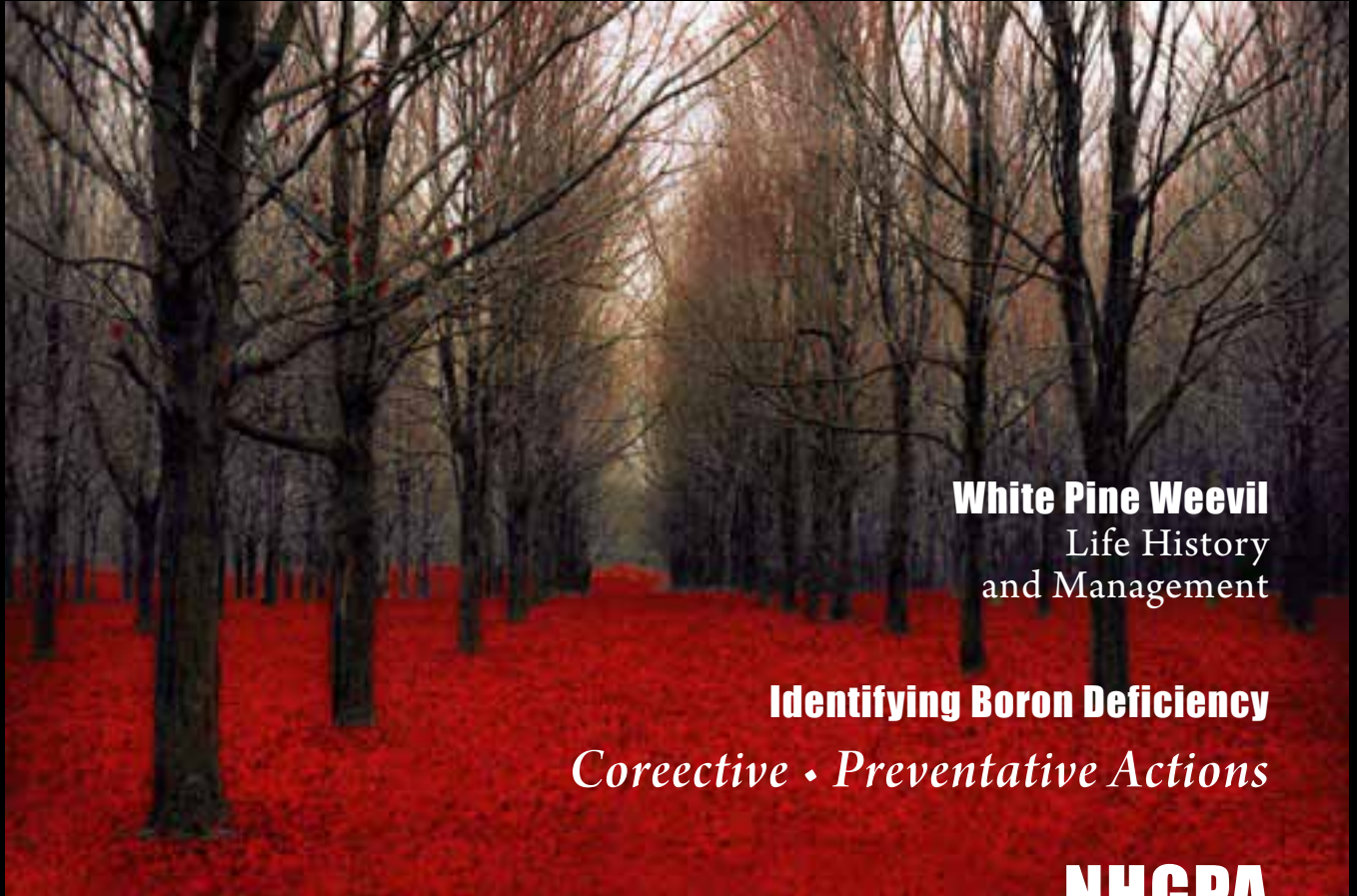


the **PLANTSMAN**

October · November 2011



White Pine Weevil
Life History
and Management

Identifying Boron Deficiency
Coreective · Preventative Actions

NHGPA

Board of Directors Meeting

Keeping Count

Inventory Management Method

NHHE

Annual Report 2010

*Wildflower Meadow Establishment &
Seedling Identification Guide*

NHPGA MEMBERS help your association raise funds to support educational and scholarship programs by purchasing kneepads specially designed just for us. They are made of very durable foam material that will stand up to all the abuse a gardener can put them through. Kneepads measure 16 x 10" and are almost an inch thick. Wentworth Greenhouses had no trouble selling several cases.

Don't Just Stand There

Let the beauty we love be what we do;
there are hundreds of ways to kneel and
kiss the ground. - Rumi

Case of 24 sell for \$144.00. This works out to only \$6.00 a pad. Shipping and Handling is \$15.00 per case or they may be picked up at Wentworth Greenhouse, Rollingsford, New Hampshire.

To order please contact the NHPGA at 603.244.8473 or executivedirector@nhpga.org



NHPGA Board of Directors



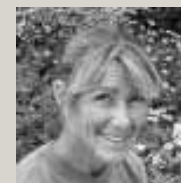
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Classification

table of contents

Branch *from the board*

- 1 Association Officers
- 3 From the Board
NHPGA Board of Directors Meeting
- 4 Keeping Count
- 16 NHPGA Membership Form 2011-2012
- 21 Streamlining the way NHPHA Networks

the Grapevine *announcements*

- 3 Advancing Communication

Unearthed *featured articles*

- 6 Identifying Boron Deficiency
Corrective • Preventative Action
- 8 Life History & Management
of White Pine Weevil
- 14 Wildflower Meadow Establishment
& Seedling Identificaton Guide
- 16 NHPGA • NHHE
2010 Annual Report





FROM THE BOARD
FROM THE BOARD
FROM THE BOARD

August 9, 2011

NHPGA

Board of Directors Meeting

STARBUCKS IN EPPING

The meeting was called to order at 6:00pm at Starbucks in Epping. Present were Brett Andrus, Brian Krug, Matt McElroy, Robert Demers, and Chris Schlegel.

FINANCIALS

Brett reported that there is about \$9700 in the bank account. There is a \$500 bill for the Website that will cover 3 years. There will also be a payment of \$400 made to the Hort Endowment Fund. Brett received a check from UNH which he will look into. There seems to be confusion since they were recently requesting payment they felt was due from NHPGA. Kim will also be submitting a bill for The Plantsman.

MEMBERSHIP

Membership letters will be mailed out in August. Robert volunteered to create the letter. There was discussion about whether to include solicitation for sponsorship of ads in The Plantsman or on the Website with the dues letter. The consensus was that we would wait on ad information.

It was suggested that the letter include a request for e-mail addresses. It also should include a statement about the Website being live by October 1st. A separate sheet could be included in color with an example of the banner ads. Kim will draft a letter about the change in advertising. One side of the sheet could include a half page picture of the ad design and a half page of specs. The back could include information about the new format. Brian could get color copies for free at UNH as long as the number does not exceed a couple hundred copies.

continued on p10...

Keeping Count



Tyler Matteson
Farm Credit

Solid inventory analysis takes the guess work out of what is making you money and what isn't. Farm Credit East, ACA can help you, the grower, with inventory analysis by reorganizing your records and setting up analysis tools for you to work with on an ongoing basis. To discuss what services may provide value to your business; please contact Farm Credit East, ACA at 1-800-825-3252. This article is reprinted from the April 2011 issue of Green Profit Magazine.

Two truths about the Garden Center business: 1) if you don't sell product, you don't make money, 2) if you don't make money, you don't stay in business. Besides, if you don't stay in business and make money, you don't get to take a vacation. Just kidding; who takes vacations anyway?

Seriously, this short article has the "magic bullet" idea you've needed so that this season you can make money selling product. You have things that need to get potted, racks that need to be cleaned, and a whole lot of space that needs to be in selling shape by yesterday. But for your long-term benefit you're going to read this article now.

A solid inventory analysis can be the magic bullet you need. It lets you do more with what you have. It tells you what is making money and what isn't. It can keep you in business, or take a strong business to the next level. For a garden center, it is one of the most cost effective analyses you can do to increase profitability. It can tell you if the dollars you invested are working well for you.

There are three distinct approaches to managing your inventory: instinctual, historical and analytical.

INVENTORY MANAGEMENT METHODS (FROM 30,000 FEET)

Instinctual is just what it sounds like: it's using your gut to make purchasing decisions and waiting to see if those decisions were good. It's a little seat-of-the-pants, but for many, it's an important part of the decision process, particularly for new items or things you haven't offered before. The main ingredient for success is having confidence that you've got the knack for buying what's hot, then proving your skill by selling fast and hard.

continued on p5 ...

...Boron Deficiency

continued from p4

The second approach is historical, which is reviewing your purchases and sales data from the previous year and extrapolating a decision about how much to buy and what to charge for it in the coming season.

For many smaller operations a historical inventory analysis works very well, but it can backfire. It can make you nervous and make decisions that aren't aggressive enough. And without some additional analysis it tends to tell you a whole lot more about your past mistakes than your future successes.

You could be buying too much of a product that sold well last year and be forced to sell it at a discount this year. If looking for new winners isn't part of your product decision-making for the next year, you may find yourself in trouble in future seasons. You'll find that product representatives are famously willing to help you choose which of their goods to buy. Your success lies in balancing your historical data with the salesperson's trendy recommendations.

The analytical method is vast to the point of intimidation. It involves dozens of ways to identify strong or weak margins from the level of your entire business down to a single product line. But before you decide that it's too big a task, consider that a decision not to do any analysis will likely leave money on the table. Inventory analysis benefits your business just by thinking about it. Once you understand the following analytical tools, your perspective will change and you'll want to know what's best for your bottom line.

DIG DEEPER INTO YOUR RECORDS

Physical turns of inventory looks at how many products actually moved through a given retail space. The calculation is straightforward: units per area over time. The more specific the product or space that you're analyzing, the more useful your data will be. Generally speaking, green industry veterans are experts at resourceful use of their growing space and take pride in that efficiency. Unleash that competency on your retail space.

In the garden center business, there is a wide range of benchmarks for turns, depending on the product. Hanging baskets or herbs will turn relatively quickly, while larger nursery stock may remain unsold for more than one season. Generating the expected number of turns for these different types of products requires detailed knowledge of product and carrying costs. You've got to have records of what you have done in the past in order to turn that information into future income.

For many, the challenge is changing their records from a compliance level useful for tax preparation into a more meaningful management tool. Usually the first change (and challenge) is to align your sales categories, COGS categories, and inventory categories. This sets up a basic but powerful profitability-analysis tool. Allocating labor expense appropriately between growing, selling and management responsibilities often seems impossible until you actually commit to counting how your workers spend their time. Without keeping track of the time spent on each task, how do you know if it is money well spent?



Looking at your Gross Margin Percentage for your entire inventory is a good start, allowing comparison of historical data from year to year. While it's useful to compare monthly sales, like June 2010 to June 2009, that will only tell if you bought and sold well, not what you bought and sold well. Gross Margin

continued on p13 ...

Identifying Boron Deficiency and Corrective • Preventative Actions



Pansy (above) and petunia (left) demonstrating symptoms of Boron deficiency. Photos by Brian Krug, UNH

Neil Mattson
Department of Horticulture,
Cornell University
Cooperative Extension

Brian Krug
UNIVERSITY of NEW HAMPSHIRE
COOPERATIVE EXTENSION

SYMPTOMS: Boron (B) is classified as an immobile element in plants; once B has been taken up by the plant it cannot be reallocated to other portions of the plant when Boron availability in the substrate is limited. As with other immobile elements, symptoms first appear on new leaves. Boron is required to build plant cell walls, therefore, when not enough B is available the areas of the plant with rapidly growing new cells (i.e. the growing point and new leaves are affected first). The growing point often aborts (effectively “pinching” the plant) this leads to proliferation of branches. The branches and new growth are distorted, thick, and brittle; also the upper foliage can exhibit a mottled chlorosis (i.e. scattered yellowing of leaves). When the roots are examined they are often short and stubby. Unlike most nutrient deficiencies that typically exhibit symptoms uniformly across the crop, B symptoms can appear randomly within a crop, section, or even flat/pot.

... Boron Deficiency *continued from p6*

CAUSES:

Boron is absorbed by plant roots and moved through the plant in the transpiration stream, and similar to Calcium active water movement through the plant is required to drive B uptake. Conditions that can cause B deficiency include: low B in tap water or fertilizer, high calcium levels (which can inhibit B uptake), inactive roots (waterlogged or dry soil, cold root-zone), high humidity, soil packed too tightly, or high pH. B deficiency is most often noted on Pansy and Petunia plants – especially those growing with a limited soil volume (i.e. in plug trays or packs).

PREVENTION AND SOLUTIONS:

Prevention is key. While plants that exhibit B deficiency symptoms usually recover after corrective measures have been taken, the time required for recovery will be lengthy. In many cases B deficiency occurs early in the germination/seedling stage (in particular with pansy and petunia). At this growth stage symptoms of B deficiency are subtle and often go unnoticed. Symptoms may become more obvious later in production although the actual deficiency conditions occurred earlier. Therefore, proactive cultural practices to prevent B deficiency from developing, especially for crops with a history of B deficiency, are most effective. Cultural practices that can help prevent B deficiency from developing include: avoid overwatering plug trays and flats, lowering greenhouse humidity by venting in outside air, using fans to promote air movement, or raising greenhouse/ root-zone temperatures. Drench applications with a B containing

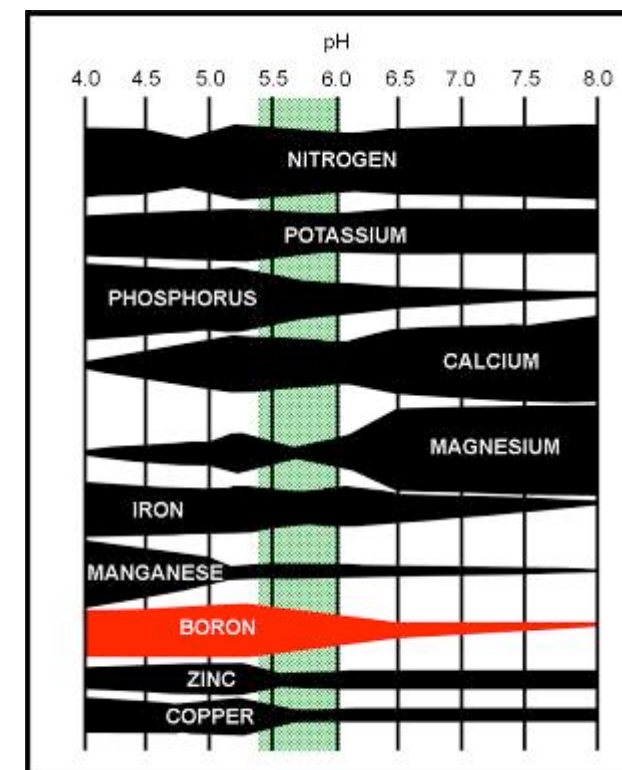
product can also be used for preventative and corrective measures. Use caution when applying supplemental B; plants require only a small amount of B and over application of B leading to toxicity is easily done.

Some products that can be used:

- Soluble Trace Element Mix (S.T.E.M.) at 4 ounces per 100 gallons (supplies 4 ppm B plus other trace elements)
- Borax (11% Boron) at 0.75 ounces per 100 gallons (supplies 6 ppm B)
- Solubor (20% Boron) at 0.4 ounces per 100 gallons (supplies 6 ppm B)

Note: Trade names used herein are for convenience only. No endorsement of products is intended, nor is criticism of unnamed products implied. Cooperative Extension assumes no liability for the effectiveness or results of an product. ■

AVAILABILITY OF BORON IS RELATED TO ROOT-ZONE PH



Graph by Doug Bailey, North Carolina State University

The graph on the left illustrates relative nutrient availability as a function of substrate pH.

High pH favors Boron deficiency.

Occasionally, if tap water contains too much Boron, low pH can favor Boron toxicity.

continued on p7...

Dr. Stanley Swier
 Extension Professor
 Department of Biological Sciences
 University of New Hampshire

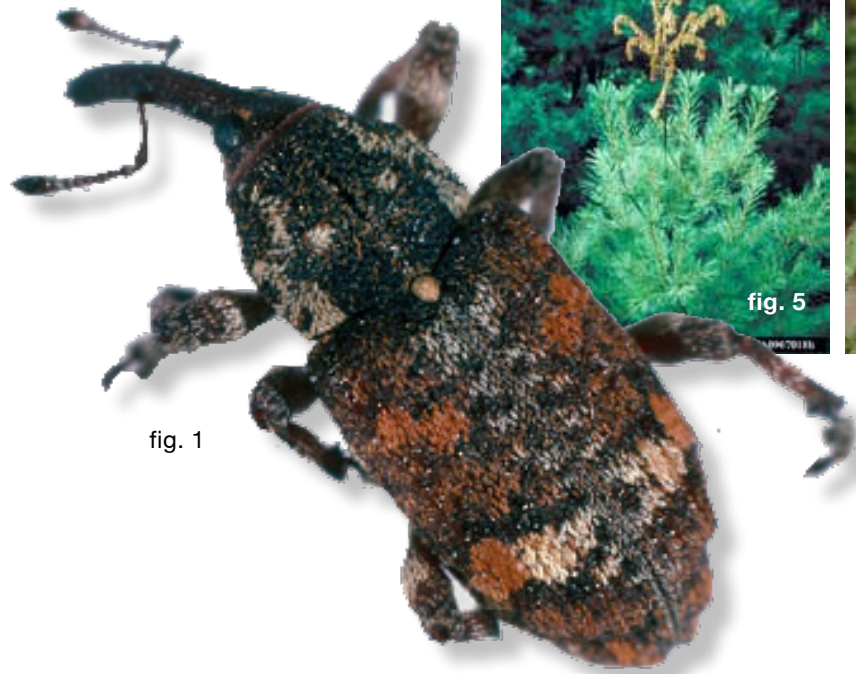


fig. 1



fig. 5



fig. 6



fig. 7



fig. 8



fig. 9



fig. 2



fig. 4

Life History and Management of White Pine Weevil

The White Pine Weevil (WPW) is a native pest to the United States. It's favorite host plants are eastern white pine, jack pine, Japanese pine, limber pine, Scots pine, mugo pine, Norway spruce, blue spruce, red spruce, white spruce, and Douglas fir. Other pine, fir, and spruce species are not commonly attacked.

WPW has 1 generation per year. The adult weevil is about 7 mm (.26 in) long, brown with white and tan spots (fig.1). The adult spends the winter in the litter under its host tree. In the spring (April-May), the adults climb the tree and mating occurs. Adults will feed below the terminal bud cluster. Soon, the female chews a hole in the terminal leader and lays eggs in a small cluster. Oozing sap is a sign of feeding (fig.2).

Oviposition holes are covered with excrement and do not ooze. The larvae are white and legless and about 10mm (.38 in) long when grown (fig. 3). The larvae burrow in the leader just below the bark (fig.4). By June or July the leader wilts and usually dies (fig. 5 and 6). The larvae can kill up to 3-4 years of growth. Often 1-2 lateral leaders assume dominance and continue growing. In mid to late summer, the larvae produce chip cocoons. Soon, the new adults emerge from the leader making noticeable emergence holes (fig. 7). These adults will feed throughout the summer and fall.

WPW causes millions of dollars of damage to forest and landscape trees. Small trees can die. Secondary invaders enter the wounds. There is a significant loss of growth. The crooked and forking stems degrade the logs severely (fig. 8). The resulting lumber is weakened and scarred (fig. 9). Nursery plants and

Christmas trees are unsaleable. Landscape trees look unsightly. In southern NH, on small landscape and nursery trees, WPW adults can be controlled by spraying the leader with a pyrethroid (bifenthrin, etc.) about April 15 and if necessary, repeat 2 weeks later. If using degree days, the first spray should be around 50 GDD, or just before full bloom Forsythia. Also, scout for the oozing sap. If present, it's time to spray. Once the larvae are inside the leader, control is difficult. The damaged leader can also be removed as soon wilting is noticed. ■



fig. 3

* images from www.ipmimages.org.

...board meeting
continued from p3

THE PLANTSMAN

Kim recommended that we consider eliminating ads in The Plantsman and just offer banner ads on the Website. This means the content would be ad-free. Kim will make a sample Plantsman with the ads removed.

Brian suggested putting The Plantsman on hold and concentrating on the Website and the partnership with NHFB.

WEBSITE

There was discussion revolving around the ads that would be offered on the website. There are 22 pages on the website. We could offer 3 or 4 sizes and could have animated banners so there could be 3 per page to include more advertisers.

The other option, which was preferred by board members, is to have the banner ad chosen randomly from the file of advertisers. It would be different every time and would not favor any particular advertiser. The banner ad could link to the advertiser's website. The cost would be \$100.00. It was noted that there was an annual amount of \$6600 in Plantsman ad revenue.

In the future, an advertiser could opt to have their banner ad in the database multiple times. For example, for \$300 it would be put in the database three times and would increase frequency of viewing.

The size of the banner ads was discussed and it was noted that the height of the logos would need to be a predetermined size. The widths would differ but any open space could be filled with pictures. Kim agreed that we could say that an in-house designer could assist with the banner ad design for a nominal fee. This would go through Kim and not through NHPGA.

Upcoming events for listing should be sent to Kim. This could be offered as a courtesy to NHPGA members unless it becomes overwhelming. It could be limited to one sentence and a link to a Website.

Kim also needs pictures of several board members.



SPECIALTY CROP BLOCK GRANT

Chris heard from Gail pertaining to the grant request for funding a keynote speaker for the 2013 Winter Meeting. The application was accepted to include in the request for the NH Specialty Crop Block Grant. There were some items that needed to be clarified, but the proposal will now proceed to the federal level.

NHFB PARTNERSHIP

The board was unanimous in its recommendation to proceed with the proposal that Rob Johnson presented at the Summer Meeting pertaining to the partnership with NH Farm Bureau. Chris will notify Rob of the board's decision. It was suggested that we ask what the payment terms would be. It was noted that the NHPGA fiscal year begins on July 1st. ■

Here's a bright idea ...

grow with us and help make New Hampshire a greener place to live.

**NEW HAMPSHIRE
Plant
Growers**
QUALITY GARDEN CENTERS
& GROWERS

The New Hampshire Horticulture Endowment NHHE was founded in 1997 as an extension of the New Hampshire Plant Growers' Association. Each year, the NHHE grants money to researchers working on related issues to the field of horticulture that will assist New Hampshire Plant Growers. Proceeds from the sale of this soil will help this fund grow. For every bag purchased \$1.00 goes to New Hampshire's horticulture research.

For more information, or to place an order, please contact John Gorden of Garden Horticultural Sales
59 Old Rabbit Hollow Road
Swampscott, NH 03446
603.357.5734
jgorden2002@placenet.com

continued on p15...



...**Keeping Count**
continued from p4

percentage is a yardstick that's too rough a measure to apply equally to all areas of your garden center business. By organizing your chart of accounts so that sales, COGS and inventory match, you will gain more useful data.

Doing detailed costs and turns analysis by department is an especially strong tool to check the efficiency of your managers and how well they move product over time. Different departments typically operate at different margins, so it would be unfair to compare a grocery manager in a buy-and-sell operation to an annuals manager in a grow-it-yourself operation.

CAPITAL EFFICIENCY

Generally speaking, you must gain higher margins on products that turn more slowly. Self-grown products often need to be a high-margin crop for garden centers because they're really only turning one crop per year, though the maturity of that crop may be staggered. Often products that are bought in can be lower margin, but are required to turn more quickly to make the same dollars.

Another way to look at turns is to measure their efficiency in financial terms; not how many products were sold from that shelf space, but how many dollars invested in inventory were turned into profit. This measure is called Inventory Management Index, which was developed by University of Wisconsin professor James J. Wadsworth.

1. Sum period-end inventory values, at cost
2. Divide by the number of periods to get an average inventory value
3. Divide your sales by inventory value to determine the number of turns

What this does is calculate the number of times you turned your (average) investment in inventory into gross sales. A higher number (ratio) is more efficient.

4. Subtract COGS, including shrink, from gross sales to determine Gross Margin
5. Divide Gross Margin by Sales to

- determine your Gross Margin Percentage
6. Divide Gross Margin into COGS to determine Gross Markup

There is a key difference between Gross Margin and Gross Markup: Gross Margin percentage is what you made from the inventory you sold. Gross Markup is the percentage of cost you are adding to determine the sales price. Gross Markup is particularly valuable when working with historical numbers, because it will take into account your average discount or sell down. Now the fun part:

7. Multiply the number of turns (from step 3) by your Gross Markup (step 6) to calculate Inventory Management Index (IMI)

The higher the IMI, the more efficiently you are using your investment in inventory. It's a formula that balances the number of turns with the margin you receive on that product or department. Ranking your products via IMI will tell you which are most capital efficient and which aren't getting it done. Using a slow-SKU report to weed out underperforming products is taking a shortcut that might otherwise leave a perfectly profitable one on the shelf.

Looking at the profitability of individual products—and having your managers or key employees work on it with you—will yield the most immediate solutions and suggestions. For this information to be effective, careful recording-keeping is crucial. The better your historical cost accounting, the more effective your analysis can be. The more you bring managers and key employees in on the process, the faster and longer lasting will be the results.

EARNING AN EXTRA DAY'S REST

So go ahead and dream about taking a vacation, because you've taken the first step towards earning one. You're ready to think seriously about inventory analysis. You've got a few different analytical models to use. Now go put them to work so you'll have the time for a long weekend by the lake a tour of national parks or a safari in ... ■

Wildflower Meadow Establishment Methods & Seedling Identification Guide

Progress Report: August 2011

Catherine Neal • Amy Papineau
UNH Cooperative Extension



Wildflower reference garden at the UNH Woodman Horticulture farm.

Meadow Establishment Techniques
We are evaluating wildflower meadow establishment in response to different methods of soil preparation, the use of seeds versus young plants as starting material, and spring versus fall planting. Spring Planting: Three of our experimental soil preparation methods quickly eliminate existing vegetation, allowing

continued on p15...

...Wildflower
continued from p14

for immediate spring planting. These include a single application of glyphosate herbicide followed by tilling, a single glyphosate application followed by raking, and tillage without herbicide. Soil preparation for these treatments was carried out between April 22 and June 6, 2011. Seeds and plugs were planted on June 11 & 12, 2011.

Both the seeded plots and plugged plots were planted with a custom mix of 17 species of perennial wildflowers and 4 species of perennial grasses. All species are native to New Hampshire but were purchased from specialty nurseries in the Midwest. Plots are being evaluated regularly, documenting the wildflower species present, weed species present, percent soil coverage, and flowering dates. Plots are photographed weekly.

The plots are still very young and conclusions cannot be drawn at this point regarding the long-term success of the treatments. However, some interesting trends are already apparent. As we expected, the plugged plots grew and filled in more quickly than the seeded plots. Our June 29 evaluations found that, on average, 40% of the soil surface of the plugged plots was covered with wildflowers, while the seeded plots had only 10% wildflower coverage. The number of individual wildflower plants, however, is higher in the seeded plots. Wildflower species composition is more diverse in the plugged plots, with all 21 species having survived. Although seeded plots were sown with the same mix of species, only a small number are currently visible in the plots. There are also some interesting differences in weed species composition as a result of soil preparation treatments. While soil preparation methods have had little effect so far on establishment from plugs, the seeded plots have dramatic differences in weed density. While about 10% of the area is covered with wildflowers in all the seeded plots, the remaining 90% is primarily bare ground in the 'glyphosate & till' and 'till only' plots. These treatments were mulched lightly with salt marsh hay after seeding. The 'glyphosate & rake' plot was self-mulching so no hay was added, but now this treatment has much greater weed density than the others.

Fall Planting: Fall planting allows for employment of an extended summer weed control regime prior to planting. This is thought to be more effective due to depletion of the weed seed bank and better control of existing perennial weeds. The three soil preparation methods for fall planting include repeated applications of glyphosate herbicide, repeated tillage, and smothering with black plastic mulch. These treatments were started on June 6, 2011 and have been repeated as needed throughout the summer; the black plastic remains in place through mid-September when plots will be planted. Plots will be planted with the same species of plugs and seeds as used in the spring plots. Seedling Identification Guide

We are developing a web-based photographic guide to the identification of common New England wildflower species, focusing on identification at seedling and young plant stages. This guide will aid gardeners and landscapers in making appropriate management decisions early on in the meadow establishment process.

In January 2011, we purchased seed of 61 native wildflower and grass species commonly found in New England wildflower mixes. The seeds were stratified and sown at the UNH Macfarlane Research Greenhouses. Individual seedlings of each species were photographed weekly from the time they germinated throughout the spring growing season.

Three young plants of each species were planted at the UNH Woodman Horticultural Farm to create a wildflower reference garden. Botanic garden-style name plates have been installed in the garden, displaying the scientific and common names of each species. We continue to photograph the plants weekly, documenting the transitions from vegetative to flowering plants. Throughout the spring and summer, we have amassed a large collection of photographs of wildflower seeds, seedlings, and young plants. This winter, we will organize the photographs to create the web-based wildflower identification guide, accessible through the UNH Cooperative Extension website. ■

2010 Annual Report

NHPGA • New Hampshire Horticulture Endowment
The Grant-Making resource for New Hampshire's Horticulture Industry

NHHE Steering Committee

Peter van Berkum
Van Berkum Nurseries
Deerfield, NH

Henry Huntington
Pleasant View Gardens
Loudon, NH

Doug Cole
D.S. Cole Growers
Loudon, NH

Robert Demers
Demers Garden Center
Manchester, NH

Rick Simpson
Rolling Green Nursery
Greenland, NH

Financial Report:

1/1/10 through 12/31/10

\$10,850.90 Checking account balance: 1/1/10

Income

\$5,535.00 Fafard Soil Bag fundraiser
\$525.00 NHPGA dues donations
\$47.50 Reimbursement from NHPGA
\$6,107.50

Expenses

\$340.00 Admin. Asst.
\$4,000.00 Grant
Office supplies, postage,
\$501.81 Printing
\$4,841.81

\$1,265.69 Income Less Expenses:

\$12,116.59 Checking Account Balance: 12/31/10

\$16,452.11 MFS Mutual Fund Value: 1/1/10
\$18,094.50 MFS Mutual Fund Value: 12/31/10
\$1,642.39 Income (loss):

\$100,385.53 NH Charitable Foundation: 1/1/10
\$110,584.34 NH Charitable Foundation: 12/31/10
\$10,198.81 Income (loss):

\$13,106.89 Net Gain (loss) 1/1/10 – 12/31/10

\$127,688.54 Total assets 1/1/10

\$140,795.43 Total Assets 12/31/10

NHPGA Container Mix Program:

NHPGA members raised over \$5,000 dollars in the past year for the NHHE Endowment fund. One dollar from the sale of every bag goes to research that benefits NH Growers. To learn more about selling the container mix please contact John Gerkin at Gerkin Horticultural Sales jgerken2009@hotmail.com, 603-357-3734 office or 603-770-1742 cell



continued on p17...

...Annual Report
continued from p16

Coralbells (Heuchera) Hardiness

Research 2010-2011



Dr. Leonard Perry
University of Vermont

The last decade or two has seen an explosion of coralbells (Heuchera) on the market, with little known about their hardiness, particularly under extreme cold climates. Zone ratings are often contradictory, cover a wide range, and in many cases are conservative, similar to many other new perennial introductions. One group of coralbells—those with villosa or hairy alumroot parentage—have been among the more popular of this genus. Growers have raised questions as to their hardiness, the plants having been bred in France and the west coast, and with parents from different regions. Native to the southeastern U.S., the species is often listed as growing in USDA zones 6 to 9. So the purposes of this study were, 1. To field test many new coralbell introductions in zone 4a for at least two winters, and 2. To perform controlled freezing studies on potted and overwintered coralbells of villosa heritage.

Controlled Freezing Studies

Five cultivars were obtained in summer 2010, potted into 4-inch square pots, and grown through fall outdoors in northern Vermont under 40 percent shade. Plants were then moved in early

November into a double-glazed rigid poly house with 75 percent shade (from a heat curtain inside and white poly covering outside), where soil temperatures were maintained at an average 40°F, with a range of 36° to 44°F. Occasionally temperatures would go higher for a few hours on sunny days, reaching 54°F, or for a few hours during cold nights to 28 to 30°F for a few hours in early morning.

Plants were placed into controlled temperature freezers on two dates, January 6, 2011 and February 24, 2011. Each cultivar was frozen in the same freezer to eliminate variability between freezers. Two cultivars were in one freezer, three in the other. On each date, plants were allowed to drop to 28°F and become uniformly frozen over 2 days. Then they were dropped to each target temperature (23°F, 18°F, 12°F, and 7°F) over a roughly two hour period, and allowed to remain at those temperatures for a half hour, before removing one set of plants and proceeding to the next temperature. This procedure is the same as has been used for previous such hardiness studies we've conducted over the past 20 years. Plants were then removed and allowed to return to greenhouse temperatures, and grown on. They were rated in late March and moved outside

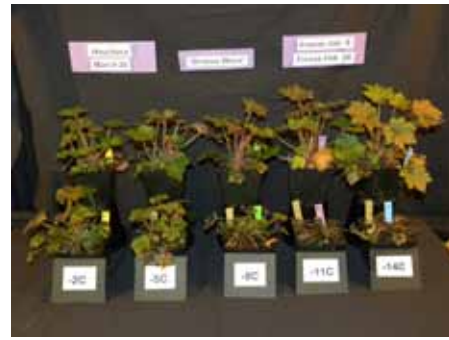
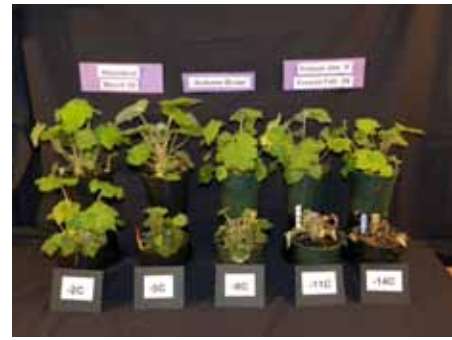
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Coralbells Hardiness Research



Coral Bells (Heuchera) are some of the hottest perennials in the market today but will they stand up to our New England Winters? NHHE funded research to answer this question.

... Keeping Count
continued from p17



in early April. Ratings were based on relative percent growth, both previous and new. There were 6 replicate plants of each cultivar, for each temperature. Within each cultivar, data was analyzed statistically using Analysis of Variance, with means separated if differences existed by Tukey's procedure.

In the field, over almost two decades of winter soil measurements in USDA zone 4a, temperatures haven't dropped below 28°F, and seldom go below 30°F. Past studies, and discussions with growers, indicate that even in cold climates, pot temperatures in unheated overwintering houses, when pots are on the ground, don't drop below 21°F to 23°F during extreme events. Of course this may vary with snow cover outside, and type of greenhouse coverings.

- Autumn Bride showed no differences among treatments in the January freezing except for reduced regrowth after 7°F, although this was still saleable. After the February freezing, overall regrowth from all treatments was less, although with plants still saleable down to 18°F, with most plants in the two colder treatments dead.

- Bronze Wave showed no differences among treatments in the January freezing, surviving all the way to 7°F. After the February freezing, regrowth after

28°F was highest and not significantly different from 23°F. The other three treatments were not saleable, most or all of the two coldest treatments being dead.

- Citronelle showed no differences among treatments in the January freezing, surviving all the way to 7°F. There was one additional treatment during the January freezing, down to 1°F, after which few plants were living. After the February freezing, results were similar to Bronze Wave, only with saleable plants down to 18°F.

- Encore showed no differences among treatments in the January freezing, surviving all the way to 7°F. After the February freezing, results were similar to Citronelle with saleable plants to 18°F, and few living plants after temperatures below this.

- Miracle, similar to Autumn Bride, showed no differences among treatments in the January freezing except for reduced regrowth after 7°F which, unlike Autumn Bride, was not saleable. After the February freezing, similar to Bronze Wave, regrowth after 28°F was highest and not significantly different from 23°F. The other three treatments were not saleable, most or all of the two coldest treatments being dead.

Several overall observations from these studies were:

- Plants were hardened by January, surviving after a half-hour exposure to the lowest temperature (7°F). All were saleable, with no differences, except for Autumn Bride and Miracle. These had less regrowth at the lowest temperature, yet plants of the former were still saleable.

- After the mid-winter freeze, regrowth of all cultivars was similar, except for Encore which was up to one point lower yet still saleable.

- These January results were similar to 5 different species, frozen similarly in 2010. In that study, Blackout and Mocha were saleable to the lowest temperature, the other three were not.

- There was significantly less regrowth for most treatments and cultivars after the February freezing compared to those frozen in January. Autumn Bride, Citronelle, and Encore were saleable to 18°F. Bronze Wave and Miracle only were saleable down to 23°F.

- In the previous year's study, after the second freezing Blackout was saleable to 12°F and Caramel to 18°F (results from the others were not available).

- From these two freezing studies in 2011, cultivars appeared to have similar hardiness with Miracle slightly less so.

From these two years of studies, it appears there is a difference among freezing dates in winter, plants slightly more hardy and able to withstand low temperatures in mid-December at least through early January, than mid-February. Most were able to withstand a brief (half hour) exposure to 23°F and still have good regrowth. When fully

... Keeping Count
continued from p18



hardened, these cultivars were able to withstand a brief exposure much lower (at least to 12°F) and still be saleable.

While the survival to lower temperatures than expected was surprising, equally surprising was the near total death of a block of Caramel under winter blankets outside this past season. The freezing studies from 2010 indicated these would have survived, given the fact that pot temperatures never dropped below 32°F. In past overwintering studies, and with a few plants of other cultivars under similar covers, there was good survival. A study this coming year will look at holding plants at a higher temperature (around freezing) but for a much longer period (up to 2 months) prior to controlled freezing, to determine if any death might be due to temperature or whether this past year Caramel may have been too wet and rotted under the covers. Previous studies, holding perennials below freezing for up to 2 weeks, resulted in less survival and subsequent regrowth.

Field Trials

Just over two dozen cultivars were planted in the field in a stony loam, in early fall 2008, with more added in 2010. Although listed in zone 4a, winters barely have fallen below -20°F so the site is in reality 4b. Water was given for establishment, and as needed during dry periods, and compost sidedressed yearly along with 5-3-4 in early summer, otherwise minimal care was given to simulate a home situation and to maximize plant stress. This seems verified by the fact that three cultivars that didn't survive the first year in the field trials did survive fine in landscape beds receiving more attention. Snow cover was adequate, with winter soil temperatures seldom dropping to, or much below, 30°F.

Of these initial plantings, those that died have been replaced, with new additions for 2011. There have been 15 grown for at least 3 winters (below), with 50 having survived this past winter. Only two cultivars died, and will be replaced to try again (to determine if temperature or weak plants or other causes were responsible). Several cultivars had little growth this past spring

and may not survive the season. All 5 cultivars from this past year freezing study survived in the field. Those surviving and rating highest over 2 winters included: Dolce Crème de Menthe, Dolce Licorice, Green Ivory, Obsidian, Purple Petticoats, and Silver Lode.

Appreciation is expressed to the New Hampshire Horticulture Endowment, and to North Creek Nurseries (Landenberg, PA), for their support and making this study possible. More on these and similar hardiness studies can be found online (perrysperennials.info) under Sustainable Research.

continued on p19...

continued on p20...

Donors to Date:

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Leading \$5,000 to \$9,999

First Pioneer Farm Credit

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*Newton Greenhouses

Major \$3,000 to \$4,999

Ball Seed Company

*D.S. Cole Growers, Inc.

*Griffin Greenhouse and Nursery Supply

New Hampshire Landscape Association

*Spider Web Gardens

*Van Berkum Nursery

W.H. Milikowski, Inc.

Primary \$1,000 to \$2,999

*Bailey Nurseries, Inc.

Cavicchio Greenhouses, Inc.

*Champions of NH Farms/

NH Dept. Of Agriculture

*Deerfield Gardens

*Demers Garden Center

Durham Garden Club

Edgewater Farm

*Garrison Hill Florists, Inc.

*Goldstar Wholesale Nursery, Inc.

*Hortica (formerly know as

Florist's Mutual Insurance Company)

*Outdoor World

*Prides Corner Farm, Inc.

*Rimol Greenhouse Systems, Inc.

*Rolling Green Nursery

*Round Table Farm Greenhouse

*Stratham Circle Nursery & Landscape

*Trugreen Landcare (Formerly *Coronis

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Supporting \$500 to \$999

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*Nancy Carlisle Interior Plantings

*The Mixed Border Nursery

*New England Anemones

*Wayside Farm

Wentworth Greenhouses

Special \$300 to \$499

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*Bayberry Nursery

*Belknap Landscape Co., Inc.

*Blackberry Farm

*Colby Hines Contracting

*Davis Engineering

*Deer Cap Greenhouse

*Fred C. Gloeckner Company

*Gillyflower Glen

J.P. Bartlett, Co.

*Johnson's Flower & Garden

*Ledgview Greenhouses

Mason Hollow

Margaret Hagen

Merrymeeting Garden Center

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NH Association of County

Extension Agents

*Portsmouth Gardens

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*The Green Thumb of North Haverhill

*Uncanoonuc Mt. Perennials

*Weir Tree Farm

Donors \$299 or less

2 Blooming Sisters Garden Center

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Lake Street Garden Center

L'Annscapes

Leslie Doherty

Let It Bee Garden

Longacres Landscaping

Mason Hollow Nursery

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Miltimore's

New England Heather

Northeast Landscaping

Parkwood Farm

Pure Barnyard

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*Revay's Garden Center

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* **Founding benefactor** ■

Streamlining the way NHPGA Networks



New Website

In an effort to improve our communication within our membership and the general public, we are expected to launch our new website October 1, 2011.

Brief outline of the major changes:

- The private side of the website has been eliminated.
- Login is no longer required to access any information.
- *The Plantsman Magazine* will be referred to as *The Plantsman*, as it will no longer be a magazine.
- Advertising will not longer appear in *The Plantsman*.
- *The Plantsman* is an online virtual flipbook, but remains available as a downloadable PDF.
- Web banners will be the primary source of advertising.
- The site will be secure, https.
- No online forms. For increased security, the transport of personal information [forms, proposals, etc.] will be handled via Interactive PDF, and eMailed directly to the NHPGA Executive Director.

Advertising

We request that you continue to sponsor the organization through banner advertising. Banners displayed for one year will cost \$100. Banners will be oriented at the top, left portion of every webpage, except for the landing page [aka home or index page]. They are to be designed precisely at 875 px wide and 170 px high. It is imperative that the banner be designed to the exact measurement specified.

The clicking action of the mouse anywhere on a page, will simultaneously refresh banners, at random. There will be no static space available for advertising. Also, due to the animated

nature of the banners, specific pages will not be reserved for your ad. Clicking a banner on the NHPGA website, will open a new window, displaying that advertisers website.

Future Advertising

In the hope that we attract a large sponsorship, and there becomes a need to increase your visibility on our website, we will be offering the opportunity to duplicate your banner in the data base. Each banner remains at \$100 [ie. If you want to triple your rate of visibility, three banners will be stored in the data base at the cost of \$300.]

The Plantsman

This publication will remain the same resource, in terms of its content, minus the appearance of advertising. Due to the restructuring of the website, *The Plantsman Magazine* is on temporary hiatus. Look for its return in the very near future, under the name *The Plantsman*.

eBlasts

Members are encouraged to sign up for our eBlasts to stay informed - especially if there is last minute information that need to be exchanged. This process can be easily done on the website.

Summary

Our decision to restructure our communication network responded to the unanimous difficulty members had obtaining information from the website, providing enough content for a full fledged magazine, and responding to a down turned economy. We hope that the lower cost of advertising appeals to a broader group, with the hope of increasing sponsorship.



NEW HAMPSHIRE PLANT GROWERS

MEMBERSHIP FORM 2011-2012

I. MEMBERSHIP INFORMATION

Company Name: _____

Main Contact: _____ Title: _____

Address: _____

City/Town: _____

County: _____ State: _____ Zip Code: _____

Work Phone: _____

Work Fax: _____

Website: _____

Company E-mail: _____

Company Description (25 words or less):

**Attach
 Business Card**

II. MEMBERSHIP CATEGORIES

- 1 - 4 full-time employees - \$75
- 5 - 10 full-time employees - \$100
- 11 - 20 full-time employees - \$125
- 21 + full-time employees - \$150
- Seniors (60 + years of age) - \$50
- Employee of member company - \$15

Please state name of company:

- Student - \$15

Please state University / college:

III. DONATIONS

I would like to make a contribution towards:

- Horticultural Endowment Fund Amount: \$ _____
- Other _____ Amount: \$ _____

IV. VOLUNTEER INTERESTS

Would you be willing to help us with:

- Board of Directors
- Membership Recruitment
- Trade Show / Event Planning
- Contribute Articles to *The Plantsman*
- Marketing
- Grant Writing
- Education & Training
- Speaker / Presenter
- Other _____

V. PAYMENT INFORMATION (please have payment by September 5th)

- Check / Money order total: \$ _____
 1. Make check payable to "New Hampshire Plant Growers Association"
 2. Mail to: New Hampshire Plant Growers Association (NHPGA), 9 Babcock Lane, Kingston, NH 03848

VI. COMMENTS / QUESTIONS

Please use the follow space to write any comments or questions you have for us.

PLEASE LOOK THE LAUNCH OF OUR BRAND NEW WEBSITE NHPGA.ORG ON OCTOBER 1st.

*“The sun was warm but the wind was chill.
You know how it is with an April day.
When the sun is out and the wind is still,
You’re one month on in the middle of May.
But if you so much as dare to speak,
a cloud come over the sunlit arch,
And wind comes off a frozen peak,
And you’re two months back in the middle of March.”*

- Robert Frost,

Two Tramps in Mud Time, 1926