FACT SHEET

SOIL PHOSPHOROUS RETENTION INDEX

What is Phosphorous Retention Index?

Phosphorous Retention Index (PRI) gives a direct measure of the phosphorus sorption capacity in soil. Phosphorous is not chemically stable in the water soluble form in the presence of soil. The sorption of phosphorous into the soil particles results in less phosphorus being available for plants. Conversely, soil that is unable to adsorb phosphorus may lose phosphate due to leaching in high rainfall areas. The results of the PRI test can therefore assist in making better nutrient management decisions.

How is Phosphorous Retention Index Measured?

A soil sample is mixed with a solution containing phosphorous, and the solution is then incubated with agitation. The level of phosphorus present in the solution after the incubation period is then compared to the amount of phosphorus present in the initial solution. This difference gives the amount of phosphorus absorbed by the soil and is an indication of the PRI.

What do the PRI results mean?

A soil that is heavily depleted in phosphorous will absorb the phosphorous present in the incubation solution and give a resulting high PRI value. A soil that already contains adequate levels of phosphorus will not absorb phosphorous during the incubation period as the solution will be in equilibrium. A soil sample that contains adequate levels of phosphorous will give a low or zero PRI result. In general, sandy soils have very little adsorption capacity for phosphate and will give low PRI values. The heavier red/brown soils or clays that contain high levels of iron and aluminium oxides will absorb large amounts of phosphate and therefore give high PRI values.

Please note that the turn-around time for this test is 3 days. Contact your closest Winechek laboratory using the details below for more information.