Subsurface microirrigated corn plots are shown here in Virginia research.

to the irrigated treatments through the subsurface system. Boron was applied in four applications of 0.50 lb/A at weekly intervals in late May and early June. All other fertilizer and management practices remained the same. Average yields over the four years increased by 33, 34, and 19 bu/A for the three irrigated spacing treatments. This suggests that B may have been an important limiting factor in the first 4-year period. Further research is needed to confirm this response. BC

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Montana: Effect of Phosphorus Soil Test Level on Sorghum-Sudangrass Response to Phosphorus Fertilizer

Sordan 79 (sordan), an intraspecific sorghum-sudan hybrid, was the test crop in this greenhouse study. Three soils of different textures, cation exchange capacities, and calcium carbonate ($CaCO_3$) contents were used to test the response of sordan to phosphorus (P) applied to calcareous soils. Soil test P (bicarbonate-extractable) was adjusted to five initial levels, ranging from 2 to 60 parts per million (ppm). Fertilizer was applied at five rates, ranging from 0 to 80 lb/A.

Sordan response to P was linear at all soil test values below 30 ppm, but curvilinear above 30 ppm. However, soils with low soil test levels yielded less, even at the highest P rates, than those testing above 30 ppm and with no added P. Preplant and residual soil P levels increased with increasing P fertilizer rates. Researchers suggest that there are advantages associated with increasing bicarbonate-extractable P soil test values in those soils having excess $CaCO_3$ and pH values above 7.8. Maintenance applications of P appear to be necessary when P soil tests are 30 ppm or greater. BC

Note: A more detailed article on this subject will appear in a future issue.

Source: Bauder, J.W., S. Mahmood, B.E. Schaff, D.J. Sieler, J.S. Jacobsen, and E.O. Skogley. 1997. Agron. J. 89:9-16.