



FALL SOIL TESTING

An Important Step in Reaching Your Yield Goals

By Troy LaForge, P.Ag.

As we approach harvest it is important to begin the process of planning for next season's crop. With high levels of rain fall occurring over consecutive years there will be a change in the soil nutrient levels once again. One thing that is constant in soil fertility is change. As rotations continue to change and intensify, the fertility plan that we used in the past will likely not satisfy today's cropping needs. Soil testing should begin as soon as harvest begins to help understand what has happened with the land and its ability to supply next year's needs.

There are three steps to proper fertility planning; proper collection of the soil, proper lab analysis and finally proper consultation. Personnel collecting the soil must be properly trained in assessing appropriate areas for sample

collection. Samples should always be taken in a consistent manner to provide reliable data. Old yard sites, oil and gas well sites, east facing slopes and old field ridges are examples of areas the agronomist must stay away from. In gathering samples it is important that enough cores are taken to make a representative sample of the field.

An accurate soil test will play a key role in determining proper crop rotation as well as fertility considerations.

After samples are acquired the soil must be mixed down to as fine a consistency as field preparation allows. Rubber gloves are recommended to ensure the sample's integrity. Mixed and bagged samples should be put into a cooler for safe storage to minimize opportunity for artificial mineralization before the lab is to analyze it.

Laboratory analysis of macro and micro nutrients as well as

soil quality parameters is key to building a proper plan for next year's crop. Complete soil tests are necessary to accurately identify areas of improvement.

Complete analysis allows for identification of multiple key components to improve crop production. Once the lab analysis is completed it is key that the agronomist and producer have opportunity to review the findings and then begin working on next year's crop plan. An accurate soil test will play a key role in determining proper crop rotation as well as fertility considerations.

Soil testing on the prairies is gaining popularity as profitable growers are realizing the value of understanding the changes and trends of their land. Soil testing continues to provide one of the greatest returns on investment on an ongoing basis on the farm today. With trends towards higher fertility costs the return on investment continues to increase with time. Take time during this preharvest season to have your soil testing planned before the combines hit the field.

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Proper Use of Phosphate Essential to Early Season Development

By Eric Asare PhD

Adequate plant nutrition is essential for profitable canola production. Plants with high level of nutrients are able to withstand environmental stresses and pests. Early plant establishment and vigor also reduce plant vulnerability and contributes positively to high yields. After germination, nutrients for the young seedling are available in the soil either as applied by the grower or leftover from previous activities. Due to continuous cropping most agricultural lands in Canada depend heavily on application of fertilizers to obtain higher crop yields. Fertilizers that contain major nutrients for plant growth such nitrogen, phosphorus, potassium and sulphur have been used to achieve the desired results. Plants require other micro-elements including calcium, magnesium, zinc, iron, manganese and boron for healthy growth. Both the macro and micro minerals are applied either as bulk or staggered during the plant vegetative growth stage.

The Alpine phased nutrition program has been developed to help growers manage their plant nutrition at the right plant stage, soil and environmental conditions. Phosphorus is one of the macro elements needed for early seedling establishment by increasing root growth and development. Since phosphorus is immobile in the soil it is mostly applied to the seed thereby increasing its utilization by the young emerging seedling. Phosphorus applied to soil for plant use requires



Trial at bolting; A, is control (no phosphorus application), B is 5.0 gal/acre.



Root mass and plant structure A, is control (no phosphorus application), B is 5.0 gal/acre.

adequate moisture and time to break down into plant available orthophosphate. The Alpine seed-starter formulations are in liquid soluble forms and contain 70% phosphorus as orthophosphate.

In an effort to better understand various rates of Alpine seed placed starter liquid phosphorus fertilizer on Canola, a trial has been constructed to collect more information. With the assistance of Egert Agco, treatments of 3.0 and 5.0 gallons per acre were applied in comparison to no alpine seed placed

fertilizer. Seedling establishment, root growth and development and yield will be analyzed through the season and all information will be collaborated this fall. Observations thus far include differences in seedling structure including leaf surface area and root development. The 3 and 5 gal/acre treatments produced higher root mass compared to the control and granular phosphate treatments. Data will continue to be collected up to and including harvest for a more complete understanding of the effects of the Alpine Liquid Starter.

UYR™ is breaking new ground every day

RESEARCH

Look for more Ultimate Yield Research results in the November newsletter

Does Early Nodulation Increase Yield in Peas? By Eric Asare Ph.D.

Pea cultivation has increased over the years in southern Saskatchewan due to many factors such as favorable weather conditions, less diseases, need for crop rotation and good market prices. Adequate nutrition as well as efficient inoculants are required to achieve high yielding pea crops. Nitrogen is made available to plants either through straight application (used with non-nitrogen fixing plants) or by relying on the symbiotic association between rhizobia and leguminous crops. Nitrogen required for successful pea cultivation relies on using inoculants that are capable of initiating early infection, nodulation and nitrogen fixation even under less favorable soils conditions. Many rhizobia strains have been found with most of them genetically engineered to meet specific desires. Two popular pea inoculants on the market are currently using *Rhizobium leguminosarum* biovar *viceae*.

Rack Petroleum is examining two different inoculants, one of which is reported to have LCO (Lipo-chitoligosaccharide) promoter technology which is a natural biological signal that aids in faster nodulation even under adverse weather conditions. Data on



“Nodulation in A was mostly on the taproot and the root hairs whereas nodules in B were prevalent on root hairs. Nodules on the control plants (C) were small and shriveled compared to those in A or B.”

days to nodule initiation, nodule number per plant prior to flowering, nodule dry weight and Nitrogen accumulation at full flowering is being collected. As well, number of pods/plant, pod weight, number of seeds/pod and total yield will be observed for each inoculants and the untreated check.

Preliminary results have been quite interesting as shown in the graph (above/below). Inoculant A produced significantly earlier

nodulation than inoculant B and continues to rate higher on total nodule/plant counts. As well, nodule distribution and incidence appears to differ between the inoculants. Tissue samples are also showing an increased level of nitrogen in the plants treated with inoculant A. Observations will continue to be collected until and including harvest and will be published in the fall of 2012. Stay connected with the Rack Ultimate Yield Machine to get full trial results and information.

Not All Dessicants are the Same By Rachel Redlich

With the 2012 harvest just around the corner most farmers are deciding on how they are going to get their crops into the bin. When looking for quicker and more even crop dry down, and control of late season weeds, dessication is an excellent option. Dessication will not increase the rate of maturity, but instead kill the plant at the stage it is in at time of application. Farmers have several dessicants to choose from including diquat (Reglone) and glyphosate.

A common product used for dessication is diquat (commonly known as Reglone). As a group 22 contact herbicide, diquat will have activity on any vegetation it is applied on. The mode of action used in diquat causes the drying process to be quick on both the weeds and crop. diquat is a photosensitive product and as such application in the sunlight will cause immediate activity which does not allow for the product to move through the plant effectively. Even at high water volumes some parts of the plant may not be contacted

which can further reduce the activity of the herbicide. Because diquats work at the main site of photosynthesis, adequate movement of the herbicide into the plant is essential. Application in the dark will allow the active ingredient to move farther into the plant tissue and thus have increased activity. When more of the active ingredient is present at the site of photosynthesis, the activity of the herbicide will be more effective. To get the most out of a diquat application the best time to spray will be in the evening or in cloudy conditions.

Seed that has been dessicated
with glyphosate will have poor
germination.

The mode of action of glyphosate is much different than diquat (Reglone). Glyphosate is a group 9 herbicide which disrupts aromatic amino acid synthesis in the plant. Unlike diquat, glyphosate is readily translocated

through the plant and is most effective when the plant is actively growing. Due to the mode of action however, glyphosate takes one to three weeks for dry down under normal conditions and three weeks or more under very cold and cloudy conditions. Crops that have been dessicated with glyphosate should not be used for seed the following year. Because of the ease of translocation, the glyphosate can move into the seed, especially if the seed has not reached full maturity. Seed that has been dessicated with glyphosate will have poor germination and plant health and emergence will be affected because of the damaged seed.

Dessication is a good option for farmers who want to have a quicker dry down of their crop or have late season weeds to control. Both diquat and glyphosate are common options that can be used on a variety of crops as dessicants. For more information on crop dessication, visit your local Rack Petroleum retail location today.



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About Us

Rack Petroleum Ltd. is an independently owned and operated agricultural input business that has evolved to excel at supplying farm customers with a range of inputs as well as unsurpassed agricultural advice and recommendations.

Our mission is to transfer technology to our customer while striving for excellence in our product and service offerings safely and profitably, at a price that can be customer attractive and measurable for the value received through operational efficiency and excellence.

Rack is one of the only independent retail families that offers every fertilizer type; anhydrous, dry, and liquid products. Rack also works closely with farm customers to offer full service 24/7 fuel delivery priced on the open market. The company has shown tremendous growth as a result of its employee commitment to work hand in hand with growers to provide daily solutions in every aspect of farm production.

The company prides itself in being able to assist the customer in determining the solution to their unique situation, and deliver the required product or service to the farm or field. The Rack can discuss a problem, create a solution, and supply, deliver & custom apply the inputs to provide the solution, all in a timely manner.