Southern Forest
Nursery Management Cooperative
Fall 2012

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Director's Report

It has been a few months since our last Newsletter and I hope that your seedlings are getting ready to be lifted and that you have had another productive growing season under your belt. There have been no changes in the soil fumigant rules since the Spring Newsletter and the Contact Meeting in July, thus we are still on schedule for a complete adoption of the reregistration decisions (REDs) to come under enforcement sometime towards the end of 2012. For those that do fall fumigation in 2012 you will most likely miss the buffer zone requirements, however for Spring 2013 and beyond, all the soil fumigation rules come into force.

Membership

Tom and I have been approached by a couple of nurseries in the southern US about joining the Nursery Cooperative. Most recently we visited with the Northeast Forest Association and presented Nursery Cooperative membership to the Kentucky forest-tree nursery. We also shared with them our brochure and answered a few questions concerning the Cooperative. There is also some interest from Westervelt joining and we continue to talk with their organization. Current membership within the Nursery Cooperative is 17 full members.

Advisory Meeting

The Advisory meeting is scheduled for Wednesday and Thursday, November 14 & 15, 2012 at the School of Forestry and Wildlife Building at 602 Duncan Drive. This is one week later than our usual time and was moved to allow Tom Starkey to attend the Methyl Bromide Alternatives Conference and present the latest soil fumigation information in Orlando, FL. The Nursery Cooperative Staff will begin the process of updating our Accomplishments, Budget and next year's Work Plan. If you have any ideas or items that your organization would like addressed, please contact myself, or Tom. The Advisory meeting will begin after lunch on Wednesday and adjourn around noon on Thursday. We will set up the meeting using video conferencing for those who may not be able to travel to Auburn. If you would like to get access to the meeting please call Elizabeth Bowersock at 334.844.1012 and she will let you know what you need to access the meeting. Place those days on your calendar and more information will be available shortly.

Contact Meeting

The 2012 Nursery Cooperative Contact meeting was held in conjunction with the Northeast Forest and Conservation Association and the Southern Forest Nursery Association on July 16-19, 2012 in Chattanooga, TN. The Nursery Cooperative portion of the meeting was attended by 44 Nursery Cooperative members. In addition, Nursery Cooperative staff presented information to the entire group on soil fumigation history, the use of Proline and was involved with both nursery tours that were conducted at the Native Forest Plants nursery in Chatsworth, GA and the East Tennessee State Nursery in Cleveland, TN. Both nurseries did an excellent job. A special

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thanks to Paul Ensminger and John Conn for hosting the field trips. For those who were unable to attend, we have posted all the presentations on the Nursery Cooperative's website for you to access. If you are unable to access or have any questions about the presentations, please do not hesitate to contact one of us at Auburn. Next year's Contact Meeting will be held in the Henderson, NC region in mid-July, 2013. Trips could include the Cradle of Forestry, the USFS Rust Screening Laboratory, the NC Arboretum and tour the VanWingerden Greenhouse in Mills River, NC. Elizabeth Bowersock is currently searching for a place to conduct the meeting. More details will be forth coming with the Spring 2013 Newsletter.

Personnel Changes

As most of you know, Paul Jackson as accepted a new teaching position at Louisiana Tech in Rustin, LA in the Plant Science department. His first official day on the job was September 4, 2012. Paul can be reached at Email: pjackson@latech.edu; Office Phone: (318) 257-2412; Mailing address: Louisiana Tech University, Department of Agricultural Sciences, P.O. Box 10198, Ruston, LA 71272. Shortly after we heard that Paul was leaving we began interviewing candidates to fill his position. We have made an offer to a candidate will hopefully introduce this new person at the Advisory Meeting in November in Auburn.

Research Proposals Submitted for Funding

At each Advisory Meeting when we are discussing budget issues we normally indicate that the Nursery Cooperative staff is continually looking for opportunities for outside funding. This helps the Nursery Cooperative by bringing outside recognition to our program and, if the grant is approved, it brings funds into the budget that will help your dues go further.

Currently there are three grant projects "in the works". Below you will find a brief description of the proposal and possible dollar amount to be awarded if we are successful.

1. Center for Advanced Forestry Systems (CAFS) is a National Science Foundation Industry/University Cooperative Research Center (NSF I/UCRC) that bridges top forestry research programs with industry members to solve complex, industry-wide problems. CAFS is a multi-university center that works to solve problems through multi-faceted approaches and questions on multiple scales, including molecular, cellular, individual-tree, stand, and ecosystem levels. The Nursery Cooperative is submitting a joint proposal with the Forest Health Cooperative under the umbrella of the Forest Health Dynamics Laboratory which is housed at SFWS. If approved, Auburn University will be the "member" site and we will share $60,000 annually with the Forest Health Cooperative.

2. USFS Special Technical Development Project - Pitch Canker – This proposal will compare the multi-loci genetic marker developed for a rapid screening process that can be used to examine both seed and planting material for the presence and absence of the pitch canker fungus. If you remember, several years ago a representative from UFL spoke to the Advisory Committee meeting about this technology and its capabilities. The objectives of the project are to: (1) Confirm that PCR primers developed for *Fusarium. circinatum* that are specific to that species; and (2) compare the rapid screening protocol to the current blotter paper method to confirm the presence or absence of the pathogen on pine planting material. The proposal is for three years and is for $63,000 per year to bring on a post-doctoral student to develop a method to screen pine seed for pitch canker infestation.

3. Alabama Commerce Grant. To address the issues on forest health throughout the various life stages of a forest tree, the Nursery Cooperative proposed to use the expertise at the Forest Health Dynamics Laboratory and partner with stakeholders to answer questions and propose solutions to address seedling health, productivity, growth, disease and insect management on Alabama's forest land. To determine if what the costs (inputs) might be to produce forest tree seedlings without MBr and assess the effectiveness of pest control programs in the production of loblolly pine seedlings for reforestation of forest lands in Alabama. This grant was for 3 years and we requested $73,000 annually for three years to pay for the salaries of Dr. Starkey, Barry Brooks and Paul Jackson's replacement.

Pesticide News

The Future of Fumigation

The following article is from a grower magazine ('Growing Produce') which provides some interesting points on fumigation from the perspective of another commodity – the strawberry industry. This article also provides some inside information on the fate of methyl iodide. I have made a few comments at the end of the article relating this information to the nursery industry.

Just look at how much has been invested in trying to replace it, says Michael Allan, who recently joined Isagro USA as product manager, fumigants. "Ag, as an industry — I'm not talking about private companies' R&D — has spent $400 million on finding a methyl bromide replacement since it became a part of the Montreal Protocol in 1995," he says.

In 1991, U.S. growers used 58 million pounds of methyl bromide. It was to be completely phased out in the U.S. by 2000, but grower groups pleaded for critical use exemptions to the ban, saying that there was no replacement. It seemed a replacement had been found when methyl iodide was developed. Allan has a unique view of that story, as he worked for the company that submitted the registration for methyl iodide, with the product name Midas, for many years. Allan joined the company, now known as Arysta LifeScience, in 1998, four years before registration was submitted. Back then, in 2002, it was the first new fumigant in more than a quarter-century, says Allan.

However, though methyl iodide received federal registration in 2007, it couldn't crack the critical California market where growers in the state have traditionally used a lot of fumigants for high-dollar crops like strawberries. Finally, in April 2011, the company received registration in California. Allan points out that claims made by groups critical of the product, like the Pesticide Action Network, were bogus. "Nothing in that (nine years of regulatory review) says special treatment," he says, "and that's what the company was accused of." People often don't realize how good something is until they don't have it any more. Such is the case with methyl bromide.

The approval came with a huge host of restrictions and still very little methyl iodide was used. This past spring, Arysta finally pulled the plug on Midas in the U.S. By then Allan was gone, having left Arysta for another job in July of 2011.
The editors of GrowingProduce.com recently caught up with him to ask a few questions. Answers have been paraphrased.

Q: Several groups, such as the California Strawberry Commission, said they were taken aback when Midas was pulled off the market. What happened?

Allan: The decision came down to whether Arysta could afford to keep financially supporting the registration. It typically costs $50 million to register a new active ingredient and Midas was well north of that. Not only were there very few applications of the product, as growers were waiting to see how the situation shook out, but there was all the pressure from the protest groups. They had representatives calling key Ag. counties like Monterey daily to check on methyl iodide applications. Registrants must follow the letter of the law, but opponents don't face such restrictions. Not only that, but there was legal action pending to challenge the California registration.

Q: Now that strawberry growers won't have a so-called drop-in replacement for methyl bromide, how will their farming practices change?

Allan: Their practices have been changing ever since methyl bromide was targeted, such as the implementation of VIF and TIF (virtually and totally impermeable films). Efforts to maintain current fumigants are being stepped up. Pests that used to be secondary are becoming problematic. We never saw diseases such as charcoal rot with methyl bromide. Now it is not only becoming a significant disease, it is affecting growers' ability to farm. There is no easy transition in any crop. For example, breeding is an answer, but that's usually just for one pest and takes years. Maybe the question to ask is: "What does California look like without a $40 billion Ag. industry? And are we willing to risk finding out?"

Q: What should growers know about the future of fumigants?

Allan: As a registrant, we are expending every effort to find alternatives they can use, but it takes years. I hate to tell growers you have to be patient, but we have to make sure a fumigant meets their needs and meets all the requirements of the regulatory process. Growers are going to have to look at all their other practices because they don't have what they could get from that single application of methyl bromide. It will take tenacity for us all to be successful.

Comments on article:
Allan indicates that the Agricultural industry has spent over $400 million dollars in research and development looking for alternatives to methyl bromide. We estimate that the Nursery Cooperative has spent close to $3 million dollars in research funds working with application companies and nurseries on alternative soil fumigation research.

The Nursery Cooperative has said this many times: "People often don't realize how good something is until they don't have it any more. Such is the case with methyl bromide". It is interesting that the strawberry commodity group has been heavily using alternatives and has noticed the diseases that were never a problem with methyl bromide have now appeared e.g. Charcoal Root Rot.

Alternatives are here to stay. Nurseries need to be trying alternatives on at least an acre of land each year. The article ends by describing a new biopesticide fumigant the company is in the process of registering. Registering new "traditional" chemical fumigants will probably be cost prohibitive and take too much time. We recently saw this with sulfuryl fluoride which had gotten to the point of large plot testing and then abruptly pulled by the registrant due to concerns over fluoride in groundwater. The author of the article makes the point that the road to registration for biopesticdes is usually faster and more favorable.

This new biopesticde is at least a couple of years away from registration approval. I spoke with Steve Godbehere who is aware of the product

and working with Michael Allan, at Isagro USA. The Nursery Cooperative will continue to follow trial results and perhaps can place it in a study in a year or so if it looks promising. I will be talking with Michael Allan about the product at the MBAO meeting this November. -- **TS**

A "New" MBr Soil Fumigant Alternative

At the last Contact Meeting, and in a number of phone conversations, we have been trying to make the membership aware of a "new" alternative that you may want to place in a nursery trial the next time you fumigate. Although we are describing this alternative as "new", it is really not new in terms on time on the market. The ingredients in this alternative have been successfully used for many years in the vegetable and row crop industry. The ingredients are not new to our alternative research program either, as we have tested them in many of our methyl bromide alternative research studies.

We have been referring to the alternative as the "3-way" alternative. However, as TriEst (Hendrix & Dail) completes their registration of the compounds we will refer to it as "TE-3". TriEst is working on a final name and tweaking the formula slightly to enhance nutsedge control. TE-3 is a combination of DMDS (Paladin), 1,3-D (Telone II) and chloropicrin.

This combination of fumigants was developed in collaborative work with Dr. Stanley Culpepper, Associate Professor and Extension Agronomist at University of Georgia, Tifton and TriEst Ag Group. The rate tested was 350 lb/acre under VIF. Here is a link if you want to read over a 2012 presentation by Dr. Culpepper: http://gaweed.com/slides/GFVGA-mbalternatives2012/index.html. The product TE-3 is referred to as WSP in this presentation.

Here are some points made in the presentation:

- Use of any alternatives must include additional herbicides.
- WSP tested at 350 lb/a under VIF. Recommended that the rate not be reduced.
- Cost of application was less than methyl bromide 200 lb/a under VIF.
- Due to the DMDS, odor is a concern.
- Effective on nutsedge, crabgrass and pigweed.
- Grasses and broadleaves required additional herbicides.
- Tested on 28 total acres in 2011 (4 different application times).

We know at least one nursery put in a trial this past year. Jim Crittenden at ArborGen's, Georgia SuperTree Nursery in Shellman, GA fumigated one nursery unit with 350 lbs/a under TIF in fall 2011 in a unit with a prostate spurge problem. The DMDS odor was evident, especially when the TIF plastic was removed 5 days later. The unit was left fallow over the winter. The Nursery Cooperative staff has visited this trial several times since the fumigation. Our first visit was about 1 month after tarp removal and while there was no odor present in the air, we could smell the DMDS when disturbing the soil. During our visits after sowing we could not detect any odor that is associated with DMDS. The nursery has maintained its normal herbicide program. In our evaluation in early September, no weed issues were observed in the beds or alleyways. Seedling growth was what is expected on first year land. As Jim rightfully said "First year results look very good, second year results will give us a true evaluation." Jim also said that "This alternative is worth repeating in a trial again." If you have any questions not answered by this article, call Jim.

Why and how should you try TE-3?

- The philosophy of combining fumigants is good.
  - Combination may prove to be more efficacious than any one ingredient alone.
  - Reduces your buffer zones as compared to any one ingredient.
- The Nursery Cooperative and other grower commodities have tested the individual ingredients in many trials with no negative plant effects.
- The odor problem with TE-3 is not as offensive as when we tested DMDS alone. But, the odor is

20 Years Ago...

The Fall 1992 Nursery Cooperative newsletter research reports discussed control of lygus damage with systemic insecticides; the application of Arsenal over varying diameter classes of slash pine; a computer vision system for measuring pine seedlings, efficacies of alternative soil fumigants; and the positive results of finding an alternative (SAN619) for Bayleton. The section on Production Technology discussed the results of mixing Viterra and Benomyl to improve storability of seedlings; a uniform seedling study comparing mixed and half-sib seed lots. In the section on Pesticides, progress was discussed of the 24-C label for Pounce; a discussion of Worker Protection Standards; and a change in the DuPont atrazine label for forestry. The final note in Fall 1992 was the closing of 4 nurseries; Miller Nursery (Autaugaville, AL), Kimberley Clark Nursery (Coosa Pines, AL), Salem Nursery (Salem, SC) and the Tilghman Nursery (Wedgefield, SC). The first three of these nurseries were on fine textured soil with sand content ranging from 40% to 67%. -- **TS**

still present.
    - To reduce the odor be sure that your soil moisture at the time of fumigation is proper for your soil type.
    - To reduce the odor be sure that you breakup as much of the previous crop residue as possible.
- Try 350 lb/a under TIF alone – not HDPE.
- Fall fumigation will probably mitigate the odor more effectively than spring fumigation.
- Keep the plastic down 5 – 10 days after fumigation. The TIF plastic does not have the tear and blow-away problems associated HDPE plastic.
- Pick a problematic weed unit to test the compound.
- Limit your first year test to one unit or 1 acre so you can evaluate it on your soils.
- Two of the three products in TE-3 are labeled for use in forest nurseries. The DMDS component is not currently labeled. Therefore, any applications must fall under the 10 acre rule according to FIFRA. A nursery can test any chemical on any pest if the intent is to gather data for labeling purposes. You do not need an EUP. This is in accord with Section 5 of FIFRA, 7 U.S.C. 136c and 40 CFR part 172.
- Let the Nursery Cooperative know of your intent and we can suggest some data for you to collect to help with the labeling if these small tests area show promising results. EPA and the company manufacturing DMDS needs data for labeling approval.

Please let the Nursery Cooperative know if you intend to try TE-3 on a small section or if you would like to have a replicated study at your nursery. We will be glad to assist and collect the appropriate data if necessary. -- **TS**

Research News

Pendulum® AquaCap™ vs. Pendulum® 3.3 EC

Results from previous Nursery Cooperative Pendulum® AquaCap™ (PAC) trials have indicated that both the amount and timing of PAC application can affect herbicide gall formation on seedling stems. Applying PAC before seed germination at a rate of 1 lb a.i./ac reduces the chance of herbicide gall formation compared to applications of PAC after seed germination at 2 lb a.i./ac. The Nursery Cooperative has yet to find a link to other possible contributing factors to gall formation such as genotype, soil type, organic matter, and temperature.

In 2011, we tested another formulation of pendimethalin, Pendulum® 3.3 EC (Pen EC), to determine the efficacy of this compound on prostrate spurge control and its effect on herbicide gall formation. Pendulum® 3.3 EC was applied at 39 and 78 oz/ac (1 and 2 lb a.i./ac) and Pendulum® AquaCap™ at 34 and 68 oz/ac (1 and 2 lb a.i./ac) at time of sowing on loblolly pine at three nurseries (Table 1).

Some of the Pen EC treatments caused galls or swellings on seedling stems but did not resemble the typical spindle-shaped, protruding gall that we have observed (Figure 1). Like PAC, the Pen EC 2X treatment produced the most swellings followed by the PAC 2X treatment (Table 1). Like previous trials with this compound, the herbicide treatments provided good prostrate spurge control compared to non-treated areas (Table 1).

The results in this trial reaffirm as the rate of pendimethalin increases, so does the chance for herbicide galls. However, while the herbicide treatments were applied at time of sowing, herbicide galls were observed. In each nursery, the elapsed time between the day of sowing and the day of herbicide application was 6 days. It is possible that some seed had germinated and the herbicide affected growing root tips.

It is important to define the term "at sowing" when it pertains to applying pendimethalin. Depending on seed genetics, length of stratification, nursery cultural practices and weather, the number of days between sowing and when germination begins will vary among nurseries. A seed is considered germinated when the seed coat is broken and the radicle has emerged (even if the seed has not lifted from the soil). Applying pendimethalin 6 days after sowing could result in an application to germinated seed, thus increasing the chance of gall formation. If possible, it is critical that pendimethalin be applied immediately following sowing and no more than 3 days post-sowing. -- **PJ**

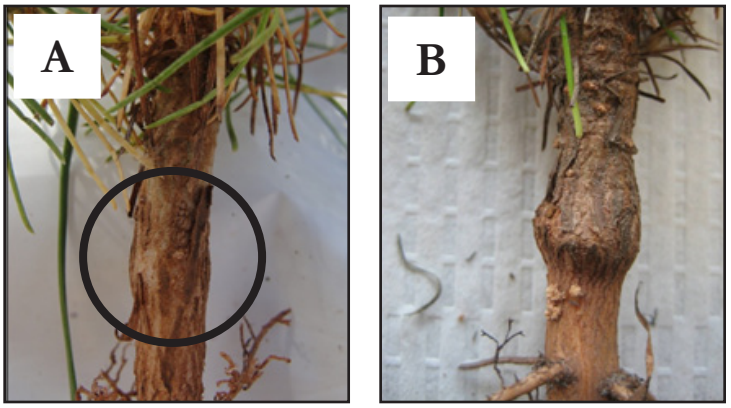


Figure 1. A) A slight gall or swelling after applying Pendulum® AquaCap™ and Pendulum® 3.3 EC 6 days following sowing in 2011and B) an example of a typical herbicide gall induced by Pendulum® AquaCap™ in a previous Nursery Cooperative trial.

Table 1. Herbicide treatments and the number of herbicide galls and amounts of prostrate spurge after applications of a Pendulum® AquaCap™ and Pendulum® 3.3 EC in three nurseries in 2011.

		Herbicide galls (#)			Spurge Dry Weight (g)		
Treatment	Rate (oz prod/ac)	Blenheim	Camden	Elberta	Blenheim	Camden	Elberta
Control	-------	0	0	0	32	160	0
PAC 1X	34	1	3	2	0.64	0.60	0
PAC 2X	68	7	34	0	0	0	0
Pen EC 1X	39	0	7	0	0	0.76	0
Pen EC 2X	78	36	32	3	0	0	0

2012 - Longleaf Pine Cone Crop Failure

Since 1966 the Southern Research Station, USDA Forest Service in Auburn, AL has been conducting a yearly comprehensive evaluation of the longleaf cone crop in the southern region. This year, Dale Brockway and Bill Boyer have predicted a failure for the 2012 longleaf cone crop. From their survey, they estimate an average of 4.5 cones per tree and predict that based on flower counts observed in 2012, the 2013 cone crop will not be much better than 2012.

Classification of longleaf pine cone crops.

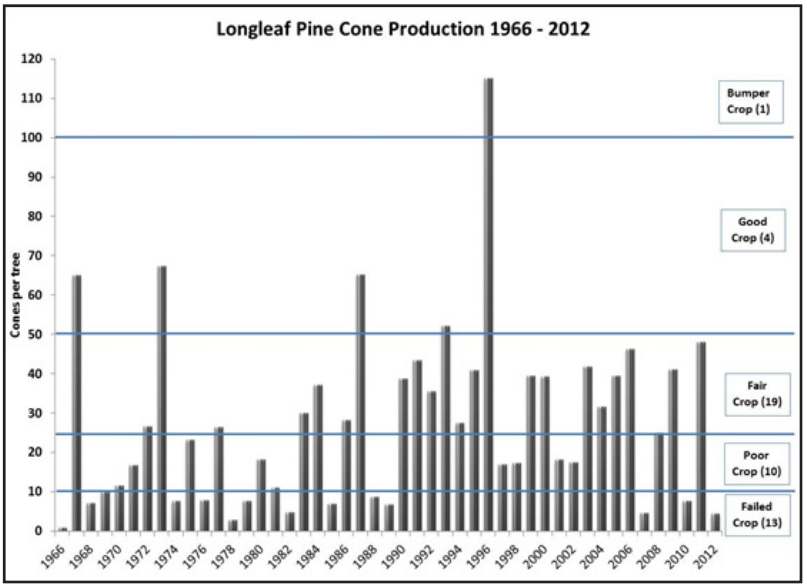
Crop Quality	Cones per Tree	Cones per Acre*
Bumper Crop	> 100	>2500
Good Crop	50 to 99	1250 to 2475
Fair Crop	25 to 49	625 to 1225
Poor Crop	10 to 24	250 to 600
Failed Crop	< 10	<250

**based upon 25 trees per acre*

Longleaf pine cone crops have been grouped into five different crop classifications as are described in the following table. Those involved with natural regeneration consider 750 cones per acre a minimum to obtain a successful even-aged stand.

If you grow longleaf pine seedlings you already know that the year to year variation in availability of longleaf seed can result in sleepless nights. Nurseries have learned to purchase seed for storage during the good years because the erratic cone production of longleaf pine is not like that of loblolly pine. The average cone production over the last 47 years has been 27.5 cones per tree and cone production has varied from a minimum of 1 cone per tree in 1966 to a maximum of 115 cones per tree in 1996. The following graph from their data presents some interesting points:

On the right is the cone crop classification followed by the number of years this has occurred. Since 1966, there have been 4 years when the longleaf pine cone production was categorized as a "Good Crop". The estimate for 2012 of 4.5 cones per tree is the third lowest since the cone survey began. Cone categories "Fair" or better have occurred during 51% of all years since 1966, with an increasing frequency since 1983. Brockway and Boyer do not know the reason for this increasing frequency.



So, does an average of 4.5 cones per tree mean you should ignore the possibility of finding longleaf seed this year? Absolutely not. There may be some regions in the southern US that have a sufficient number of cones (for collection) to meet your sowing/production needs. However, I would not expect to find much above the range of this data which was 0.6 to 10 cones per tree. The Forest Service survey for the region is based upon 10 sites; 1 in Louisiana, 1 in Alabama, 4 in Florida, 2 in Georgia, 1 in South Carolina and 1 in North Carolina. If you need a specific longleaf seed source, it may be worth asking some of your seed suppliers before you write off longleaf seed for this year. -- **TS**

Nursery 101

How do beneficial soil microorganisms protect my seedlings?

Not all bacteria, fungi, and other microorganisms living in the soil are harmful. In fact, in recent years a whole new market of products have developed that capitalize on using beneficial bacteria and fungi as a means to promoting seedling growth, suppressing diseases or both. One of the larger producers of these products is BioWorks, Inc. out of New York. RootShield® and PlantShield® are two that you have probably seen advertised. These products contain the benefical fungus Trichoderma.

To obtain maximum results it is important that you understand before using the advantages, disadvantages, general biology and requirements of these products. Perhaps the key point about these products is that they are best applied before you have problems. That is, they generally work best at preventing rather than curing diseases. There are many factors that can affect the establishment and longevity of these organisms which are key to obtaining the results you desire. Such factor as soil/media pH, temperature, humidity and the use of pesticides all need to be considered. In general, one treatment is not sufficient for full season control.

These beneficial organisms control seedling diseases by one of the following mechanisms:

1. **Predation or hyper-parasitism.** Beneficial organisms attack and feed on pathogens thus preventing disease.

2. **Antagonsim or microbiostatis.** As the beneficial organisms colonize the area around the seedling roots they produce metabolites that either kill or inhibit the growth of pathogens.

3. **Rhizosphere competency.** As the beneficial organisms grow around and on the roots they can physically block the pathogens from attacking the roots.

4. **Induced systemic resistance or systemic acquired resistance.** This mechanism stimulates the plant to activate its own defense system. This is similar to the mode of action of the class of fungicides called "Phosphonates" that were discussed in the Spring 2011 Newsletter.

Before using any of these products, look at the timing and other label requirement carefully. -- **TS**

Record Temperatures
A roller Coaster Ride

One nursery manager reported pine seed from the October 2011 crop was smaller than normal. The "smaller than normal" may be due to a record high summer temp for the 2010 growing season followed by the second highest summer temperatures for the 2011 growing season.

Dwight Stallard reported that in Virginia this past winter his seedlings did not get as purple as expected. The temperatures from December 2011 to February 2012 were the warmest in the last 117 years in Norfolk, Va.

Throughout the south this past spring (March to May) had the warmest temperatures in 118 years. The second warmest year prior to 2012 was in 1908. However, June in the southern US ranked at one of the cooler months on record. July was back to the top ranking as the third hottest month in 118 years (in addition, globally, July had the fourth highest temperatures on record). The temperatures in August moderated considerably thanks to the increased precipitation which made August the 10th wettest month on record.

Leadership 101

Improve Your Communication - Seven Easy Steps

In last December's issue of "Garden Center Weekly," there was a good article that described seven steps to improve communication between supervisors and employees. The ability to communicate is especially important for supervisors who want to improve nursery operations and increase the performance and productivity of their coworkers.

When surveys have been taken of workers concerns and areas they would like to see improved, communication (more and honest) always ranks at the top of the list. Studies have shown that when there is a lack of good communication employee productivity decreases, worker tensions increase and, absenteeism and turnovers increase.

Here are seven ways to improve communication:

1. **Emphasize personal communication.** My wife is the communicator in our family and she hates email communication because she sees it as impersonal, cold and many times distant. Although convenient, voice

messages and emails have become a reality for many leaders. No one likes to hear about company policy or management decisions by these methods. Leaders should stress face-to-face meetings where possible.

2. **Communication is a two-way process… not a monologue.** Communication is a two-way process that involves both giving information and receiving feedback. The leader is only 50% successful if they stop with their message and does ask for feedback.

3. **Be specific and detailed.** Most miscommunication occurs when the leader uses either vague statements or instructions. Vagueness leads to open interpretation of what you want and fosters an attitude of confusion. Remember, as a leader you may be privileged to more information than your co-workers. Don't assume that they know the whole story.

4. **Information may be power, but it is also a service.** The phrase "information is power" is commonly heard but when it comes to improving communication between leaders and co-workers it needs to be viewed as a service. Providing information should be viewed as a way to increase productivity and allow co-workers to take ownership in the topic.

5. **Show Respect.** Sharing information, asking questions and clarifying key points need to be done in a manner that demonstrates mutual respect. Remember, body language tells others how you really feel about the subject matter.

6. **Seek to Build Credibility.** If you lack personal credibility you can never succeed as a leader or effective communicator. There are several ways to build credibility. First and foremost, do what you say you are going to do. Second, take time to interact and be among your employees. Encourage open discussions whether they agree or disagree with you. Also as I have discussed in previous leadership article, get to know what makes your employees "tick". What consumes their non-working hours? Is it family, health issues, sports, or an outdoor activity? Once you know, it gives you a point of personal connection in future meetings.

7. **Take control of meetings.** If you want to increase your effectiveness as a communicator, take control of your meetings by having an agenda to discuss, keeping the meeting moving, allowing and encouraging participation by all, and addressing, not ignoring conflicts. -- **TS**

Other News & Notes

Why Your Company Should Consider a Nursery Internship

Background:

Having the Southern Forest Nursery Management Cooperative headquartered at Auburn University provides the staff of the Nursery Cooperative with a unique opportunity to interact, evaluate and encourage students interested in forest regeneration and seedling culture. Students graduating in the School of Forestry & Wildlife Sciences are also a source of future employment for your company. All of the students graduating with a forestry major are required to take a course in "Forest Health" in which the role diseases and insects in nurseries are covered. Student can also elect to take a course in "Forest Regeneration and Seedling Production". Students taking these courses frequently ask the question "Do any nurseries within the Nursery Cooperative offer summer internships so we can learn more about nurseries and seedling production"?

Goals of an Internship:

1. To provide the intern with an inside glimpse of your company and the nursery industry.
2. To provide a broad work experience where the intern has the opportunity to work alongside your various staff members. It should allow the intern to experience all aspects of seedling culture, from the mundane to the more detailed activities.
3. Make the intern feel part of your team by providing regular feedback.
4. Provide insight and instruction as to the importance of their work.

Benefits of an Internship for the Student:

1. Provides the intern with the opportunity to reinforce concepts they have learned in the classroom in the real world and learn more about the nursery profession.
2. Provides them with the opportunity to "test-drive" a career before graduation to determine if it is really for them.
3. Provide them with the opportunity to gain experience in all areas of nursery production.
4. Provides an edge to the intern when they are competing for a job in the future.
5. Provide the intern with a network of contacts which will be beneficial in the future.
6. Provides them with the opportunity to learn new skills.
7. Provides the intern the opportunity to earn money in a field in which they have an interest.

Benefits of an Internship for a Nursery:

1. Provide you with an opportunity to assist in the training of an individual that is interested in nurseries

and seedling production. It is more than "just a job" for these interns.
2. Provides you with the opportunity to showcase your company's goals and mission.
3. Provides you the opportunity to evaluate a potential future employee. *Note: internships do not have the stipulation of future employment.*
4. Provides you with the opportunity to impact the life of a person that may in the future be a customer or recommend another customer to you.
5. Interns can increase your productivity. Students are motivated and desire to prove themselves.

If you are interested or would like more information, contact either Scott Enebak or Tom Starkey. -- **TS**

Nursery Cooperative Research Scientists Receive Award

At the 2012 joint meeting of the Southern Forest Insect Work Conference (SFIWC) and the Southwide Forest Disease Workshop (SWFDW) held this past July in Charlottesville, VA two Nursery Cooperative published research papers won region-wide awards.

The "2012 Outstanding Forest Pathology Research Paper" was awarded for: Enebak, S.A., T.E. Starkey and M. Quicke. 2011. Effect of methyl bromide alternatives on seedling quality, nematodes and pathogenic soil fungi at the Jesup and Glennville Nurseries in Georgia: 2007 to 2008 Journal of Horticulture and Forestry Vol. 3: 150-158.

The "2012 Outstanding Forest Pathology Extension Paper" was awarded for: Starkey, T.E., S.A. Enebak, D.B. South and R.E. Cross. 2012 Particle Size of Polymer Root Gels Affect Seedling Survival of Loblolly Pine. Native Plant Journal. 13: 19-26.

Herbicide Tolerant Weeds Fosters Significant Increase for Pesticides

September 17, 2012 "AgroNews E-Weekly"

Global demand for formulated pesticide products will approach $57 billion in 2016, driven by demand for value-added, proprietary formulations, particularly those that combat increasingly resistant pest populations while addressing growing concerns about pesticide safety, according to a new report "World Agricultural Pesticides Market" published by the Freedonia Group. Herbicides are the largest product type by value, while fungicides are expected to show the strongest growth. Insecticide growth will be significantly constrained by the growing popularity of integrated pest management techniques and continued concern about adverse effects.

Rapid growth in the cultivation of herbicide-tolerant crop varieties over the past decade has helped drive strong growth in herbicide demand since 2001 and contributed to significant increases in agricultural productivity. However, these advances have not come without a cost, as some farmers have overused particular active ingredients, especially glyphosate. This has led to a growing problem with weed resistance in almost every region. This problem is forcing changes in how farmers use herbicides, and growers are increasingly turning to formulations with more than one mode of action, and/or are using increasing amounts of herbicide, to guarantee extensive protection from weeds. Both choices will contribute to rising herbicide value demand going forward, helping to drive advances.

Unlike herbicides, which are used on almost every crop, insecticides are generally used on an as-needed basis, as insect populations are largely influenced by weather conditions. Additionally, insecticide use is influenced by the cultivation of crops with insecticidal Bacillus thuringiensis (Bt) traits, which limit the need for additional insecticides. However, the prevalence of Bt crops in some regions has led to resistant insect populations, providing an opportunity for insecticide growth in certain markets. Insecticides are widely used in warmer regions, where the local climate provides a hospitable environment for insect populations to flourish. Insecticides are also associated with more concerns related to environmental safety and public health. For example, organophosphate demand continues to drop due to concerns over potential adverse effects. In addition, neonicotinoid insecticides, prominent replacements for organophosphates, may be implicated in honeybee colony collapse disorder. Demand for insecticides in the future will continue to be impacted by changing insect management practices, amid concerns about environmental and human health.

Fungicide demand is projected to show strong gains as growers in all regions of the world shift away from commodity type products like copper and sulfur, in favor of higher value specialty fungicides. This change is substantially impacted by a growing need to increase agricultural productivity, particularly in countries that are dependent on fungicide- heavy crops like rice. Additionally, the high value of crops like grapes and other specialty crops motivates farmers to invest in new fungicide technologies. This growth is expected to be fastest in developing regions, where the synthetic fungicide markets are less mature.

As newer compounds come onto the agricultural market it will offer us an opportunity to test these pesticides in forest-tree nursery production system for pests that limit seedling production. This was how we stumbled upon Proline – a fungicide for soybean rust. -- **TS**

List of Nursery Retirees

Below is a list of nursery retirees sent to Robert Cross. Please let Robert or Tom Starkey know of any corrections, additions, or omissions. We would like to ensure that they each receive a copy of the newsletter. Thank you!

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Container Growers

If you do not subscribe to the free magazine "Greenhouse Management" or "Nursery Management" you are missing a wealth of good information. The upcoming October, 2012 issue of "Greenhouse Management" focuses on pH and EC. The first article is titled "Selection, care and benefits of pH and EC meters." This article describes the various types of pH and EC meters from portable to desk-top. The care and limitations of these meters are discussed also. Using pH and EC meters are key grower tools for monitoring water, fertilizer solution(s) and growing media. The benefits of these meters far outweigh the initial cost. Measuring pH and EC values allow the grower to make adjustments and fine-tune inputs for best seedling results.

Contact Us!

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The second article in this issue discussed various methods for measuring the pH and EC of your irrigation water or media. Remember to calibrate your pH and EC equipment before any testing to be sure the results obtained are accurate. With these test results, you can verify if your fertilizer program is delivering the correct nutrients to your crop or you can make adjustments if needed. It is especially important that growers regularly monitor their media pH. It is easier to make management changes in mid-summer than in mid-October when you realize your media pH has changed and your seedlings are chlorotic.

The third article in this issue discusses the difference between water alkalinity and pH and how these may or may not influence the pH of your media. This article provides several good examples of why it is important to know both your water pH and alkalinity. We have member nurseries in the Cooperative that must inject acid to control media pH and others that do not need to inject acid. Do you know for sure what your container nursery needs with respect to media pH, soil and water alkalinity? -- TS

Just for Fun!

Congratulations to B.J. Hampton, Arborgen, Arkansas who was the first to correctly identify the pictures and link in the Spring 2012 Newsletter to be Ken Woody who helped build the Blenheim SC Nursery!