Building Strong and Vibrant New York Communities
Cornell Cooperative Extension

Capital Area Ag Report
July 3, 2014

“People nee joy quite as much as clothing. Some of them need it far more. — Margaret Collier Graham

Announcements
Wednesday, July 16 from 1—3 pm—Dairy Discussion Group meeting—Building Management Skills: Labor Efficiency & Baleage - hosted by John Sheldon, 601 Sutton Rd., Cornwallville. A farm tour and discussion illustrating how to apply ProDairy management principles to common farm challenges. Contact Aaron Gabriel (518-380-1496, adg12@cornell.edu) or Sandy Buxton (518-380-1498, sab22@cornell.edu) for a head count & for questions.


FYI

Two educational opportunities about growing malting barley and malting. Based out of North Dakota State University:  
http://www.ag.ndsu.edu/plantsciences/events/2014-nd-barley-field-school  
http://www.northern-crops.com/education/education.htm

The UVM Cereal Testing Lab is now open and accepting samples. Please use the updated Cereal Grain Submission Form when submitting samples.

New Online Asian Soybean Aphid Integrated Pest Man-
Weather Data—July 1, 2014

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Ag Report

Corn: Lightening bugs have been out flashing for a couple of weeks now. Lightening bugs emerge at the same time that corn rootworm eggs hatch. Rootworms are now feeding on corn roots. Weakened root systems will allow plants to fall over by themselves (usually each plant in a random direction), or plants will fall over more easily with a good wind (all in one direction). Rootworm damage can also show up as moisture stress on a hot day, even though the soil has adequate moisture. Take a shovel and do some investigating when you see something that is not quite right.
Corn roots missing because they were eaten by rootworm larvae.

What looks like drought stress is a reduced root system from corn rootworm. Soil moisture was good. (2012 picture)

Alfalfa: As you harvest alfalfa, potato leafhopper adults will migrate to another nearby alfalfa field. Monitor neighboring fields, especially new seedings so that you do not get a sudden and severe infestation. Wheel traffic on alfalfa fields a day or two after harvest is okay (5% yield reduction or so), but once you run over new regrowth, you can reduce yields by 30% or so. Control the traffic pattern on fields. Stay off of soft fields and after 3 days or so when regrowth begins.

Soybeans: It is time to monitor beans for aphids. Some areas are not getting much rain and are quite dry. Mites and aphid populations can increase (explode!) under hot dry conditions. Then, applying chemicals to the crop may stress the crop as well, making control decisions difficult. Monitor crops closely, and make decisions for control while you still have options. The action threshold used in the Midwest is 250 aphids per plant. Right now, our plants are still small, so that is probably a high threshold. Also, take a count of lady beetles and other beneficial insects that are eating the aphids.

Grasses: I noticed orchardgrass heavily diseased. There is not much to do but harvest and hope for better growing conditions. Good fertility (adequate potassium, and other nutrients) is important for plants to resist disease. Towress grass fields after harvest with 25—50 lbs of nitrogen. If the fields do not get manure, it may be worth paying more for ammonium sulfate to get the sulfur that urea does not have.

Small Grains: Winter wheat is getting into the hard dough stage. Barley is in the soft dough stage or earlier. Scout fields now and determine where and how much head blight may be present. The head blight fungus (Fusarium) makes the mycotoxin DON, also known as vomitoxin (an accurately descriptive name). Scouting ahead will allow you to know how to adjust your combine to remove shriveled diseased kernels, and what areas to avoid with the combine so you do not contaminate the good grain. Highly infected areas can be harvested separately.

There are several good websites about harvesting barley. I have listed one below, along with some other information about harvesting barley for malting. I am concerned about green weeds being harvested with the grain. Once the grain dries down, the canopy opens
up and light gets to the weeds, which then grow several inches taller while the grain is ripening. If you harvest ragweed with your grain, it only takes a few hours of ragweed contaminated grain to be ruined by taking on the smell and flavor of ragweed. There is no herbicide or desiccant (that I know of) which can be used to dry down the weeds before harvest. For that reason, I think that swathing (cutting with a sicklebar into a windrow) grains and letting the weeds and grain dry before combining may be necessary in some situations. Unfortunately, we do not have combines with a pick-up head in our region. It is something we have to consider to make this grain growing successful under our variable conditions.

Some other things to consider as you prepare for malting barley harvest:

- Moisture at harvest is important. **Too dry** (below 14 to 16% - publications do not all agree) and you will “skin” or “peel” the kernels. This is nicking or removing the glumes. Skinned kernels germinate faster than undamaged kernels. Even germination is important for malting. **Too wet** (above 18%) and the kernels can be damaged because they are too soft. Also, if the grain is not dried in a couple days, sprouting in storage can occur.
- Grain needs to be dried to 13.5% or less moisture for storage. Do not apply heat when drying, so that kernels are not killed.
- One publication says that two-row barley threshes more easily that six-row, and so the combine cylinder speed “should” be slower for two-row barley.

“**Harvesting, Drying, and Storing Malting Barley**” go to:
http://ambainc.org/media/AMBA_PDFs/Pubs/Harvesting_Drying_and_Storing_Barley.pdf

**Harvest Tips & Storage** (from Praire Grains)

**Color and Small Grain Maturity**

With uneven maturity common in many fields, you may have to wait for late grain to mature, while hoping ripe grain does not shatter. Looking at head color and kernel color will enable one to cut as soon as late grain is mature.

Here’s how it works:

- Lack of green in the flag leaf - the uppermost leaf - indicates that a wheat or barley plant has reached 95% of its ultimate yield and that the final stage of development is under way.
- Green disappears from the glumes (bracts at the bases of the spikelets) about 1 1/2 days before maturity. Lack of green in heads and the darkening of a pigment strand in each kernel, seen most easily when kernels are cut open crosswise, signal 100% maturity. The pigment strand begins to appear about a half day before physiological maturity.

A whole field won’t lose its color at the same time, so check thoroughly. Also, check bottom kernels on heads because top kernels lose green first.

**Preserving Malting Barley Quality at Harvest**

Preventing or reducing skinned and broken kernels is the main concern during combining. Skinned kernels are those with more than one-third of the protective husk removed from the kernel. Once skinned and broken kernels exceed 4% of the crop, barley quality and market prices are reduced. Excessive combine cylinder speeds causes the most damage. Cylinder speeds used for threshing wheat are too fast for barley, and should be reduced.

Check the operator’s manual before making speed adjustments. Adjustments should be made in
the field according to the harvest conditions. If threshing problems develop at the slow cylinder speed, first reduce the cylinder to concave spacing. Increase cylinder speed only as a last resort and do it in small increments to avoid kernel damage. Keep returns to the cylinder to a minimum. Returning grain to the cylinder for more threshing will cause more problems. “Prairie Grains” is the official publication of the Minnesota Association of Wheat Growers, North Dakota Grain Growers Association, Montana Grain Growers Association and South Dakota Wheat, Inc.

Swathing versus straight combing (from the Ministry of Agriculture, Saskatchewan)
Both straight combining and swathing can produce marketable malting barley. Desiccants and pre-harvest glyphosates are not allowed for malt barley production. Swathing should be delayed until the moisture content is below 30 per cent. At this stage, the barley kernel is difficult to dent with your thumbnail.
Standard recommendations for swathing versus straight combining barley are not common. Generally, time and quality management, equipment availability, and personal preference will determine whether or not producers swath or straight combine. However, there is a trend to straight combining, which will likely continue.
General advantages of swathing:
- Protection against shattering. This is particularly true for crops with a higher tendency to shatter, such as six-row barley. However, to protect against sprouting and staining, it is recommended to leave the crop standing as long as possible.
- Hastens dry-down, given proper drying conditions in the swath. Terminating plant growth can result in a shorter time interval to harvest. This can be beneficial on rolling land with uneven maturity, since producers may not want to risk shattering losses while they wait for later maturing areas to dry down.
- Terminates under-story growth (late flushes of tillers, volunteers and weeds).
- Offers the opportunity, if you have a thin stand, to create a double swath to better utilize combine capacity.
- Offers a strategy to deal with lodging.

The advantages of straight combining are generally related to time management, as well as quality management, especially during wet fall conditions:
- Protection against sprouting and staining. Most malting barley varieties, especially two-row varieties, are susceptible to sprouting.
- Heavy dew will affect grain quality (sprouting, staining) in the swath more than standing grain.
- Provides one operation; however, if areas of the field are still a bit green, producers may harvest around these areas to protect quality, resulting in additional trips to the field.

Harvesting and handling
Combining can begin at 16 per cent moisture if aeration is available. Peeling can occur if the grain is too dry. If it is too wet, storage and germination concerns can occur. If aerating, start early (i.e. after a few loads). The fan should continue to operate until the process is complete. If the fan is turned off for longer than a few hours, a crust can develop in the bin, preventing sufficient air flow when aeration continues. It is generally preferred not to use heat, but if neces-
sary, drying should occur slowly, at low temperatures with large volumes of air. Drying with excessive heat can affect germination, which negatively affects the malting process. To prevent heating within the bin's core, the drying process should include a cooling period, which will reduce the bin temperature. If possible, continuous drying is better than batch drying. If the moisture content falls below 13.5 per cent, peeling during combining and handling is more likely. Therefore, producers should adjust the combine (cylinder/rotor speed and concave clearance) and handling equipment so peeling and breakage are minimized. Producers will want to check the sample regularly and may want to adjust the combine throughout the day as grain moisture and humidity change. Maltsters prefer kernels with a small piece of intact awn. Storage conditions should maintain low moisture levels. Bins should be clean and dry. Handling should be minimized to reduce peeled and broken kernels. It is recommended to run augers at a slower speed and at full capacity.

Proper sampling is also very important. Samples should be collected (a five-gallon or 22.7-litre pail works well) when filling the bin, and should represent the entire bin. Sampling should be done from different places in the grain stream, such as the front, back and side, since grain and weed seeds of different density will be in greater proportion in different parts of the stream. The sample should be labeled with variety name, field and bin number and stored in a cool, dry place. Harvests of different varieties, and even different weather conditions, should be stored separately. Producers who sow malting barley varieties are generally hoping to capture the malt premium. The above recommendations will help produce high-quality malting barley. For more information on malting barley requirements, storage and drying and implications on quality, please see the Quality Factors in Malting Barley fact sheet on the BMBRI website at: http://www.bmbri.ca/

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