



421 Birch Bay-Lynden
Road
Lynden, WA 98264
(360)354-3577-office
(360)354-1917-fax
www.elenbaasco.com

The Berry Good News

Volume 1, Issue 4

May, 2009

Our "Berry" Field Staff:

Gary Hertel
Manager/Field Representative
(360)815-4853

Steve Groen
Field Representative.
(360)815-4328

Jerel Kratt
Contracted Agronomist
(360)410-9125

On the Horizon:

- **Weed control; watch for grasses on new plantings**
- **Drip line clean-out; check for leaks**
- **Actagro drip program**
- **Bring in bees**
- **Scout for weevils, mites, and rust in rasp's.**
- **Bloom sprays in blues: Fungicide (Pristine, Switch, or Elevate), Monarch, Calcium, Boron, Resist**
- **Pre-bloom and bloom sprays in rasp's: Monarch, Calcium, Boron, Resist.**

(Please see your crop advisor for specific recommendations for your situation. No guarantee is written or implied in this newsletter. Always follow manufacturer's label.)

Which is it? Spring, or Winter?

This has been one odd season! As this is being written, spring just turned back to fall/winter. A large storm just blasted through the region, bringing rain, wind, downed trees, and even some power outages.

Many are aware that this season is later than "normal." The good news is that the warm weather in last two weeks helped us pull ahead of last year's heat units. (A current degree day chart can be found at www.ovs.com/wxafe/2009_day_degree_chart.htm).

One "schedule-related" question that we are sometimes asked is: "why

should I do drip-injections early in the season, before my dry fertilizer?"

If you are a customer on the "full program", you know that we have specially timed drip or soil-drench applications at specific stages of plant growth. Many who applied a standard dry fertilizer mix earlier this spring could walk out in the field and still see it there a month later. Also, large use of dry fertilizers over many years can create salt problems in the soil, especially with blueberries.

Our programs, however, are designed to provide nutrients to the soil solution—especially phosphorous and

micro-nutrients, which are not very soluble in cold-wet soils—in a protected form so that they are available to the roots when they need them. Studies show that conventional phosphate fertilizers can take weeks to break-down in the soil, and are only 5-15% available to the plant because of tie-ups with iron, aluminum, clay, calcium, or organic matter.

We believe that our programs are more efficient and effective. Agronomists, Universities and Ag-Extension Agents around the world are now promoting this technology. "When" you should apply is as important as "what" to apply.

Up Close: Yellow Spider Mites

Entomologists and crop consultants have noted that the Yellow Spider Mite, Latin name *Eotetranychus carpini borealis*, has become a major pest in raspberries in our area. They are smaller than the two-spotted mite, and are more pale in color. When



Feeding damage on Meeker raspberry leaf from yellow spider mites. Photo by M. Bounfour

they feed on the plant they reduce plant health greatly, and can cause the leaves to become mottled, brown, and drop prematurely.

Yellow mites caused a lot of damage last year, and it is important to be looking for them early. The females overwinter in the bark and emerge in the spring and begin laying eggs. One life cycle from egg to adult completes in just 1 to 3 weeks. In the summer there are 8 to 10 generations. It is important to use Integrated Pest Management techniques and carefully select pesticides so as to not kill all



Yellow spider mite is in circle. Photo by M. Bonfour

the beneficial predator mites. Common miticides in raspberries include Brigade/Capture, Acramite, Savvy, and Vendex. See your crop consultant (Gary, Jerel, or Steve) for more information and specific advice.

421 Birch-Bay Lynden Rd.
Lynden, WA 98237



Focus on Fertility: Phosphate (P)

Phosphate is a major crop nutrient and has many roles. In acid soils, it is usually tied-up with iron and aluminum and is unavailable. Early-season phosphate is important for root development and nutrient translocation, and is a catalyst for photosynthesis and metabolic processes, but cold/wet soils don't release phosphate when it is needed most. According to Dr. Thomas Reuhr, head of the Earth and Soil Sciences Department at Cal Poly San Louis Obispo, "Phosphate is the second most limiting nutrient after Nitrogen. Increased phosphate increases crop yield. Absorption of all other nutrients increases with an increase in phosphate. Plant concentration of nutrients increase by 10 to 25% with drip irrigation and adequate phosphate." According to Dr. Arden Anderson, Crop Consultant, "Phosphate is needed for proper nutrient transport and assimilation, but its most important function is that of energy transformation in photosynthesis to produce plant sugars. A good rule of thumb is that the higher the phosphate content, the higher the sugar content, and, correspondingly, the higher the mineral content." Elenbaas has an excellent organically-chelated phosphate product called Structure[®]. Adequate amounts applied early to the soil is a large part of our successful berry program.

Facts on Foliar Feeding

Did you know that foliar fertilization is not a new phenomenon? It actually has been around for over 100 years (Follett, et.al, "Fertilizers and Soil Amendments", 1981). The first foliar products were made from various salts and sulfates, and over the years the technology of keeps getting refined. Today, we have a variety of high-caliber foliar nutrient products.

It is well-known that nutrients can be absorbed through plant leaves as well as through the roots. In some situations, foliar-applied nutrients, especially micro-nutrients, are more readily available to the plant than are soil-applied nutrients.

According to the Western Fertilizer Handbook (8th edition), foliar feeding "has several potential benefits, including:

1. Supplying nutrients during periods of peak demand when an immediate response is desired.
2. Supplying certain nutrients, such as zinc, when soil or crop conditions are not conducive to root uptake.
3. Precise timing of nutrients related to quality characteristics to the crop being grown."

Foliar fertilization should take place during periods of low temperature and

high humidity, such as early morning or late evening. Dilution, pH, and nozzle type are very important variables in good foliar fertilization. However, sprayers are almost always set up optimally for pesticides: usually, an acidic pH and higher application rates (e.g., 100 gpa) and nozzles for deep penetration. Typically, optimum foliar nutrient sprays should have a near-neutral pH, lower application rate (e.g., 50 gpa), and a fine mist covering the leaf surface. Since proper pesticide applications are critical, it is even more important to make sure that the nutrients are actually getting absorbed into the plant. Product performance matters!

Elenbaas sells various foliar products, including 20-20-20, Ureamate 5-10-27, and Monarch[®] 2-20-15. We had really good feedback from several raspberry growers who switched last year from 20-20-20 to Monarch[®] 2-20-15. Monarch[®] is a highly-refined product with organic acids designed to quickly penetrate the waxy surface of the leaf and are rapidly absorbed by plant cells. The liquid plant nutrients in Monarch[®] are highly buffered by organic compounds to prevent leaf and blossom damage normally associated with

foliar nutrient application. Because it has a lower nitrogen content and has quickly-absorbed forms of phosphate and potash, we believe it helped improve fruit quality. Growers who did side-by-side treatments last year said they saw an improvement in fruit quality.

The amount of potassium and phosphate in 1 gallon of Monarch[®] is equivalent to 8-10 pounds of 20-20-20, before discounting for absorption performance. Given the high absorption of Monarch[®], it becomes a very *economical* choice!

On the left, a leaf under the microscope that was sprayed with 20-20-20 ; notice the film residue indicating poor absorption. On the right, a leaf sprayed with Monarch[®]. Notice that there is no residue, indicating better absorption.

