Forage Advisor

TerraLink Horticulture Inc.

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Fertilizer Technology

Avail Phosphate Stabilizer

New from Simplot, **Avail** has been designed to improve phosphate efficiency and thereby save you money. With the very high cost of phosphate fertilizer in the last year or so, this technology is all the more important. Applied to phosphate fertilizer during blending, **Avail** coats the particle with a chemical "shield" that is water soluble, season-long but biodegradable, non-toxic and leaves no environmental "footprint".

Normally, most soil-applied phosphate becomes instantly subject to fixation by ions such as iron, aluminum, calcium and magnesium. This means most of the expensive phosphate fertilizer you apply to your soil gets tied up right away and therefore not available to your crop. It is more or less a long term theft of your money by the soil, and there has been nothing anybody can do about it. Now, it has all changed.

Once applied to phosphate, **Avail's** water soluble chemical shield expands outward, temporarily sequestering ions of Fe, Al, Ca and Mg, removing these ions from the soil solution and effectively taking them out of the game. The result – much more phosphate is now available for uptake by your crop. **Avail** increases plant available phosphate through all early stages of plant growth and development, the time most important for affecting yield potential.

The result: more phosphate available to your crop, more of the expensive fertilizer put to good use, more profit for you, less loading of the environment with unused phosphate.

Avail can be used with either granular or liquid phosphate. Ask about Avail at TerraLink Horticulture, where you find technology on the leading edge.

Plant Nutrition

Manganese Physiology

Over the last couple of years there has been an increase in interest in manganese nutrition. Let's review the importance of manganese (Mn) to plants in relation to the forage crops of the Fraser Valley.

Manganese is taken up by plants primarily as the cation Mn^{2+}. Within any plant, Mn is used as part of various enzymes, is involved in photosynthesis and root growth, and is important in nitrogen fixation in legumes (peas, alfalfa, vetch). Since silage corn and forage grass aren't nitrogen fixers, for this discussion the most important roles of Mn are in enzymes having to do with the metabolism of carbohydrates, and in other biochemical reactions with ten dollar names that are really only exciting to a plant physiologist. Suffice it to say, like other micronutrients, Mn is very necessary to the growth and development of plants, but also required in very tiny amounts.

In our soils, manganese (being a positively charged cation) is retained on cation exchange sites in clay particles, and can also be found in organic matter complexes, as soluble Mn and in manganese-containing minerals. In our acid soil conditions native to the Fraser Valley, Mn is relatively available, only precipitating out at high pH levels. When other micronutrient metals are at high levels, Mn deficiencies may be encountered.

Our experience shows that Mn soil test results are often in a range of normal to sometimes deficient. From the point of view of silage corn and forage grass crops, it is reasonably unlikely that the addition of Mn will demonstrate a response in either growth or development, even with slight deficiencies. However it would be unwise to allow your soils, especially those with coarse texture, to become very deficient simply because of the important role manganese plays in biochemical processes within the plant.

References:
http://www.ctahr.hawaii.edu/mauisoil/c_nutrients04.aspx
Tisdale, S. L. and Nelson, W. L., Soil Fertility and Fertilizers, Macmillan Publishing. New York, 1975.
Salisbury, F. B. and Ross, C. W., Plant Physiology, Wadsworth Publishing Company, Inc. Belmont, Ca, 1978.

NEW!

GPS Equipment and Software for our Terragators

TerraLink has improved its custom spreading service by adding GPS to its Terragators.

New for 2009, now our Terragators have been equipped with GPS hardware and software. Using a Trimble guidance system, we can now improve the precision with which we custom spread your fields, thereby assuring you of a better spreading job and more consistent crops. The benefit to you is reduced misses and overlaps. The benefit to TerraLink is improved efficiency.
The system helps our already experienced operators

drive more accurate spreading patterns in your field, regardless of dust, mist or dusk. The software interprets downloaded positional data from global positioning satellites for better accuracy with an error potential of only six inches, pass to pass. A record is kept from every order which details the exact acreage covered, job duration with start and finish times, and elevations. A map can be printed showing precisely where the spreader drove and turned. Elevations are marked in various shades, giving you the customer a permanent record of the high and low spots (please note that elevation data is not as accurate as location data, and as such, should not be used for leveling or drainage issues).

Toxic Weeds

Water Hemlock

Although it is related to parsley, Water Hemlock *(Cicuta douglasii)* is one of the most poisonous plants in our region. It thrives in wet places such as riparian zones and poorly drained areas throughout BC, and should be watched for in wet pastures. It is a large, robust plant that grows up to about two meters and has hollow, jointed stems. The leaves are shaped like a long oval and are coarsely saw-toothed. The flowers are small and white, borne in clusters. A distinguishing feature is an enlarged or bulbous taproot, which has hollow chambers containing an extremely dangerous toxin called cicutoxin. Another similar plant, Cow Parsnip, does not have saw-toothed leaves, is a larger plant and does not have a bulbous root.

As is the case with many noxious plants, generally stock animals will only graze Water Hemlock if other plant material is sparse. Thus animals are in the most danger in wet pastures that have been over-grazed. Poisonings have been reported in early spring on the young shoots when there is little other pasture growth, or in the fall when the poison-containing roots are easily pulled from the ground. Cases have occurred with horses, cattle, sheep, goats and bison, however because of their pulling action cattle are the most susceptible. When poisoned, animals can succumb very quickly; within 15 minutes or so. If found alive, symptoms such as convulsions, frothing, and clamping of jaws may be evident. A veterinarian should be contacted of course, however apparently no specific antidote exists.

Chemical control is available, but since there is normally a sparse population when Water Hemlock is present, it makes more sense to manually pull the plants. Dispose by composting. Do not leave dead plants lying where they were pulled, especially if they are past flowering. Make sure to wear gloves, long sleeves and eye protection when handling the plants.

References:
Western Producer, July 31, 2008. Article by Roy Lewis, DVM.
http://www.agf.gov.bc.ca/cropprot/weedguid/waterhmlk.htm