MODIFICATIONS TO THE SOIL TEST REPORT & NEW PHOSPHORUS FERTILIZATION TABLE FOR POTATOES-2011

The Department has made a change to soil test recommendations for potatoes with regard to phosphorus. In the past, recommendations were based on the soil test value for phosphorus in parts per million (ppm) according to Table 1 below:

Table 1: Previous Phosphorus Recommendations for Potato (prior to Spring 2011)

Rating	Soil P Level	Soil P Content (ppm P)	Recommendation (kg P_2O_5/ha) Group I (Varieties other than Russet Burbank)	Recommendation (kg P_2O_5/ha) Group II (Russet Burbank)
L-	Very Low	<10	280	335
L	Low	11-19	280	335
M	Medium	20-39	220	270
M+	Medium High	40-58	160	210
H	High	59-78	110	140
H+	Very High	>78	97	114

It is well documented that in the acid soils found in Eastern Canada phosphorus is immobilized into a chemical complex with aluminum. However, as more and more phosphorus is added to the soil via chemical fertilizers, manure, etc, over time phosphorus levels may become excessive. Excess soil phosphorus that has not been absorbed by plant roots can then find its way into tile water and/or surface runoff. Therefore, a more environmental set of recommendations for potatoes was developed using the phosphorus to aluminum ratio expressed in percent. As this ratio increases, the recommendation for phosphorus decreases, see Table 2 below:

Table 2: New Phosphorus recommendation for potatoes according to the Phosphorus Saturation Index $(P/Al \times 100)_{M-3}$ (post-Spring 2011)

Phosphorus Saturation Index $(P/Al)_{M-3}$ (%)	**Recommendation All varieties (kg P_2O_5/ha)**
0-3.0	210
3.1-6.0	180-210
6.1-10	150-180
10.1-15	100-150
15.1-22	80-100
>22	60-80

The new recommendations were based on fertility trials conducted in New Brunswick and Quebec since 2000 and consultations with industry held during Winter 2010-2011. Note that there is now one recommendation for phosphorus that covers all potato varieties. In some cases there is a range of application rates to reflect producer requirements based on local knowledge of field productivity. In order to incorporate this information into the soil test report, some columns had to be moved around. CEC was placed under "Additional Soil Test Information" in order to find a place for % P/Al. As well, the "fertilizer rate" and "fertilizer analysis" have been removed. Fertilizer suppliers and/or consulting Agrologists should be consulted to determine which specific fertilizer blend to apply.

Secondly, some minor changes to report terminology have been made to update the form, such as:

a) The **"pH"** column has been renamed **"Soil pH"** as this is what the test represents : The pH is the soil pH in water at the time of sampling;
b) The **"Soil Index"** column has been renamed **"Buffer pH" :** Buffer pH is used to calculate the amount of lime to correct the soil pH.
c) A standard note will be added to the comments section of the form: **"The suggested fertilizers do not include credits from previous manure, green manures or other any sources of nutrients".**