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Georgia Pecan Nut News

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Fertilization

Lenny Wells

It seems a little odd to me that even though pecans have been grown in Georgia for 80-100 years now, the best time to apply Nitrogen and other materials and in what amounts is still debated.

N uptake is largely driven by demand for N in the tree. For this reason, well-managed orchards are usually slow to respond to applications of N. Basically, if there is little demand for N, there is little uptake. This demand is regulated by growth of leaves or fruit, as well as by the production of proteins.

N has been traditionally applied in March in order to have the material available to the tree at bud break. For run-down and non-irrigated orchards, trees may

respond well to an early March or even a February application. Dry soils allow for virtually no N uptake. Therefore, soils should be moist in order for the trees to receive the N.

In well managed, irrigated orchard soils however, N can move more readily and leach out of the effective root zone before it is taken up by the tree, and we have more control over soil moisture.

Initially in the spring, the N used by developing foliage comes from storage pools within the tree. For this reason there is probably very little N uptake by the roots at this time until the storage pools are depleted. Therefore making the spring application in mid to late April following bud-break may be a better approach, as less N will be wasted.

Another somewhat controversial topic has been the application of N during the kernel-filling stage. It makes sense that N demand will be greatest for "on" trees bearing a heavy crop load, since expanding leaves, shoots, and fruit create the greatest demand for N. For this reason, the mid-late canopy expansion and kernel-filling stages would appear to present the most likely times for utilization of soil-applied N. Most

of the N taken up during the kernel-fill stage will supply the N storage pool needed for early spring growth.

Dr. Bill Goff's work at Auburn has shown very good results with an April/August/September split application. We will begin evaluating this type of application in Georgia during the 2005 season.

Many researchers, growers, and extension specialists feel that we may be applying more N than we actually need to most orchards. A general rule has been to apply 10 lbs of N for every 100 lbs of crop expected.

Of course, all fertilizer recommendations should be based on leaf tissue analysis, but for a general recommendation, 75 of N applied in mid April would be sufficient for the spring application. In June/July a determination could be made as to whether or not the trees are bearing a heavy crop. If so, another application of 75 lbs could be made in mid to late August.

If the trees have a light crop, the August N application could be skipped.

Potassium (K) can greatly benefit the pecan crop as well. K is needed for cold tolerance, adequate growth, nut production, and quality. The UGA Extension Service recommends 60-150 lbs of K in orchard soils. Heavy crop loads tend to drain K from the tree because of the high amounts of K that are translocated to the nuts.

In general, any K applied after bud-break will not help the current year's crop, therefore K could be applied in February or early March, before the onset of winter rains. There is also some evidence that when the crop is "on", it may be beneficial to apply an additional 30 lbs of K in August, especially if August N is applied. Anytime high N rates are used, it will be beneficial to apply K as well in order to keep the N/K balance adequate. Excess N without K can

lead to nitrogen leaf scorch. A good rule of thumb for the N:K ratio is 2:1 for most varieties.

If Phosphorous (P) is required, it should be applied in February/March; however, for most orchards, once the P level in the soil is established it remains adequate for a long period of time.

More on Nickel

Lenny Wells

As the season gets underway, there may be more and more talk concerning Nickel (Ni) application to pecans. At the time the spray guide was put together, Nickel liganosulfonate (Nickel Plus) was the only form of Nickel approved by the state Dept. of Ag for application on pecan. In addition, it was the only Nickel product that we had seen any data on. Since that time, a Nickel Sulfate Solution from Agribusiness Technologies has been approved by the Dept of Ag. for use on pecans as well. However, we have not seen any data on the effectiveness or safety of this material. We do plan to test this material during the 2005 season, so more information will be available at a later date. But, as of now, the only Nickel material we can recommend is the Nickel liganosulfonate (Nickel Plus) material. The Nickel Sulfate solution sold by Agri-B is approved by the state, however we need to evaluate it before we can officially recommend it to growers.

Advice on Spraying

Paul Sumner

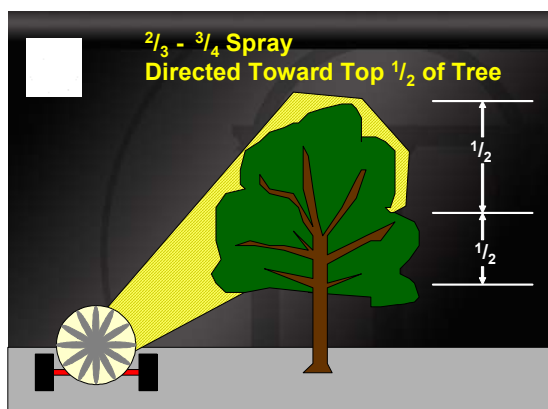
The delivery of adequate chemical spray material to pecan foliage can be difficult. Pecan trees are non-uniform in size and shape. Bottom limbs and leaves obstruct sprayer air flow during the growing season thus causing uneven coverage in the tree. Fortunately, most chemicals are designed to be effective under those

conditions. Good coverage means something that is acceptable and controls the specified pest.

Air blast sprayers use large volumes of air to carry pesticides into trees. The air volume in a pecan tree must be displaced in order for chemical laden air to reach the top.

The efficiency of orchard pest management programs are influenced by the skills of managers and sprayer operators. A combination of operation skill, timing, equipment performance, and chemical selection is necessary for optimal results.

The recommended setup for pecan air blast sprayers is such that the total spray volume applied is divided to direct 1/4 to 1/3 of the spray to the lower 1/2 of the tree. The remainder is directed at the upper 1/2 of the tree. Use volume ratios of 1/3 bottom and 2/3 top for small trees (<40 ft) and 1/4



bottom and 3/4 top for large trees.

Results from 10 years worth of UGA Extension sprayer clinics show that tree size has some effect on canopy penetration and deposition. Larger trees generally have less deposition in the top center portion of the tree.

Spray clinic results also show that slowing the sprayer from 3.0 to 2.0 mph increased spray deposition by 7.8%. Slowing from 3.0 to 1.5 mph increased

deposition by 34.9%. Even slowing from 2.0 to 1.5 mph increased overall deposition by 29.4%. Your ground speed should be slow enough that the spray leaving the sprayer should not bend before entering the tree. The spray stream should be at a right angle to the sprayer.

Additionally, it was found that one-side spraying did not place sufficient material on the opposite side of the tree. Using fewer nozzles with the same volume (GPA) can increase overall canopy deposition by 14%. Larger droplets are formed with this arrangement, therefore the spray was able to go further up into the tree. Be very careful not to increase nozzle size significantly.

Spraying at night also led to a 23% increase in deposition throughout the tree. Growers should stop spraying when the dew begins to fall.

Application volume per acre should follow the table below:

| Rate per Acre | |
|---------------|-----------|
| TREE SIZE | GPA |
| Up to 25 ft | 25 |
| 25 to 50 | 50 - 75 |
| 50 and Up | 100 - 125 |

Quilt Fungicide Labeled for Pecans

Jason Brock

Syngenta has introduced Quilt, a new fungicide labeled for control of diseases of pecan. Quilt is similar to Stratego in that both are a pre-mix containing a sterol inhibitor and a strobilurin. Stratego is a mix of Orbit (propiconazole) and Flint (trifloxystrobin). Quilt is a mix of Orbit

(propiconazole) and Abound (azoxystrobin).

Target diseases include scab, anthracnose, downy spot, zonate leaf spot, and powdery mildew. The use rate is 14-27.5 fl oz. of product per acre. The low rate provides 4.0 oz of propiconazole and 4.3 fl oz of azoxystrobin per acre. While the higher rate gives growers flexibility, the low rate should provide adequate control in most situations.

Although Quilt is a new product, both active ingredients are already labeled and used in pecan disease management. Propiconazole is available as Propimax, Orbit, and as a component of Stratego. Azoxystrobin is available as Abound. Minimal data is available on the active ingredients in this exact combination and labeled rate; however, Quilt should have good activity on nut scab, and should be very good on leaf scab and other pecan diseases.

As with Stratego, growers need to follow resistance management guidelines for both strobilurins and sterol inhibitors. Strobilurins should be limited to three applications per season. Sterol inhibitors should be alternated with a different mode of action or used in mixtures with different modes of action.

As with all products, follow all label directions and restrictions.

Tank-mixing of Boron

Lenny Wells

The mixing of Solubor (Boron) to pesticide spray mixes appears to be safe for most fungicides and insecticides with the exception of Provado. The addition of Solubor to Provado tank-mixes elevates the pH of the spray solution to around 8.5, which is high enough to cause hydrolysis of the active ingredient of Provado. Most of

the time this shouldn't be a problem because Provado is needed for aphid control mostly in late summer, whereas Boron is applied in the spring. If Solubor is added to a Provado tank mix, an acidifying agent will be needed to lower the pH and make it compatible.

So far, Solubor is the only Boron product that we have compatibility data for, therefore it is unknown at this time whether or not other Boron materials would respond in the same manner.

Phylloxera

Will Hudson

Orchards with a recent history of Phylloxera infestation, should spray for these insects in their first pre-pollination spray at budbreak. A second application may be required as well, depending upon the severity of the situation. Provado at 3.5-7 oz., Lorsban at 2 pts., and Centric at 2.0-2.5 oz. will all provide sufficient control.

The 2005 Georgia Pecan Pest Management Guides are now available. Growers should contact their county agent for a copy.

Dates to Remember

Georgia Pecan Growers Association
40 th Annual Conference & Trade Show
May 5, 2005
Georgia National Fairgrounds
Perry, GA
8:00-5:00 pm

The UGA Pecan Team now has a website. It is under construction, but continue to check www.tifton.uga.edu/ugapecan/ for pecan information

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