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butyl esters are hydrolyzed  $\rightarrow$  very rapidly to the free acid. (one-half hour after spraying on foliage)

In alkaline media, 2,4-D exists as the carboxylate ion which cannot be extracted into organic solvents. Such anionic pesticides must be acidified prior to extraction.

nonionic - carboxylate ion (alkaline media)  
anionic - free acid (acid media)

2,4-D forms conjugates with naturally occurring metabolites which cannot be extracted with organic solvents unless the conjugates are first hydrolyzed with aqueous acid

The free acid of 2,4-D can be eluted with a strongly polar solvent.

• Adding a mineral acid ( $H_3PO_4$ ) to an aqueous solution of 2,4-D suppresses the ionization of 2,4-D.

What does this suggest:

In an alkaline soil -  $pH > 7$

leaching of 2,4-D will be greater

than leaching of 2,4-D in acid soils !!