

April 18th 2008

FOR IMMEDIATE RELEASE

PBI: What does it mean!

Farmers across the Wimmera/Mallee have either had their paddocks soil sampled or are in the process of completing them so as to assess each paddocks nutrient levels and consequently calculate their fertiliser requirements for the coming season. This year, phosphorus is an expensive input, so it is vital to know the amount of soil P available in each paddock in order to potentially save some money. Once the sample is analysed for potential available P, using Colwell P, the results can typically come back between 0 and 100ppm (or mg/kg). However, recent findings have found that this figure alone does not always provide an accurate value on the availability of P within the soil. Further work has found a method to improve the usefulness of Colwell P. This has been called the Phosphorus Buffering Index (PBI).

The PBI of a soil is by definition “the amount of P absorbed or desorbed per unit change in solution P concentration”. Basically the PBI gives an indication of the Critical Colwell P (CCP) value for crop growth on that soil type. PBI values can range between one and 800 plus (table 1), and to put it simply, it is a measure of the soils ability to “hold onto” phosphorus. A low PBI means the phosphorus within the soil is available to the plant; whereas a high PBI valued soil will quickly bind up P and make it unavailable for plant uptake. As a result, fertiliser rates may need to be lifted on soils with high PBI to compensate for the P that is unavailable.

Typically, for the soils around Birchip, BCG has suggested that P responses were unlikely when Colwell P is greater than 15ppm however this may not always be the case if a high PBI value is present. For example, if you have a PBI of 40 and a Colwell P greater than 15ppm then P responses to applied fertiliser are unlikely as the plant can make use of the phosphorus within the soil. However if the PBI is greater than 140, then P responses to applied P are likely if Colwell P is under 30ppm.

It is now standard practice that the PBI comes as part of the test when measuring Colwell P. The PBI will provide a better indication of how P maybe held or fixed by the soil. It is advised that if you have not already sampled your paddocks for P and are considering reducing P rates then don't take the risk – take a soil test. A simple Colwell P test costs \$27/paddock.

For more information contact BCG on (03) 54922787 or info@bcg.org.au

Table 1: Phosphorus Buffering Index

P Buffering capacity category	PBI Value
Extremely Low	<15
Very Very Low	15-35
Very Low	36-70
Low	71-140
Moderate	141-280
High	281-840
Very High	>840