

was recommended for six of the seven fields. However, the soil test P values from the 6 to 12 in. segments ranged from very low to medium, and suggest a grain yield response from P fertilizer applications.

Since P is relatively immobile in the soil, and with sampling of the soil being predominately from the top 6 in. of the profile for fertilizer recommendations, several questions arise: 1) "Should one rely on the 0 to 6 in. segment of the soil profile for fertilizer recommendations?" (Or, should the top 2 or 3 in. of each soil core be removed before compositing the samples for analysis?) 2) "Should P fertilizer be injected into the soil?" 3) "Will continued use of conservation tillage

practices intensify the stratification of P in the surface soil layers?" 4) "How do extremely "dry" or "wet" growing conditions affect the absorption of P by crop roots, and the crop's yield response to additional P applications?" and 5) "How will the recommendations of other plant nutrients be affected if a different soil segment is used than the traditional 0 to 6 in. soil core?"

Certainly, the awareness of the P stratification in Texas soils has necessitated additional field studies to answer some of these questions. **BC**

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Alberta: Canola Root Rot and Yield Response to Liming and Tillage

In this research, the effects of aglime were studied on conventional tillage and no-till systems. The aglime increased soil pH and nitrate-nitrogen ($\text{NO}_3\text{-N}$) in the top 8 inches of soil, but did not alter pH below 8 inches and had no effect on extractable phosphorus (P), exchangeable aluminum (Al), soil water, and ammonium-N ($\text{NH}_4\text{-N}$). Liming did suppress weed growth and reduced the severity of brown girdling root rot (BGRR). It also increased grain yield and dry matter production of canola.

Liming was effective in each tillage system, but was more effective with no-till. Tillage reduced both soil water and growth of canola. Reduced soil water...and increased weed populations...appeared to be responsible for reduced crop growth in the conventional tillage system. **BC**

Source: Arshad, M.A., K.S. Gill, T.K. Turkington, and D.L. Woods. 1997. Agron. J. 89:17-22.