliminary investigations indicate that significant amounts of N in the soil moves in an organic form, probably as microorganisms or their debris. Further study is in progress to determine the rate of entry of applied nitrogen into various soil forms.

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