PEI Analytical Laboratories
Soil Testing
23 Innovation Way
Charlottetown, PE
C1E 0B7
Tel: (902)-620-3300
Fax: (902)-569-7778
www.gov.pe.ca/agriculture/labservices

Determining your Fertilizer Mix and Rate

The amount of nutrients required for your crop can vary by field, and should be interpreted from your soil report on a field by field basis. Soil reports show the major nutrients (nitrogen, phosphate and potash) and micronutrients (ex: calcium, magnesium, boron, sulfur, etc.) required to grow a specified crop. The values listed on the soil report are related to the current availability of these nutrients within the soil, and can provide an estimate of the actual **amount** and **type** of fertilizer needed on that field.

From the soil recommendations given by field on your soil report, a fertilizer blend can be established that will supply the recommended amount of nutrients, using a minimum number of fertilizer mixes (avoiding custom fertilizer blends if possible for cost effectiveness).

Determining the Proper Fertilizer Mix

Determine the fertilizer ratio required using nitrogen, phosphate and potash values found under the REQUIRED APPLICATIONS section of your soil report (midway down the page of the report). On the report use the following method to form the ratio:

N : P205 : K20

Example: if N requirement is 110 kg/ha
P205 requirement is 230 kg/ha
K20 requirement is 120 kg/ha
The ratio is 110 : 230 : 120

Next find the smallest whole number that best fits the ratio. You may need to compromise a little. From the example above: 110 : 230 : 120 is close to 1: 2 : 1

Now find a common fertilizer mix that matches the ratio OR ask a fertilizer company to blend a special mix for you. For the above example a 10-20-10 fertilizer would be suitable.

Determine the rate needed using the following formula:

$$\text{Rate of Fertilizer (kg/ha)} = \frac{\text{N Requirement x 100}}{\text{\% N in fertilizer mix}}$$

Using the example where the N requirement is 110 kg/ha and the % of N in 10-20-10 mix is 10%:

$$\text{Rate of Fertilizer (kg/ha)} = \frac{\text{110 x 100}}{\text{10 \% N in fertilizer mix}}$$

To convert the application rate from kg/ha to 1b/ac use the following formula:

1b/ac = kg/ha * 0.9

From the example above: 1100 kg/ha * 0.9 = 990 lb/ac.

NOTE: On the PEI Soil Lab Reports, phosphorus and potassium levels are already reported in the oxidized form of phosphate (P_2O_5) and potash (K_2O), respectively. These are the P and K forms that are supplied in fertilizer mixes. If elemental levels are desired, divide the amount of P_2O_5 by 2.29, and the amount of K_2O by 1.2.

For information regarding fertilizer rate recommendations, contact a Nutrient Management specialist at the PEIDAF at (902) 316-1600.

(revised March 2014)