

Kentucky Nursery LISTSERV Bulletin

University of Kentucky Nursery Crops Team

End of November 2015

Winter is coming!

Typically in central Kentucky, the average temperatures in December are in the low 40s. The 3-4 week long range outlook shows *above average* temperatures with some additional precipitation. It looks like, despite the hard freeze many in the state experienced a week ago, we may stay a little bit warmer than usual through December.

Click here for UK Ag Weather - Long Range Forecast

For those of you engaged in container production, Fall is a good time to verify your fertility / Nitrogen levels are dropping off in preparation for the dormant season. Aside from being an unnecessary cost, excessive nitrogen can prevent winter hardening and contribute to winter injury. If fertigation: stop. Controlled-release fertilizers are less of a concern, as they are generally engineered to slow their release as temperatures drop.

Nursery Crops Team

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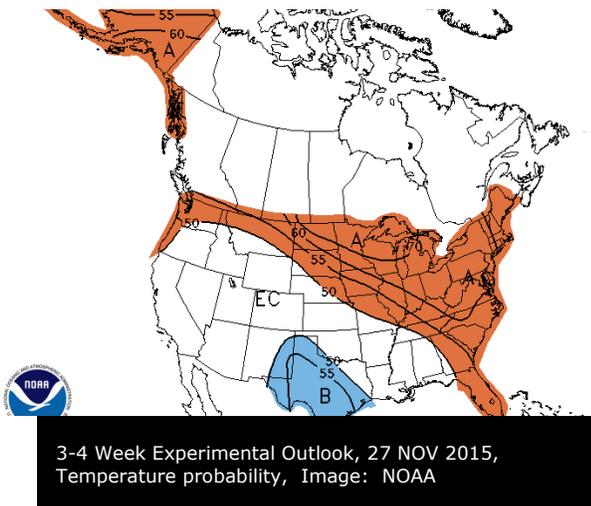
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- **Fall Soil Testing (Field Production)**
- **Dormant Oil Overview**

Excerpted from Taking Soil Test Samples (AGR-16)

<http://www2.ca.uky.edu/agc/pubs/agr/agr16/agr16.pdf>

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The most important part of making fertilizer recommendations is collecting a good, representative soil sample. Soil test results and fertilizer recommendations are based solely on the few ounces of soil submitted to the laboratory for analysis. These few ounces can represent several million pounds of soil in the field. If this sample does not reflect actual soil conditions, the results can be misleading and lead to costly over- or under-fertilization. It is necessary to make sure that the soil sample sent to the laboratory accurately represents the area sampled.

Sample Timing

Soil samples can be collected through much of the year, although fall (September to December) or spring (February to April) are the best times. **Fall sampling will often result in a faster return of results and recommendations.** Fall sampling will also allow the grower time to have the fertilizer applied well before planting the next crop. However, fall sampling results in lower pH and soil test K levels when conditions are dry. In either case, a field should always be sampled the same time of the year in order to make historical comparisons.

Tools You Need

A soil probe, auger, garden trowel, or a spade and knife are all the tools you need to take the individual cores that will make up the "field" sample. You will also need a clean, dry, plastic bucket to collect and mix the sample cores. Be sure not to use galvanized or rubber buckets because they will contaminate the sample with zinc. Soil sample boxes or bags and information forms for submitting samples are available at all county Extension offices.

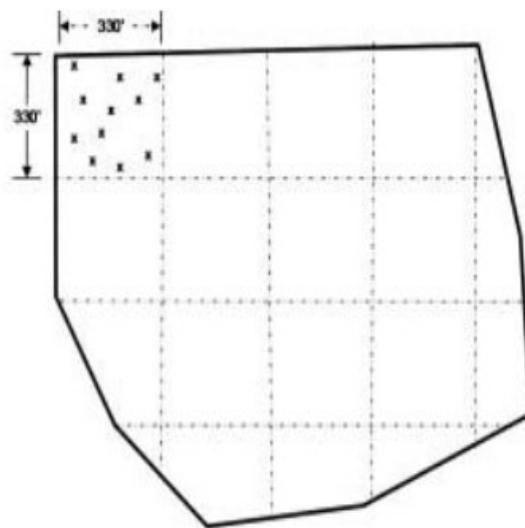
Sample Preparation

After all cores for an individual sample are collected and placed in the bucket, crush the soil material and mix the sample thoroughly. Allow the sample to air dry in an open space free from contamination. Do not dry the sample in an oven or at an abnormally high temperature. When dry, fill the sample container with the soil.



A soil probe, auger, or spade and knife should be used in sampling soils. The spade sample must be trimmed as shown.

Photo: UK Extension, AGR-16



A field can be divided into 2.5-acre grid cells, as shown in the diagram above. Each cell should be treated as an individual field, and approximately 10 random cores should be taken from each cell.

Image: UK Extension, AGR-16

Dormant Season Overview—Integrated Pest Management

Insects and plant diseases are not very active outside of the growing season. As temperatures drop and days become shorter, biological activity in plants and their pests slow. Nursery managers shift their focus to the economic aspects of the business and into overwintering operations.

Integrated Pest Management calendars reference the use of dormant oil for the control of many insect pests. Mites and scale insects including Euonymus scale, Oystershell scale, Fletcher scale, and Japanese maple scale are all well controlled using dormant oil during the dormant season. But what is dormant oil, and how does it work?

Dormant oil is a term that was originally used to refer to heavy grade oil products used on woody plants during the dormant season. These older products called phytotoxic effects if used during the growing season, so were limited to dormant season applications. These products have not been replaced in the horticultural market with lighter grade, more highly refined products that can be used both in winter and summer. The term dormant oil now refers to the time of application rather than the product. Dormant oil applications target overwintering insects and can kill adults, nymphs and eggs of insects like mites.

Most commercial dormant oil sprays are refined from petroleum oil, but some are made from cottonseed oil. Commercial spray oils have an emulsifier added to allow the oil to mix with water. These oils kill exposed insects and mites by either suffocating them (covering their breathing tubes) or by directly penetrating the outside cuticle and destroying internal cells. Due to its mechanism of control (suffocation) there is minimal risk of insects' or mites' developing resistance. Additionally, it is generally less harmful to beneficial insects and mites than other pesticides. These oils are also relatively safe to birds, humans and other mammals.

Use of this oil on plants after bud break will control the pests, but it may damage new growth. Another disadvantage is the minimal residual activity to kill newer pest infestations.

Dormant oil applications must be made when temperatures stay above freezing for 24 hours. As always, be sure to follow all label directions because certain oil sprays may damage certain plants. For example, the needles of Colorado blue spruce can be discolored by dormant oil applications.



Overwintering scale insects

Image: Nebraska Extension

The University of Kentucky's **Nursery Crop Extension Research Team** is based out of two locations across the bluegrass to better serve our producers.

The **University of Kentucky Research and Education Center (UKREC)** in **Princeton** serves western Kentucky producers while our facilities and personnel on main campus in **Lexington** serve central and eastern Kentucky producers.

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