



Ag & Hort Update

February 2010

The sun has begun to peek out on occasion, and the weather has quieted down a bit from the constant stream of storms we saw in January. I'm sure we will see more winter precipitation before this record-breaking season comes to a close, but the temporary relief is welcome! If you need some guidance as you clean up from the ice storm a few weeks ago, we have some good publications on storm-damaged trees and proper pruning available in the office and online through the Extension store. Give us a call if you have questions, and stay warm this month!!

-Kate Olson

Upcoming Events:

- Feb. 11th - FSQA Training (6:00 at Library)
- Feb. 15th - Extension Office Closed
- Feb. 23rd - Private Pesticide Applicator Certification (9:30 AM or 1:30 PM at Therkildsen Center)
- March 6th - Boots to Heels Women's Conference

Ask the ISU Garden Expert

In regards to cold hardiness, does it make any difference where a fruit tree was grown?

Plant hardiness is a species or cultivar trait. The location of the nursery or where the plant was grown has little or no effect on plant hardiness. For example, a 'Red Delicious' apple tree produced in Missouri will be just as hardy as one produced in Minnesota.

What are some good pear varieties for Iowa?

Pear varieties (cultivars) that perform well in Iowa include 'Summercrisp' (University of Minnesota introduction, large fruit, matures early August), 'Moonglow' (introduced by USDA, medium to large fruit, matures mid-August), 'Bartlett' (large fruit, matures late August, susceptible to fireblight), 'Luscious' (developed at South Dakota State University, medium-sized fruit, matures mid-September), 'Patten' (originated in Iowa, large fruit, matures mid-September), and 'Seckel' (sometimes called Sugar Pear, small fruit, matures mid-September).

'Moonglow' and 'Bartlett' are not reliably hardy in northern Iowa. They should be planted only in central and southern portions of the state. All of the other aforementioned pear cultivars can be successfully grown throughout Iowa.

Deer have eaten off all the needles on the lower branches of my Colorado spruce. Are the bare branches going to die?

The deep snow and prolonged period of snowcover have posed serious problems for deer and other wildlife in the state. Denied access to food on the ground, deer have been forced to feed on trees and shrubs in woodlands, windbreaks and landscape plantings. Among evergreens, arborvitae and yews are the most susceptible to browsing by deer in winter. However, deer will also browse on pines and spruces when food is scarce.

The extent of damage to the lower spruce branches will be determined by the presence or absence of buds (growing points). If buds are present, the lower branches will produce new growth in spring. The affected branches will initially have fewer needles than normal. However, the tree may fully recover in two or three years. If buds are absent, the affected branches will not be able to produce new growth and will die.

What are some good onion varieties for Iowa?

Suggested onion varieties for home gardens in Iowa include 'Copra' (main season, yellow-brown skin, excellent storage), 'Candy' (yellow-brown skin, globe-shaped, short term storage), 'Red Burgermaster' (bright red, globe-shaped, good storage), 'Red Zeppelin' (deep red, globe-shaped, excellent storage), 'Stuttgarter' (flattened globes, light brown skin, excellent storage, from sets) and 'Walla Walla Sweet' (late season, yellow-brown skin, short-term storage).

What would be a good location for a cold frame?

Cold frames and hotbeds are used to germinate flower and vegetable seeds of cool season crops in early spring and to harden off plants prior to transplanting outdoors. The primary difference between a cold frame and a hotbed is that a cold frame relies on solar heating, whereas a hotbed uses an additional heat source, such as electric heating cables or fresh manure.

A site with a southern exposure is the best location for a cold frame or hotbed. A southern exposure provides maximum sunlight and heating capacity. To reduce heat loss, position the north end of the structure near a home, garage or fence. For convenience, a nearby water source is helpful. An electric outlet may be necessary as a power source for a hotbed.

Can the Lenten rose be successfully grown in Iowa?

While more demanding than many other perennials, the Lenten rose (*Helleborus x hybridus*) can be successfully grown in Iowa. The Lenten rose requires a fertile, well-drained soil in partial shade. Also, choose a site protected from strong winter winds. The evergreen foliage of the Lenten rose may become scorched or tattered when subjected to strong winds in winter.

Get answers to all your yard and garden questions at www.yardandgarden.extension.iastate.edu. For specific questions, call the Hortline at (515) 294-3108, Monday-Friday from 10 a.m. to noon and 1 to 4:30

Consider Frost Seeding or Interseeding Pastures in the Spring

By Steve Barnhart, Department of Agronomy

Producers wanting to add to or improve the forage species in their existing pastures should consider using either the frost seeding method in February and early March, or interseeding later in the spring months.

Frost seeding involves spreading forage seed on existing pastures during the late winter or very early spring while the ground is still frozen. Freeze-thaw cycles then provide shallow coverage of the seed, which help shield from early spring rains. Frost seeding is the easiest method to add new forage legumes or grasses to pastures, and is likely the least expensive method, as well.

To increase this method's success, spread seed on the thinnest pasture sod areas first and on areas where bare soil has been exposed due to heavy grazing or disturbance. One common misconception about frost seeding is that spreading the seed on top of snow works best. The goal of frost seeding is to get seed on bare soil. This is more effective and more safely done without snow cover. Red clover has been the Iowa forage species of choice for frost seeding. Other legumes, such as white clover and birdsfoot trefoil, also can be frost seeded but with less success than red clover. In general, frost seeding does not work as well with grasses. A few well researched steps will improve the success of frost seeding. Those steps, seeding rates and guidelines are available in the ISU Extension bulletin [Improving Pasture by Frost Seeding](#).

Interseeding offers an opportunity for improving pasture productivity too. Interseeding involves using a no-till drill to aid in the incorporation of a legume or a more productive grass into an existing pasture sod. Interseeding is normally done from mid-March through early May, when soil moisture and temperature are more suitable for rapid seedling establishment.

Interseeding can be accomplished with relatively few field operations. Opening of the grass sod, shallow seed placement, and seed coverage are required. A number of drills are available that can be used in sod-seeding efforts. Some of these drills may have improved features related to sod penetration, depth control, seed metering, or coverage that improves their effectiveness in sod seeding situations. Equipment limitations for sod seeding implements sometimes are overcome by operator experience and home shop modifications.

Legumes interseeded into grass sod should increase pasture yield, improve forage quality, and eliminate or minimize need for nitrogen fertilizer. Clovers, alfalfa, birdsfoot trefoil have been successfully interseeded. The more efficient seed placement provided by a no-till drill allows many of our more productive perennial forage grasses to also be successfully established by interseeding. Thin, low-producing, grass sod might best be improved by interseeding a grass legume mixture.

A seeding delay into late spring to improve growing conditions often also leads to a greater competition from the existing grass sod. Close grazing in the fall or spring, ahead of interseeding, will help to reduce sod competition. Contact herbicides are sometimes also used to temporarily further reduce competition from plants present in the stand. Use only labeled herbicides for sod suppression, and follow label instructions.

Interseeding success depends a lot on paying attention to details, timeliness, careful management of sod completion, controlling seeding depth to no deeper than one-fourth to one-half inch, and a little bit of luck with weather. Interseeding research has been conducted in many parts of the U.S. and around the world. It shouldn't come as a surprise that the conclusions from these efforts all point to several very important issues that must be met for successful interseedings. See ISU Extension bulletin [Interseeding and No-Till Pasture Renovation](#) for more suggested seeding rates and guidelines.

Using Yield Trial Data to Make Variety Selections

By Jim Rouse, Department of Agronomy

Each year I receive several questions about how best to use yield trial data to make hybrid and variety selection decisions. This article will cover the most common issues that are discussed.

As always, variety selection is about much more than just yield. Growers also need to evaluate the various combinations of maturities, defensive traits and herbicide traits that are important to them. Even with all that, there is still a high priority on yield potential and it's easy to see why. The rest of the selection process is relatively easy—the candidates for selection either possess the desired trait or they don't. They are either within the desired maturity range or they're not. But among those that meet your desired criteria, how do you choose those with the greatest yield potential?

Use proper data reports

Remember, variety selection is not about identifying which lines did best over the past year—it is about predicting which lines will do best in the future. This is not dependent upon how you use data reports. Instead, it depends on the proper selection of data reports to use in the first place.

Predictive information for yield potential should come only from multi-environment trial averages. If your favorite data report does not include district or regional yield averages, you should not use it to make selection decisions.

Why are multi-location averages more predictive? Consider this: The data from a single location is a measure of the yields produced by the interactions of the varieties (genetics) with the environment (everything else). In these experiments, the environment is comprised of soil type(s), soil conditions, weather, nutrients, pests, pathogens, and any other factor that can impact the expression of genetic yield potential during that season. But the only factors that you can know for next season will be the soil type(s) where you plant and the varieties you choose. Because of this, you cannot expect the results from a single-location trial in one season to be duplicated in another season.

Be aware that varieties will perform differently at different locations, even when steps are taken to choose similar environments. In most yield trials researchers attempt to test in as many different environments as possible. If these data are not averaged across locations, how then does one evaluate the results?

Many people ignore this and continue to use other criteria to choose a single location from which to select. These criteria include, but are not limited to, the location that:

- Is closest to your farm
- Had the same heat units you had
- Had the same crop rotation you use
- Had the same tillage method you use
- Had the soil type most similar to yours

Remember that all of these criteria will interact in various unknown and unpredictable ways to impact the final data measurements in each field. Thus, for these results to be predictive, your field next year must experience conditions essentially identical to the yield trial field where the data were collected.

Since it is highly unlikely that next season's conditions will be the same as those in any single-location report, you will increase your probability of success by selecting a variety that can perform well in many environments. And you can identify these varieties only in test reports that display averages over locations.

Understanding the data

The most important aspect of reviewing data involves understanding the data that are provided. Use information like the least significant difference (LSD) to help you sort entries. Any entries that differ by less than the reported LSD for a trait (i.e. yield, maturity, disease rating, and pest resistance) should be considered equal for that trait. Measurements within a LSD could be due to a number of different factors, including measurement error or random chance. These differences are not considered to be significant and are not likely repeatable in your field.

Do not rely on summary tables or diagrams to determine if one variety is better or worse than another—look at the data. All data provided without LSD values should be considered unreliable and should not be used to make variety decisions. This point cannot be overstated: using test results without the accompanying statistics will lead to conclusions that are not supported by the test results.

Using the data

Now that you know how to evaluate reports, the next step is to sort through the data to make your selections. Variety selection is composed of two distinct but related components. The first is selecting high-yielding varieties for your operation. The second is risk management, as defined by the number of varieties you select, their mix of maturities, defensive traits, seed treatments, and their acreage allocation.

Even though the risk management aspect of variety selection can instill some variability in methodology, there are certain characteristics that should remain consistent among all users of yield trial data:

- 1) Only multiple-location data should be used to make predictive selection decisions.
- 2) Yield trials do not have to be performed on your farm, on your soil type, or even under your crop rotation scheme to provide relevant data.
- 3) Sort the data by yield. Make initial selections based on yield and appropriate maturity.
- 4) Once you have a pool of candidates, sort among these to identify lines that have the desired mix of defensive traits.
- 5) More information is better information, so use all reliable sources of data.

Because variety selection is a multi-step process the most effective approach will incorporate several sources of information. At Iowa State University, the most comprehensive source of information for corn and soybean yields and several defensive traits can be found at Iowa Crop Performance Testing at www.croptesting.iastate.edu.