

**WSI Information Sheet #1 (March 2010)**

**Managing P Based on Soil P Saturation**

The table below has recommended P management strategies to maintain or return to phosphorus-saturation (P-Sat) levels below the critical level for P desorption (release) to water in contact with the soil. There is substantial research data indicating that the rate of release of P from soil to water (in contact with the soil at/near the surface) occurs at P-Sat values of 20-30%. The data show that the increased rate of release occurs at similar P-Sat levels across a wide range of soils. The table below relates P-Sat to soil test data based on the Virginia Nutrient Standards & Criteria (October 2005) and assumes a linear relationship between P-Sat and soil test P results.

<b>Recommended Phosphorus management strategy</b> (includes use of starter P)	<b>Phosphorus Saturation Percentage (P-Sat)</b>	<b>Soil Test P Parts per million (ppm)</b>	<b>Soil Test P Pounds per acre (lb/A)</b>
N based application but manage P to keep levels in this category	<20%	<60	<120
Crop P removal application no more than 3 out of every 4 years; no P in at least 1 year in 4	20-30%	60-120	120-240
No P application until P-Sat < 25% or soil test P < 120ppm or 240 lb/A	>30%	>120	>240

This approach may limit P application on most soils more than the current Virginia Phosphorus Site Index but it is not as restrictive as limiting application to agronomic P recommendations. It is likely that a more conservative approach to P management will be expected by EPA and/or the Chesapeake Bay watershed states in the future (as suggested in the report released by EPA on September 10, 2009). Managing fields based on the information above will better prepare farmers for future expectations rather than continuing to increase P levels on soils with greater than 20% P-Sat.

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**Note: Handy P conversions:**

$P \times 2.3 = P_2O_5$        $P_2O_5 \times 0.44 = P$        $ppm \times 2.0 = lbs/A$        $lbs/A \times 0.5 = ppm$