

level) minus 8 ppm (starting level) x 4] = 40 lb of additional P needed per acre. Since fertilizer such as 18-46-0 is 46 percent  $P_2O_5$  and  $P_2O_5$  is 43 percent P, it would take the equivalent of about 200 lb of actual fertilizer material to raise the soil test level from 8 to 18 ppm.

Researchers only looked at short-term effects; it is likely that over a longer period, greater amounts of P would be “fixed” by the soil and more P would be needed to raise test levels. Data do not show what happens to soil tests over long periods of wetting and drying, freezing and thawing. Other research results indicate that the newly established soil test level would probably decrease somewhat for a few weeks or months.

In summary, keep in mind that all of the soils used in this study were from eastern Montana; the pH of each soil was greater than 8.0 (alkaline), and the lime (calcium carbonate level) ranged from 2.5 to 6.1 percent. Also remember that this study was conducted in the greenhouse under ideal conditions: plenty of water and all other nutrients were supplied abundantly. Under actual field conditions, other factors such as available water and temperature would probably limit yields

so that a continued response to P at very high rates would probably not occur.

### Observations:

- There does not seem to be any one soil test level at which response to fertilizer stops. However, when the soil test P level was above 30 ppm, the crops showed nearly no response to additional P additions.
- Two different approaches to P fertilization strategy can be seen here. They are: 1) build the soil test level and then supply only low amounts of P annually; or 2) maximize the return on each dollar spent on P fertilizer on your farm by applying higher rates of fertilizer on fields with low testing soils, and lower rates of fertilizer on fields with high testing soils.
- Finally, the value of a soil test for helping make wise P fertilizer decisions cannot be over-emphasized. **BC**

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## Information Agriculture Conference



The 1997 InfoAg Conference at the University of Illinois-Urbana attracted about 800 participants August 6-8. The three days of educational sessions and workshops featured more than 80 speakers and presenters. Over 50 exhibits displayed products and services related to precision agriculture. The 1997 event, organized by PPI and the Foundation for Agronomic Research, was the third Information Agriculture Conference. **BC**