

# Vegetable Advisor

A TerraLink Technical Advisor

Sweet  
Corn Edition:  
Part 2

May 2018

## Plan Ahead

### Corn Weed Control

For vegetable growers, sweet corn is a good rotational crop because there are a number of products that can be used in corn that also help break the weed cycle. However, weed control in early plantings can still be challenging as the weather can limit the number of opportunities to enter the field prior to planting. In turn, the use of floating row covers also increases the amount of work required when applying post emergent herbicides and strong pre-emergent herbicides should be used within these fields to reduce weed build up early in the season.

Take care when applying herbicides within any given field, as the plant back intervals (and danger of herbicide carry over and injury to following crops) may impact what crops can be planted within the field in following seasons (as corn fields are usually not double cropped in the Fraser Valley).

While there are a number of products available for pre-emergent weed control within corn plantings, the 2 primary options for broadleaf weed control are either Integrity or Aatrex plus Dual II Magnum applied shortly after planting. Prior to tilling apply glyphosate to control tough perennial weeds, as required. After 7 to 14 days plow and prepare the field, then wait 4 to 7 days before planting so that weed seeds at the soil surface can germinate. Plant the field without any further tilling, and either just before planting apply glyphosate again or after planting apply Reglone / Desica (diquat) herbicide. These applications can potentially be combined with pre-emergent herbicide application.

Research work in Ontario found that weed competition during the 3 to 8 leaf over stages

of growth (V1 to V6) within corn plantings significantly reduced yield; later weed competition did not impact plant growth; however, it can impact picking operations, certain weeds may also serve as an alternate host for pests.

As sidedressing (and potentially cultivation) does not usually occur until roughly 8 leaves over (V-6), weeds must be controlled well in advance of sidedressing or the harvest will be significantly reduced. Note that many herbicides labels recommend waiting at least 1 week between herbicide applications and cultivation, so the latest post emergent herbicides should be applied is roughly 6 to 7 leaves over (V-5), if significant weed problems are present, then weeds should be controlled even earlier than this timing.



Monitor for weed emergence after planting, most post emergent herbicides are best used on small, 1 inch high, weeds, and production will be impacted well before heavy weed infestations are noticeable. Prior to applying herbicides, determine which weeds are present in the field as different products are more effective on different weeds. Again double check the plant back restrictions prior to applying any herbicides, along with the Pre-Harvest Interval (PHI). See the labels and additional information on the herbicides to determine the best options. For broadleaf weed control Pardner and Basagran can be used with little concern about herbicide

carry over. Impact with Atrazine can be used safely on all sweet corn varieties when grass control is also required, but it does have longer plant back restrictions. Accent can be used on some sweet corn varieties when grass control is required but some varieties of sweet corn can be injured by Accent.

Compared to most field vegetable crops there is a fairly broad list of herbicides available for use in sweet corn and a number of different timings. If you wish to know more about other herbicide choices, ask our Sales Desks, Abbotsford at 800-661-4559, or Delta at 604-946-8338.

## Plant Nutrition in Corn

### Potassium Deficiency

This seems an appropriate time to talk about potassium deficiency in sweet corn. Potassium is a macro nutrient, required by all plants in considerable amounts, along with the other two macro nutrients, nitrogen and phosphorus. While we know that, in general, potassium is important to photosynthesis, strong stems, disease resistance and fruit quality, it will be helpful to also know that in sweet corn, potassium is required to produce tall plants with large leaves, prompt tasseling and silking, and to minimize lodging. How do we recognize whether our corn is deficient in potassium?

There are several symptoms to indicate whether potassium is in a deficiency. The best known such symptom is a "scorched" appearance of the outer edges of corn leaves, especially the oldest leaves. Meanwhile, the midrib, or leaf center, remains green. This is typical for grassy plants. In broadleaf plants,

this sometimes gives the appearance of a green “Christmas Tree” shape in the middle of leaves that otherwise have gone crispy-brown on the edges.

As mentioned above, sufficient potassium results in nice, large leaves. When potassium is deficient, leaves can be considerably smaller. Of course, this is a hard one to visualize, unless you are making a side-by-side comparison with non-potassium deficient plants.

Slow development is a noticeable symptom of potassium deficiency in sweet corn. It can result in delayed tasseling and silking. Most farmers choose varieties with the highest possible heat units; wise as the longer the heat units, generally the greater the yield. These varieties push the boundaries, maturing just in time at the end of the year. That means the highest quality cobs, filled all the way to the tips, and the highest yield. If development is delayed, due to potassium deficiency or other reasons, you won’t obtain the maximum tonnage or quality from your corn.

Another symptom of potassium deficiency is early and increased lodging. Work done by the International Plant Nutrition Institute (IPNI) has shown that low potassium is a cause of increased lodging for a couple of reasons. Stalk weakness and breakage is related to a high N:K concentration in the stalk. This can commonly occur if producers over-fertilize with nitrogen without paying enough attention to soil tests that might show low potassium. The result is a breakdown of the pith of the brace roots. This weakens the plant, and over it goes in breezy conditions. Also, low potassium has been shown to increase the severity of fungal disease which can also cause lodging.

Scorching of the leaf margins is usually the best-known and the first indication of potassium deficiency in sweet corn. Regardless of which symptom though, it is usually a case of trying to close the farm gate after the cattle have escaped. You can’t easily increase potassium after the symptoms have begun to appear. The best remedy is to plan well, get a soil test done early, and make sure enough potash fertilizer is applied prior to planting.

#### References:

*Visual Indicators of Potassium Deficiency in Corn.* Murrell, T. S. *Better Crops*, Vol. 94 (2010, No. 1). | *Soil Fertility Manual.* IPNI, 2006.

## Genetics

# Sweetness in Corn

Sweetness in corn results from a combination of genes. To keep it simple, we will not only use our layman’s definition of a gene, we will restrict the discussion to the three main genes that affect sweetness.

#### The Sugary Gene:

When a variety of sweet corn is thought of as having “normal” sweetness, it is a result of the Sugary gene, known to plant breeders as su-1. This gene increases the amount of sugar in the developing ear of corn. Varieties that are Sugary should be cooked and consumed quickly, as the sugar will convert to starch fairly rapidly following harvest.

#### The Sugary Enhanced Gene:

The Sugary Enhanced gene, known as the se gene, works together with the Sugary gene when both are involved in a variety. Sugary Enhanced varieties tend to be more tender and creamy. Such varieties have a higher maltose level as opposed to sucrose, which in part gives Sugary Enhanced varieties their unique flavor. Sugary Enhanced varieties will stay sweeter longer than Sugary varieties.

#### The Supersweet Gene:

Varieties with the Supersweet gene are known in plant breeding lingo also as shrunken-2 or sh2 varieties. This strange name is based on the fact that Supersweets have shrivelled seed kernels. When a variety is a Supersweet, it is very sweet, and the niblets are thought to be more crisp. Supersweet corn will retain its sweetness longer than both Sugary and Sugary Enhanced varieties.

The specialized genetic packages of sweet corn has implications for production. Varieties that are su-1, se and especially sh-2 must be “isolated” from all other varieties of any corn – sweet, silage or grain corn. This doesn’t mean one must grow shrunken-2 corn in Pemberton! If you cannot avoid planting two varieties of sweet corn in the same field, make sure you avoid planting one down-wind of another, and plant at least 100M away. Also, you can isolate in terms of time as well as distance. The pollination period is the key. If in doubt, ask your seed supplier, or a consulting agronomist for advice.

## Safety First

# Spraying Safety Gear

TerraLink is the place to go for safety gear, especially related to pesticide application. Come into the Abbotsford store on 464 Riverside Road, or the Delta store on 4119 – 40th Street, where you can shop our huge selection of respirators, spray suits, gloves, ear and eye protection.

#### Respirators & Cartridges:

We now supply the Honeywell brand of respirators. If you need a new one, or need parts, you can upgrade with us.

We stock half-face masks, full face masks, dust masks, as well as cartridges and filters for all sizes.



#### Safety Apparel:

Spraysuits are stocked in all sizes. New this spring is a high-quality product that is resistant to chemicals, yet breathable. It has larger shoulders and armpits to provide more movement for you underneath. It also has no seams in the armpit and shoulder, to avoid the weak spots that are normally the places spraysuits might come apart.

We have all sizes of nitrile disposable chemical-resistant gloves, as well as a wide selection of sturdy workgloves.

#### Eyes & ears:

TerraLink takes pride in stocking many different types and sizes of safety glasses and goggles. For the ears, we have earplugs and earmuffs, again to fit anyone. Just ask!