
Photos: Tyler Williams

Nutrient deficiencies can cause severe yield loss.

TOP 5 AG TOPICS

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corn production, in particular, nutrient needs are estimated based on expected yields and nutrient availability. However, the expected conditions and reality often never align, so some modifications and adjustments are usually needed.

In addition to pre-season soil tests (discussed more in 5), there are some in-season soil and tissue tests available to analyze the current nutrient status. These can be useful when determining if more nutrients are needed, which is often due to inclement or adverse weather conditions because the environment can dictate the availability, location and form of the nutrients in the soil. Nutrients such as Nitrogen and Sulfur can change in their availability and form rather quickly due to extreme temperature or precipitation, so testing may be necessary.

You can take soil samples or take leaf tissue from the plant to submit to the testing labs. With in-season samples, you need to do this in a timely manner and plan to respond quickly before any deficiencies cause damage or reduce yield. There are other sensor-based technologies available, but not discussed here. After receiving the testing results, recommendations are often on the soil test or you can reach out to the Extension office to help resolve issues raised on the sampling results.

For more resources, go to Soil Management to Optimize Crop Production in Nebraska: *https://cropwatch.unl.edu/soils*

4. Pest Identification

Understanding the development, lifecycle and biology of all the potential pests in Nebraska is impossible. You likely recognize many of the common weed or insect pests around the farm or home, but you will come across something you are not familiar with. Luckily, Nebraska Extension has experts and experience in plant physiology, plant pathology and entomology among other areas and can help with the proper identification and management for these pests.

The first, and most useful, piece of pest identification is to get good pictures. Take multiple pictures of the pest using a zoom to get very close, as well as pictures from further away to get a sense of the environment. You also want to capture the damage and any patterns of that damage. Once you have these pictures, you can email them to lancaster@unl.edu, with a description of the problem and any history that may help with identification. Not all pests can be identified virtually, so a sample may be needed. For more information on providing information digitally, go to *http://go.unl.edu/plantclinic.*


Photos: Tyler Williams

Poison hemlock is a common weed in Lancaster County.

There are also digital tools that can help. The University of Nebraska–Lincoln has the Digital Diagnostics Network mobile app and online tool, which allows you to submit pictures and description to a range of specialists to help identify the pest.

For help in identifying your pest, go to *http://digitaldiagnostics.unl.edu/* on your computer or use the app on your mobile device (Android or Apple, search app store).

5. Soil Sampling

Soil sampling is one of the most important pieces of information you can have about your land, and to be honest, Lancaster County is home to some very diverse and challenging soils. Whether it is a 100-acre field of row crops or the garden in your backyard, understanding what is in your soil is the most critical piece to growing plants. The most common questions regarding soil sampling are how to take the sample, where to send it and what it means.

To take a soil sample, use a soil probe and remove a core of soil. (FYI — you can check-out a probe at the Extension office between 8 a.m. - 4:30 p.m.) The sample can be taken in the fall or early spring and should be taken to at least a depth of 8-inches. Some crops will have roots much deeper, so samples can be taken down to 36-inches, especially in row crop situations. Take four to eight cores from areas that are representative of the field and do this in a few locations in the field. If in a small plot, one area may be sufficient. Mix the cores in a plastic bucket and fill a soil sampling bag.

There are few places to take the soil samples (or even forage samples) in the area. Ag Source Labs (Lincoln), Midwest Labs (Omaha) and Ward Labs (Kearney), are a few options for soil tests. You will be able to select which tests to have done on your soil and this depends on your crop and how often you conduct soil tests. The labs can assist you with this selection. The results from the tests are typically available in less than a week.

The tests results often provide a "range" for adequate values based on the crop(s) you are trying to grow. It is difficult to give a blanket recommendation for these tests, so please reach out to the Extension office if you are having challenges or need help interpreting the results.

- Soil and plant testing lab nearby:
  AgSource Labs https://laboratories.agsource.com/lincoln/
  Midwest Labs *https://midwestlabs.com/*
  Ward Labs *https://www.wardlab.com/*
- Guidelines for Soil Sampling NebGuide *http://extensionpublications.unl.edu/assets/pdf/g1740.pdf*

Timing Your Fruit Harvesting Apples, Pears & Plums

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To obtain quality fruit from your garden, it's important to harvest the fruits at the right stage of maturity. Knowing when to harvest tree fruits is a challenge in judging several factors: flesh firmness, flesh color, skin color, flavor and number of days from full bloom. The ideal harvest time for apple and pear cultivars varies widely, so do some research on the cultivars in your home orchard or use the tips below to gauge the best harvest time.

Apples

If picked prematurely, apples are likely to be sour, tough, small and poorly colored; if picked overripe, they may develop internal breakdown and store poorly.

To harvest apples correctly, you must be familiar with the term "ground color." Ground color is the color of the fruit's skin, aside from any reddish blush that occurs on the side of fruits in the sun. In red-fruited apples, look at the side of the apple that faces the interior of the tree.

When the ground color of red apple cultivars changes from leaf green to a lighter pale green, the apples are ready to harvest. In yellow apple cultivars, the ground color becomes golden. Mature apples with a yellowish-green background color are suitable for storage.

Apples will improve in storage if they are picked when hard but mature- i.e., showing the mature skin color but still too hard for good eating texture. Most apple cultivars have brown seeds when ready for harvest. However, seeds may become brown several weeks before proper picking maturity. When harvesting, do not remove the stems from apples that will be stored.

Fresh eating apples can be allowed to fully ripen on the tree.

Pears

Pears do not have good eating quality if left on the tree until they are mature. They develop stone or grit cells, or a mealy texture that makes the fruit less desirable. Tree ripened fruits may also have soft, brown centers and a reduced shelf life. For good flavor and texture, pears should be picked hard and ripened after harvest.

Harvest pears while they are still quite firm (hard) but the ground color has lightened to a pale green or greenish-yellow color. Additional indications pears are ready to harvest are when the fruit stem easily separates from the branch with an upward twist of the fruit and when the lenticels (spots on fruit surface), which are white or green on immature fruits, become brown.

After harvest, any pears intended for storage should be handled as described below. Those intended for canning, preserving or fresh eating should be held at 60–65°F for 1-3 weeks, depending on the pear cultivar, until they reach a good eating texture. High temperatures (75°F and higher) after picking will cause the fruit to break down without ripening. After ripening, pears can be canned or preserved.

Storage of Apples & Pears

Sort the immature fruits for defects, discarding any with bruises, insect or disease damage, cracks, splits or mechanical injury, then place them into cold storage at 29–31°F and 90% humidity.

Perforated plastic bags can be used to store small groups of fruit; they help maintain high humidity around the fruits but prevent the accumulation of excess moisture in the bag. Unperforated plastic bags can also be used, just don't seal them shut. Instead, just fold the top of the bag over allowing some air movement and water evaporation from the bag. Regularly inspect stored fruits for mold or rotting fruit; discard any you find.

When stored at this temperature, apples may last for up to 6 months and pears for 2-4 months. Late-maturing apple varieties are best suited to storage.

Plums

Fruit color, softness and flavor are the best indicators for timing your plum harvest. Plums are ready to harvest when the flesh starts to soften and yields to gentle thumb pressure. Fruit skin color changes from green to purple, red or yellow. But the best way to tell when it's time to harvest is to taste a few fruits!

Plums keep for 3–5 weeks if stored in the refrigerator at 32–40°F in perforated plastic bags.


Pixabay

Immature plums change color as they ripen.