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Giving back to go forward

The tree care industry is made up of special people. Any time that you have two or more gathered, you will find a common denominator that is sometimes hard to describe, but it is always very special. Special people share a common bond of something they love, a way they go about their work, and a determination to hold on to what they value.

Finding these special people is not always an easy task. The tree care industry is one of the world’s best-kept secrets in many ways. So it’s our job to let the world know about you and what you do. Most important, it’s all of our jobs to let young people know that what you do is extraordinarily exciting, has tremendous potential for a satisfying life, and can propel them into a world of other special people.

In this issue of TCI, you will read about some of the work that Peter Gerstenberger, vice president of business management, safety, and education for NAA, does in trying to spread the word. Peter is one of those special people. He isn’t loud about what he does, but he certainly does get the message across, and he is passionate about his work. When he visits elementary school classrooms, the kids he speaks to love him, and he gets asked back to talk about tree care year after year.

That is what the NAA is encouraging our members to do. Get out there and talk about who you are and what you do to the next generation of the tree care industry. As much as we would all like to be certain that our children will want to do what we do, there is no guarantee that your daughter or son or niece or nephew wants what you or your family built. Finding people with your passion—if they’re not at the breakfast table—takes some effort.

We encouraged our members to participate Feb. 2 in Groundhog Job Shadow Day. Endorsed by Secretary of State Gen. Colin Powell through America’s Promise, it provides communities with ways to reach our youth about career options. If you are not comfortable speaking before the Boy or Girl Scouts troop, how about bringing a student to your company for the day? If you reached out to the students in your community Feb. 2, please e-mail, fax, phone or write to us and tell us what you did and how you feel it made a difference. If you took photos or video clips, we would love for you to share them. This opportunity will occur every year on Groundhog Day. Can you imagine how many students, parents, teachers, et al., will learn about the tree care industry if every company takes in just one student per year?

For the future, why don’t you make it part of your annual business plan to do something with the kids in your community at least twice per year? Contact the NAA for the award-winning Careers in Arboriculture brochure and the video to help you carry the message to tomorrow’s leaders in the tree care industry.

You’re very special and what you do is important and exciting. Why not share it?

Cynthia Mills, CAE
Publisher
Two new Terex Telelect models take tree care professionals to greater heights.

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March
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TCI's mission is to engage and enlighten readers with the latest industry news and information on regulations, standards, practices, safety, innovations, products and equipment. We strive to serve as the definitive resource for commercial, residential, municipal and utility arborists, as well as for others involved in the care and maintenance of trees. The official publication of the non-profit National Arborist Association, we vow to sustain the same uncompromising standards of excellence as our members in the field, who adhere to the highest professional practices worldwide.
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New Treatments: Claims, Theories & Results

By Dr. E. Thomas Smiley

Just a few years ago, a look at soil management would have been limited to fertilization. Now there are many more soil issues for arborists to address. Nevertheless, let’s start with fertilization.

Fertilization

The big difference between the new A300 Standard for fertilization and the old NAA standards is soil or foliar analysis. Nutrient analysis is the key to understanding plant growth. Our industry is undergoing a lot of scrutiny from people, in the same way that those who apply pesticides for crop production underwent scrutiny a few years back. Critics are questioning what we are doing as a routine service. The best way to avoid this criticism is by conducting nutrient analysis, finding out exactly which nutrients are deficient and applying only the deficient elements at rates that are right to overcome those deficiencies.

Figure A shows an example of a soil analysis report. It outlines the different materials we are using in our fertilizer programs. Soil pH analysis is another very important factor; if you’re not doing pH correction, you are probably missing 50 percent of your potential business. Nearly half of the samples we get have a pH that is not correct for that species.

It is not easy to change the pH of the soil. Multiple applications are often required. It is not a service that anyone is criticizing. As far as the other nutrients go, we certainly are finding deficiencies, but usually it is only one or two per site. If you do an analysis, you will probably find that you can actually cut back on the amount of material you are using. Cutting back can save you money on the job by saving material costs. The results can be spectacular, probably better than you are achieving now, because you are doing the diagnostics correctly. Find out what is wrong, and treat the real problem.

Fertilizer timing is another controversial topic from a winter injury perspective and uptake efficiency. Some new work out of Ohio State University shows that the ideal times for fertilization are late spring to early fall.

Figure B: This graph shows the difference fertilizer can make in transplants. A year after transplant, the balled and burlapped trees that received fertilizer increased .53 inches in diameter, whereas the nonfertilized balled and burlapped trees increased .21 inches. The difference in fertilized and nonfertilized bare-root transplants is also quite significant: .38 inches vs. .27 inches.
There have always been questions about fall fertilization. Will fertilizer put down in September or October promote late-season growth, which will then cause a reduction in hardiness? We have been looking at this for more than three years now, working with the Morton Arboretum in Chicago. We have fertilized plots in September and early October, then gone back through the winter collecting samples. We then sent the samples to the arboretum for a hardness evaluation. We fertilized Sept. 2 during the middle of a drought. We broke all the rules. We found that winter hardiness was not reduced with application of three or six pounds of nitrogen per 1000 square feet. There was no difference.

Fertilization after transplanting is another hot topic. Some research out of California shows no response with live oak. A graduate student at Clemson University is doing work on this in the Carolina Piedmont, and, as Figure B shows, we have found tremendous differences within a year after transplanting. The blue in Figure B is where we put down the fertilizer at time of transplant. The yellow is where we did not. Charts reflect the diameter growth increase over one season. The soil in the Piedmont region has a real need for nitrogen. It might not be that way in all parts of the country. If a tree does not need nitrogen, then it will not respond. A soil analysis is a good way to find out if nitrogen is needed. A slow-release, low-salt material is essential to avoid damaging the new roots.

Watering New Transplants

Watering new transplants is another topic of interest to all of us. The client is always looking for a simple answer. How many gallons do I put on this plant? How long do I turn the timer on for? I can’t tell you about the timer, but I can show you what Roger Harris at Vir-
Virginia Tech found and we have been able to confirm at Bartlett Tree Research Laboratory.

During the summer of 1999 – that was the real bad drought summer – Dr. Harris was putting down about 10 gallons, twice a week, on 2½-inch caliper trees. He had a very good survival rate. This past summer, we put down either 10 or 20 gallons once per week on the same size material, and again achieved very good results. Basically there was no failure due to the drought. Dr. Harris’ research also found that bio-stimulants are basically ineffective and do not improve survival, with or without the additional irrigation.

Soil compaction, diagnosis and treatment.

Soil drainage analysis is another easy, effective procedure that we can do on a client’s property. This is a very good test, especially on a construction site. All it takes to do this test is a hole in the ground and a little bit of water. Dig the hole about 12 to 18 inches, fill it with water, let it drain, and then fill it up again. Measure the speed at which the water level drops. If it is an inch or greater per hour, you have a soil with pretty good drainage. If it is less than a half inch per hour, you better put in swamp species because that is all that is going to live there. Or, you can put in a drainage system. A lot of people are surprised at the installation price, but it is a lot cheaper to do it when the landscape is being created than to come back later and install it. Anyone who is putting in a major new landscape should perform a soil drainage analysis well ahead of planting time.

Irrigation systems can be one of the best – or one of the worst – things for trees. Be wary of irrigation systems that are on clock timers. Clock timers deliver the same amount of water, rain or shine. Instead, use a tensiometer to determine whether the landscape needs water. A tensiometer is a simple device that measures water in the soil. A tensiometer has saved a lot of plants. It...
Figure H shows a typical air excavation. Note the drip line and trunk. With the air excavator, excavate around the trunk to a distance of about three times the dbh of the tree. Outside of that, excavate pie-shaped segments. Do not excavate all the way around if you do not know how the roots of the entire tree will respond to this treatment. Softening too much soil could cause tree failure.

Root collar excavation is another thing that you need to look for on every single tree you examine. The root collar, of course, is very important from a support perspective, and from a nutrient and growth regulator movement perspective. Arborists on Long Island have a real problem with Japanese black pine decline, and root collar burial is one of the causes. The early stages of the syndrome occur on hardwoods as well, although pines respond very well to treatment. Figure C shows the tree's appearance before the treatment, about 10 years ago, when we were just getting started. Figure D shows it after the treatment, about a year later. All we did in the interim was perform a 6-inch-wide root collar excavation, just clearing the soil from off the trunk. Figure F shows what the excavated root collar looks like one year after treatment. We have had a very good response on the pines and we see the same sort of response on many of the hardwood species if they are treated soon enough. When you take a closer look at the needles, you can see that the current year's growth on the after-picture, Figure E, that they are all green. There was no fertilizer.

He prides himself on your success.

Dick Miller knows that having the right tools for the right job can make all the difference.
added to these plants; it was strictly a root collar response.

The other reason we need to look at root collars is from a safety perspective. If you send a climber up a tree that does not have a visible root collar, you are asking for problems. Those are the types of trees that fall down on calm days because the root collars are rotted.

Note the indentation on the side in Figure G. What is it caused by? A girdling root may be the first thought, but in this case the indentation was caused by “girdling soil.” A tree trunk can move the soil up to some degree, but not if the soil is too hard. That is what has happened in Figure G. The tree trunk was not able to continue growing because of the girdling soil. It did not have the physical strength to push that soil out of the way. Leaving this problem untreated can lead to premature tree death or failure.

We still don’t know which species handle this problem better, but in general, the lowland species – sycamores, elms, the species that you normally see in a swamp – can handle root collar problems a lot better than upland species. Cherry and the apple trees are very sensitive.

Root collar problems can also be caused by over-mulching, but I am not condemning mulch. Mulch is one of the best ways to promote root growth and tree root health. Gary Watson from the Morton Arboretum looked at the effects of mulch or turf on tree roots. The difference is in root density – there is about five times as many roots by just applying mulch. That is one of the very best treatments that we can do for any tree.

Colored mulches are now becoming popular on many landscapes. There is nothing wrong with these colorants as far as we know, but we are getting reports of some nitrogen tie-up if the mulch is made from ground-up pallets. This does not happen with wood chip mulch, which is generated from pruning.

Soil compaction is another commonly encountered problem in the urban environment. One of the best ways we have found to alleviate soil compaction is air excavation. There are simple tools that direct a stream of air at the soil. Some of them have very well-designed jets at the tips that will accelerate the speed of the air and focus it on the soil for a higher cutting ability. The way we typically do air excavation is shown in Figure H. With an air excavator, we excavate the area around the trunk to a distance of about...
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three times the dbh of the tree. Outside of that, we excavate pie-shaped segments. We do not excavate all the way around, because we do not know enough about how the roots of the entire tree will respond to this treatment. We are a little concerned that we might soften the soil too much, resulting in tree failure.

Another treatment, shown in Figure 1, is radial trenching. Radial trenching has worked very well for us in the past. With radial trenching we affect a much smaller soil area. If you want to compare some numbers, the oldest treatment for soil compaction is vertical mulching, which consists of drilling 2-inch holes on 18-inch centers. If you do the math on that, you will find that you affect about 1 percent of the soil within the drip line of the tree. When we do radial trenching, we increase that to about 5 percent. Certainly radial trenching is better.

Root Decay Assessment

Root decay is a major predisposing factor for whole tree failure. We start our root assessments by sounding the tree with a mallet. When we find that we have a hollow sound, we can drill the roots. There are different tools — such as the Resistograph — you can use with procedure. Drill the root systems the same way you would drill the trunk. We are obviously limited on what we can see with a root. We don’t know how big in diameter that root is, so we have to use other factors when assessing root decay.

If 50 percent or more of the roots are missing, cut or in decay, we call that a critical-risk tree. We do not allow our people to climb trees with that much root decay, or that many missing roots. There is too much risk of failure in these incidences.

If one-third or more of the root system is missing or has significant decay, we call that a high-risk tree. A moderate-risk tree has root decay in less than one-third of its root system. As with an aboveground risk assessment, there are no safe trees, only low-risk trees. As we have all seen, after hurricanes, many trees that come down have no defect in the root system. If we call them low-risk trees, it implies that there is still some risk with those trees.

There have been many advances in the care and assessment of tree roots over the past few years. Applying these new techniques will improve tree health and provide your clients with the best service possible.

Dr. E. Thomas Smiley is a plant pathologist and soil scientist at the Bartlett Tree Research Laboratory. This article was excerpted and adapted from a lecture at TCI EXPO 2000.
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3. Top: 14-ga. plate
4. Tailgate: 12-ga. plate with tubing frame (270° swing)
5. Runners: 8” structural channel
6. Cross Members: 3” structural channel
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D. Tool Boxes: (14-ga. Galvannealed)
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It is time to be heard

It's a new year and there's a new administration with many new faces throughout our federal government. This is an opportune time to voice your concerns over issues affecting your workers' safety and your business.

There are plenty of weighty issues to choose from. There are the more well-known issues, such as the recently enacted OSHA Ergonomics standard and H-2B guestworker program reform.

There are new issues, such as something called the Equal Access to Justice Act Reform Amendments of 2001. Introduced by Sens. Tim Hutchinson, R-Ariz., and Russell Feingold, D-Wisc., the legislation would require the government to automatically reimburse individuals and small businesses for the legal fees incurred to defend themselves in lawsuits brought by federal agencies such as OSHA, EPA and DOT.

Changes in the Senate

The Senate Health, Education, Labor and Pensions Committee, which has primary responsibility in the Senate for legislative issues involving job safety and health, will get three new GOP members in the 107th Congress. Sens. John W. Warner, Va.; Pat Roberts, Kans.; and Christopher S. Bond, Mo.; have been added.

The committee assignments show Warner, Roberts, and Bond taking seats vacated by Republican Sens. Sam Brownback, Kans.; Mike DeWine, Ohio.; and Chuck Hagel, Neb.

Sen. James Jeffords, Vt., is returning, as expected, as chairman of the education and labor committee. He is joined by returning Republican senators Judd Gregg, N.H.; William H. Frist, Tenn.; Michael Enzi, Wyo.; Tim Hutchinson, Ark.; Susan Collins, Maine.; and Jeff Sessions, Ala.

The two new Democrats on the committee are Sens. Hillary Rodham Clinton, N.Y.; and John R. Edwards, N.C. They join other Democrats, including the ranking member, Sen. Edward Kennedy, Mass.; and Sens. Christopher Dodd, Conn.; Tom Harkin, Iowa.; Barbara Mikulski, Md.; Jeff Bingaman, N.M.; Paul Wellstone, Minn.; Patty Murray, Wash.; and Jack Reed, R.I.

The education and labor committee will have a 10-10 ratio of Republicans and Democrats, reflecting the 50-50 split in the Senate following the November election. Subcommittee assignments have not been finalized for the Senate panel.

The committee's Employment, Safety and Training subcommittee will continue to be headed by Sen. Michael Enzi, R-Wyo. The first-term senator led several legislative attempts to rework OSHA into a more employer-friendly agency in the last Congress.

Changes in the House

The new chairman of the House Education and the Workforce Committee, Rep. John Boehner, R-Ohio, announced Jan. 29 that he has named Rep. Charles Norwood, R-Ga., to chair the Subcommittee on Workforce Protections. In the House, OSHA-related legislation has traditionally been heard and voted on first by the subcommittee, formerly chaired by Rep. Cass Ballenger, R-N.C., before it reaches the full education and workforce panel. Republican members of the full committee, in addition to Boehner and Norwood, are:


One vacancy has yet to be filled. Democrats had yet to be named to the full committee at press time.

Tips on letter writing

Do not underestimate the power that a letter from a constituent can have. If you decide to write, try to follow these guidelines.

To address correspondence to:

A Senator:
The Honorable (full name)
United States Senate
Washington, D.C. 20510

Dear Senator (last name):

A Representative:
The Honorable (full name)
United States House of Representatives
Washington, D.C. 20515

Dear Representative (last name):

Additional hints:

♦ When writing to the Chair of a committee, it is proper to address them as, "Dear Mr. Chairman" or "Dear Madam Chairwoman."

♦ Your purpose for writing should be clearly stated in the first paragraph. If the letter pertains to a specific piece of legislation, refer to it by name; i.e., House bill: H.R. ______, Senate bill: S. ______.

♦ Address only one issue per letter, and try to keep the letter to one page.

♦ Be courteous, to the point, and use key information, such as the impact the legislation would have on your business.

Peter Gerstenberger is vice president of business management, safety and education for the National Arborist Association.
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Profits and Profitability

By Mary McVicker

Profit planning sounds like the impossible dream. How can you plan for something so uncertain? In many businesses, profits are a happy accident, not a result of planning.

There will always be an element of uncertainty to profit planning. Markets, suppliers, customers and costs are all changeable. And while these variable factors make profit planning difficult, they also make it essential to the success of a business.

A business typically waits until the end of the year, looks at the figures, then considers various actions. If the profit line is good, the business lets its operations alone. If the profit is "unsatisfactory," the business considers some alternatives. Profits are often a happy accident rather than a result of careful planning. But profit planning isn’t an Alice-in-Wonderland concept. And, most importantly, profits aren’t the business’ leftovers.

Because profit has so much uncertainty attached to it, many business owners avoid it. Nevertheless, it serves valuable purposes:

♦ A profit plan serves as a basis for decision-making. Even minor decisions made during the course of a year should be consistent with other decisions and actions of the business.

♦ Profit planning provides a different look at information about how the business is doing.

♦ A profit plan can be a motivating factor, providing a goal that gives everyone a greater sense of direction and a feeling of achievement when the goal is reached. Key to this is that employees have a voice in determining the goal and have a stake in the outcome. Without those factors, profit planning is just another meaningless manager exercise as far as most employees are concerned.

♦ A profit plan links different areas of the business. Again, a plan fosters unity. Working toward the goal requires careful coordination. It also reduces the likelihood that the business is dissipating its efforts in too many directions and squandering its resources.

♦ A profit plan forces the business to think competitively. When efforts are focused on a common plan, such as a profit plan, efforts are less likely to dissipate in too many directions.

♦ Profit planning gives a business direction. Without planning, a business tends to drift. And without a profit plan, which is essentially a projection, the business owner often has too little information on how the business is doing.

Typically the final figures are computed at the end of the year and various actions to improve the numbers are considered. In many cases the business is reacting to events that took place almost a year earlier. It’s far better to be active than reactive.

During the course of a year, the owner or manager makes many decisions about the business, which must be consistent with other decisions and actions of the business. Otherwise, after a sequence of "minor" matters, the business may be on a different path than intended. A profit plan helps to keep decisions on track.

What is a profit plan?

A profit plan is much like a budget or a forecast, but with a slightly different emphasis. Many businesses do some profit planning in their yearly cash forecast or budget, but the profit plan isn’t the focus of those efforts.

Profit planning obviously involves setting goals, devising a strategy for achieving those goals, and determining how the strategy will be monitored throughout the year.

Realism and practicality are essential. However intriguing it may be, "riches beyond our wildest dreams" won’t work as a goal. Yet many entrepreneurs set profit goals unrealistically high, then drive themselves (and everyone around them) crazy trying to meet those goals.

Creating a profit plan

The more a business can quantify its goals, the better chance it has of reaching them. Also, the business is more likely – and better able – to monitor its progress toward those goals. For example, the business may decide that its goal is an increase in profits of six percent. Questions then arise, such as:

How much will the business have to increase its sales to achieve this?
Is a 10 percent increase in sales feasible? If so, how much of that will be eaten up by increased costs directly related to the increase in sales?

Where should the sales increase come from? Is there unrealized potential in sales to current customers? If so, how can the business realize these sales? What, specifically, can it do, and who’s going to do it? Or will the increase in sales involve expanding the current market?

Again, questions arise about how this will be done, and who’s going to do it. Expanding a market usually involves costs as well. How much? Will the increase in sales justify the costs – and trouble – of expanding the market, keeping in mind that not all costs are monetary?

Obviously, such a plan – whichever direction the business decides to take – will need careful monitoring to determine if it continues to fit in with the profit plan. It’s all too easy to get caught up in the numbers, however. Many businesses have made the mistake of dropping or cutting back on a product or line of service that has low sales and profitability, only to determine later that the product or service is essential to the business. Customer expectations can play a significant role in decisions about products and services. Any decision has to make sense in the overall context of the business.

Also, it’s very difficult to determine if and when to cut your losses with a particular product or service. Be very conservative in planning on profits for a new product, market or service, and be sure the business can capitalize, or carry, the cost for a long period of time.

Profit planning begins with a goal, a certain profit, and then focuses the business’ efforts toward that goal. A cash flow or budget, in contrast, emphasizes the patterns of cash entering and leaving the business. Obviously any profit planning needs to be integrated with the cash flow projections and budgets of the business.

Managers frequently tend to overlook or reject any notion of profit planning, usually because they consider it futile, frustrating or both. This attitude may stem from a history of trying to meet unrealistic profit goals. As a result, profit planning becomes an afterthought, to be undertaken when every other planning chore is complete – which usually doesn’t occur.

Accurate historical information is essential to any type of profit analysis. Furthermore, information about costs and profitability are essential to pricing decisions. If you’re unsure of the profitability of the various products, lines or services in your business, you should probably consider investing in some professional accounting help to obtain this information.

Profit planning should be a beginning point, not an end point. Questions of profitability should be an ongoing focus. When done realistically and correctly, other planning efforts fall into place and coordinate. A successful business frequently is one that has planned carefully for its success.

Mary McVicker was a tax attorney before leaving to teach and write. She has been a small-business consultant and freelance writer in Brookfield, Ill., for more than 16 years.
The Morbark Model 20/36 Whole Tree Chipper is designed to fit the niche between whole tree and hand-fed chippers. It recycles brush, logging slash and orchard prunings. It has a 16-inch diameter chipping capacity. Equipped with a Mor-Lift Model 150 hydraulic knuckleboom loader and grapple. The 20/36 has a lift capacity of 2,000 pounds at 10 feet. Standard features include an enclosed weatherized operator's cab, four-way adjustable seat, cat chain infeed and an oversized infeed opening that accepts tangled and disoriented brush. The 20/36 has a drum speed of 1,000 to 1,100 RPM and can be equipped with either a Cummins or John Deere engine. Options include a combination air conditioner/heater, Halogen light package, hot water heater, five horsepower air compressor and a tool box.

Terravention — the process of decompaction and aeration of the soil in a tree's root zone, followed by an injection of mycorrhizal fungi — recently received a stamp of approval from the Royal Botanic Gardens at Kew in London. Following a five-year program of treatment, Kew awarded its "recommended product" seal of approval, which means the words "Royal Botanic Gardens Kew" plus the royal crest may be used on promotional material. The Terravention machine is powered entirely by inert compressed gaseous nitrogen from two cylinders mounted on the road-going trailer. The gas is released at pressures of up to 800 psi at depths of up to 24 inches. Any liquid media can then be pumped into the freshly aerated soil by the gas powered pump, which is also mounted on the trailer. With few moving parts and no compressor, Terravent is quiet, inexpensive to run and maintain, and pollution free. In addition to Kew Gardens, the Terravention process is successfully being used by Hampton Court Palace and by many leading UK arborists. For more information, call Tim Rundle at 305-479-9016 or visit their Web site at www.terravent.com.

MTI-Supply, the parts and accessories division of Mobile Tool International Inc., has released the Telsta T40C replica, a 1/24 version of the Telsta T40C. It is available for $37, or is free with the purchase of a full-size T40, A28 or EU. This unit is mounted on a new GMC Topkick. It includes a reel lifter, cable guides, bullwheels, tow line, fixed fairlead, storage tubes, "D" block storage bin, strobe light, tow hook and plastic basket weather shields. It is 5 3/4 inches high by 14 inches long and 4 1/4 wide and features working headlights and taillights. For more information or to order, call (800) 521-5351, fax (303) 657-2205, or e-mail mti-supply@mobiletool.com.

The RedMax Clean Air Trimmer BCZ2500S meets CARBII and EPA standards with a 25.4 cc, two-cycle Strato Charged engine, the only engine without a catalytic converter to meet the 2000 standards. Compared to previous engines, the BCZ2500S engine weighs 5 percent less, uses 34 percent less fuel and reduces emissions by 73 percent. Clean air standards are met by introducing fresh air into the engine between the exhaust gases and the fresh charge of air/fuel mix. This ergonomically engineered commercial-grade bump-and-go trimmer carries a two-year engine-to-cutting-head warranty. For more information, contact RedMax, a division of Komatsu Zenoah America Inc., 4344 Shackleford Road, Suite 500, Norcross, GA 30093 or call (800) 291-8251, Ext. 213, fax (770) 381-5150, or go to www.redmaxcom.
Officials at Hotsy have announced the launch of its new Web site, www.hotsy.com. The site provides visitors with detailed information on the full line of Hotsy products, including more than 90 models of hot-water pressure washers; more than 25 models of cold-water pressure washers; detergents; top- and front-loading automatic parts washers; high-pressure water pumps; and Hotsy parts and accessories. The Web site also details basic information on pressure washing. This section helps consumers understand how to pick the right cleaning solution for their needs. The site also allows visitors to search for a Hotsy distributor by state or province and provides a method for communicating with technicians for customer service and support. Product literature may also be requested online. For more information, call Jenny Nixon at (877) 283-2412, Ext. 284.

Tree Management Systems Inc. has announced ArborGold Software version 9.0. This program manages customers from the initial phone call to proposals, scheduling, invoicing and receiving payments. New features include an appointment scheduler, directions map, built-in landscape CAD designer and a synchronizable database. This helps salesman and/or crew become a mobile office. The handheld PC is about the size of a legal pad, includes a CD-ROM, digital camera, and built-in handwriting and voice recognition. ArborGold includes routine features such as auto scheduling, routing, chemical usage, and customer marketing. ArborGold also has a new QuickBooks posting feature. For more information, call (800) 933-1955 or go to www.turftree.com to download a free demo.
Morbark Opens Support Facility in Florida

Morbark has announced the grand opening of its new expanded Florida support facility in Sarasota. The 11,000-square-foot facility is larger and will offer more services and support to Morbark’s Florida customer base. More space also translates into a larger and better-organized parts inventory of replacement and wear parts for the Florida equipment population.

With 4,000 square feet of service space and a full complement of shop tools and equipment at the new facility, Morbark technicians will be able to perform everything from minor repairs to complete rebuilds on large equipment, including tub grinders, wood hogs, chippers and trommel screens.

Strong Manufacturing Under New Ownership

Strong Manufacturing Co., the Remus, Mich.-based manufacturer of Trelan Whole Tree Wood Chippers, has new ownership under Neil and Cheri Schumacher. The company now does business as Trelan Manufacturing.

Plans are to continue building existing models to establish quality standards while offering customer support after the sale. Research to determine needs for additional models and product offerings will take place in the near future. The primary market for Trelan Chippers has been chip producers for the pulp and paper industry.

The company intends to expand its customer base to include construction contractors, recycling yards and tree contractors through expansion of its dealer network, both in the U.S. and internationally.

Strong Manufacturing was founded and incorporated in 1973 by Don Strong.

PLCAA Updates Its Web Site: plcaa.org

The Professional Lawn Care Association of America recently made revisions and additions to its Web site, certification program, and educational product line.

The Web site, www.plcaa.org, now contains features such as a locator of PLCAA members and an order form for the PLCAA’s updated “Principles of Landscape Tree & Shrub Maintenance” certification book. The book is for operators seeking their COLP (Certified Ornamental Landscape Professional) certification.

PLCAA members receive a discount on enrollment fees.

Other new products on the PLCAA Web site include educational products for managers as well as various publications on turfgrass, weed and pesticide management. In addition, there are new interactive CD-ROMS on plant identification and lawn and garden equipment.

For more information, contact PLCAA at (800) 458-3466 or visit www.plcaa.org.

Aventis Introduces New Label for Suspend SC

Aventis Environmental Science has announced a new label for Suspend SC Insecticide, which became available Dec. 1. The one-gallon containers, formerly available only in California, are now available nationwide.

The one-gallon size makes up to 512 gallons of insecticide, which can be used to treat up to 512,000 square feet. Suspend is approved for a variety of residential, industrial and institutional uses and is designed primarily for larger perimeter treatments.

Suspend SC is part of a full line of DeltaGard low-dose insecticides from Aventis Environmental Science, including DeltaDust and DeltaGardG. For additional information, call (800) 331-2867, or go to: www.Aventispmp.com.

Rapco Industries Has New Sales Address

Rapco Industries Inc. of Vancouver, Wash., will be handling sales directly from its Vancouver plant. Rapco’s new address is: 6000 NE 88th St., Vancouver, WA 98665.

Rapco Carbide Chain sales were formerly processed at Rapco Marketing Inc., Box 5219, Vancouver.
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When the Children Take an Interest . . .

By Peter Gerstenberger

I am a veteran of six “Careers in Arboriculture” or “Trees are Cool” elementary school presentations in the past five years. It helps to have children in the first and fifth grades of a school system that encourages a lot of parent involvement, and I have a hard time saying no to anyone. Beyond that, I’d like to make a difference in my children’s lives and have them understand and be proud of the profession I’ve chosen.

Making a presentation to a vocational school, high school or college/university audience has an obvious, immediate value,
but first-graders? What is the payoff?

How long do you plan on being in business? If arboriculture is your passion and you can think of doing nothing else – and if you have (or plan on having) employees – then let’s recognize a simple fact. There are future arborists out there who cannot even spell the word “arborist” yet. It’ll be years before they fill out an application, and even longer before they contribute to the success of your business, but they’re out there right now.

Not only is your future workforce still in school, so is your future clientele. In a very real sense, your future is in school. You owe it to yourself – you owe it to your profession – to get there as well and impress a new generation with what you find important about your career in trees.

I want to pass along some of the things I learned, and urge you to share your passion for arboriculture with a child. When I was young, I don’t remember having any serious thoughts about my career. Like a lot of people, I backed into my career in arboriculture. My most vivid memories related to my career revolve around experiencing, and being enthralled with, things in the world of nature and trees. Those experiences, along with my friend’s mom admonishing me that, “There’s no money in being an architect,” did the trick for me.

Later in life, finding arboriculture was like finding something already familiar and important to me. It clicked. Just think how much easier the lives of today’s kids would be if they started out knowing there is such a person as an arborist.

Here are some observations from my recent experiences as a guest lecturer in grade school:

♦ The kids are going to be more knowledgeable than you think. They can be a tough crowd if your delivery is somewhere below their level of understanding. Don’t go in without knowing a little bit about where they are in their learning. When you’re delivering your message to your own children’s classes, it’s a little easier. If you don’t have kids in grade school, you have to do a little homework. Try to meet with the teacher beforehand to learn the curriculum or get samples of what the kids are studying.

♦ Keep your presentation, if it’s classroom only, to no more than 30 minutes with plenty of time for questions. With considerable public speaking experience
to all kinds of audiences, I can tell you that kids’ attention spans are not much different than adults’ attention spans, but kids ask a lot more questions!

- Use visual aids. I made several of my presentations in full climbing regalia. First-graders were enthralled by my illustrations of an arborist at work, with captions for arborist terms like saw, tree, rope, etc., along with the appropriate number of blanks beside each term so the students could practice their writing skills. One year I taught tree identification with climbing spurs, but they intuitively understood that they could only be used on the sick and dead trees. For a presentation on tree identification, I handed out fresh twig and leaf samples.

- Have a plan. Develop your own curriculum or borrow someone else’s. Use handouts. For third-graders, I used an arborist-oriented multiple-choice fun quiz of a simplified tree I.D. key and handed out maple sugar. Another year I taught knots with 5-foot sections of three-eighths-inch braided rope. Teaching real knots to second-graders is rewarding for the student but fraught with danger for the instructor. Trust me on this one.

- A few tricks are good. Remember, they have stuff like Nintendo, Game Boy...
and other strong stimuli. Fourth-graders were very impressed when I used some simple mechanical advantage to pull the largest kid in class across the room in his chair with just the use of my thumb and index finger.

- Involve the audience. Take the little know-it-all in the back row and make him/her be your "tree." Don't do it to shut him up, do it to get him involved.
- Don't be intimidated. You know more than they do about your chosen profession. Your passion will show. Grade-school children for the most part have not yet learned to be skeptical or cynical. Instead they are inquisitive and very sincere. It can be so much more rewarding to talk with an impressionable child than to try to make some impression with a know-it-all client.

You don't have to be perfect, either. Children are forgiving.

- Commit to do something. I distinctly remember my last presentation. I had just returned from a grueling five-day business trip to Brazil. I was way behind in the office, and I had committed to a presentation for my son's first-grade class sandwiched between two workshops that I was presenting. I was not looking forward to this, but I had committed, and my handouts were ready. I did it, and it was one of most rewarding days of my career. I will have the thank-you notes and drawings those children made for me up on my corkboard for a long time to come.

Something else you may discover is that teaching others about your passion and your career may help reacquaint you with why you got into this business in the first place.

So to recap:

1. Go in prepared. Bring in enough material (presentations, handouts, hands-on, etc.) for an hour. It's better to bring in more material than not enough.
2. Bring it in on their level. Don't talk below or above them. They will want to share stories with you too, so allow time for that.

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3. Make it interactive. They love to be a part of the presentation. They also love to go home with something from the presentation.

4. Have someone take pictures. Spread the good news with your peers.

5. Enjoy yourself and relax. Here is some general insight into children at various grade levels:

First-graders are just learning to read and write. Hands-on and interactive is best with them. They love to tell their stories too. Materials might include a page to be colored and another page of words that they can cut and paste on their coloring page.

Second-graders are reading chapter books and are really catching on to all this school stuff. They love to help (as do all grades). Material could be a sheet with scrambled “tree” words or a poem.

Third-graders are very good readers. Material at this level could encompass a puzzle, word search, scrambled words, etc. They are a bit bolder so be prepared. If they start talking off the subject, just say, “Okay now, let’s get back on track.”

Fourth-graders and up really have a total grasp of subjects so the sky is the limit.

Any grade will have children who are disruptive. Stay focused on the ones listening. The teacher will take care of the ones who are not listening. If you just leave an impression with one of them, it will be rewarding.

6. As long as you go in totally prepared, arrive on time, have extra material and expect to have a good time, everyone will enjoy the experience.

Good luck, and whatever you do, don’t let second-graders practice their knots by tying you up. But, that’s another story.

Peter Gerstenberger is vice president of business management, safety and education for the National Arborist Association.
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Confident in Your Felling Operations?
Often I am asked after a presentation, “How did you know that tree would go there?” I usually answer, “I wasn’t.” Well, “wasn’t” is southern terminology for not being sure. “Wasn’t” is a past-tense experience. I guess in the south — and probably elsewhere — experience has been a good teacher. In my mind, I may have had a doubt the tree would perform as I would have liked, landing in its perfect placement. Lucky that time — it worked out.

Why did I go ahead with the task? Was it because the information and plan outweighed my common sense? No, no. Usually I continued because the outcome wouldn’t have been too terrible either way. Not all plans work, right? The trick is to limit the liability. What happens if the results of the plan go wrong? Say, if the consequences end up being much more costly? What if the tree going wrong damages an adjacent structure or causes personal injury? What has happened?

My answer would have to be one of these two:

1. The person in charge didn’t possess the skill, aptitude, tools or training to handle the task. This is not an issue of experience.

2. The person didn’t plan.

Why just these two? It simply doesn’t take a lot to figure. You can say it was a mistake, an accident, or write it off to fate, but facts are facts. There is a reason the property was damaged or the person was injured or killed.

In the scenario I spoke of, I didn’t know for a fact that an accident wouldn’t take place. I “wasn’t” sure. Nevertheless, I was already clear in my mind that if something went wrong, the damage and the extra work to correct it would be manageable. I was as certain as I could be, in that particular situation, with thought given to the information available and the plan chosen, that I, and everyone else around, would walk away unharmed. If the tree went toward its lean and not in the desired direction, everyone was clear as to what could happen. That’s the reason for a plan — taking the time to simply anticipate all options!

How can a tree — or anything else — harm property or a person if everyone in the area is aware and taking planned steps to prevent problems? A house would not be harmed by a falling tree if the distance from it is great enough. Someone placed the house or tree too close. In our case, someone didn’t take sound information, or formulate a plan, have the proper tools, or get the
To fell a tree safely, the hinge cut must be planned and cut properly to direct the tree to a safe and specific landing zone.

Proper training to handle the task. Simply No. 1 or No. 2! If it's not the case, it is an act of God. Someone is still responsible.

This year I have had two maintenance workers with county parks crews tell me they had been hit by falling trees more than once. Naturally, they placed most of the blame on the saw-wielding co-worker for the accident. However, this rather substantiates a theory that safety isn't necessarily a one-person program. It is an awareness of all situations that may occur. Just for my clarification – if the gentlemen hit by the trees knew the tree was tall enough to hit them, why didn't they move?

If you and someone else are in a work area, especially if others don't know what you are doing and are not watching you work, you may become surprised by a falling tree or limb. It sometimes takes two for accidents to take place. If both parties are planning,
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and standing in the proper places, the results should be a bit more positive. Thus, the long-standing rule of not working within two tree-lengths of falling trees is a good one.

What about certain techniques? Can they be at fault? With techniques – such as understanding and using a hinge and what a hinge can do for your safety – there are still important parts of planning to make sure you and/or others around understand the risks and are prepared.

**Example technique:**

The hinge is planned, placed and installed, and attempts to keep the tree (or limb) directed during its fall. A sawyer relies on the hinge to direct the tree to a specific place during the fall.

**Exceptions or limitations:**

- If the hinge is in bad fiber material, it might not hold.
- If the hinge is not shaped correctly, it might weaken during the tree’s movement.
- If the notch isn’t opened correctly, the hinge might be weakened or broken early during the fall.
- If the face notch and hinge directions are not correct – for example, if it is compensating for sidelean – it might not hold.
- If the sidelean weight is too much for the hinge strength, it might not hold.
- If the top of the tree or limb brushes another, it might break the hinge.
- If the hinge is purposely or mistakenly removed by the sawyer, it might/will not hold.

All of these seven are among the things you need to consider when selecting a technique or job task for felling a tree. These are things the saw operator and anyone else on the crew must be aware of. Otherwise, is it a safe area to be in? Many times techniques are applied without enough planning knowledge. All-important information is set aside for what is believed to be improvements in production.

There is a technique used by tree care and logging professionals in the United States. In the western United States, it’s called “Dutchman” or “Dutchcut.” In the East, it’s usually termed “stumpjumping.” I’ve been told many times by professionals that experienced fallers don’t need all this hinge and wedge stuff: “I can put the tree right where I want it to go without all that.” It’s true, many times they can. Other times, something or someone is in the way if the tree doesn’t go right.

The Dutchman, or stumpjumping, requires either a modified notch or removal.
of hinge on one side to allow the weight of the tree to start a momentum and rotate the weight of the tree in a desired forward direction. Often this can be performed successfully on trees with substantial side or back lean. These techniques however, require very accurate information and near-perfect wind and tree fiber conditions to be successful. It is also very important that the tree not contact another limb or tree during this rotating action, or the tree will bust or go astray. Broken trunks, tops or limbs are often thrown toward the sawyer. Either way, more variables mean more chances for failure. That’s why OSHA dictates that the Dutchman, or these similar swing or launching techniques, are illegal and should not be used by professionals and novices alike in the workplace. That’s federal law! In all cases, it places the sawyer close to the tree, not in an escape route, during the tree’s initial movement. Many injuries and deaths are attributed to these techniques.

So, whether a hinge is weak or is taken partially off by a sawyer, control is minimized in some fashion.

Confidence should be a true sign of a professional in any trade, especially chain saw work. However, that confidence must not be assumed by anyone. It must come through training, experience, communication and a safety awareness that never sets aside the time for taking information and planning.

Crews can be observed in many places with this scenario: One person working, and another one or two standing watching, or maybe even performing another job site task. Do they know or do they understand the plan and the risks? Are they concentrating on their own tasks or conversations? All work should stop on the site if they are not paying attention to the plan! I hear often, “we would be here all day if we wait on him to finish.” “We get paid by production, we have to work close sometimes.”

Productivity is a by-product of two things - safety and precision. Production comes when safety is numero uno and precision is an every action event.

Tim Ard is president of Forest Applications Training, Inc. and is a nationally known professional chain saw applications instructor. If you would like receive more information or have questions answered regarding chain saw applications, send a note to Forest Applications Training, PO Box 1048, Hiram, GA 30141, or e-mail to timard@forestapps.com or visit the Forest Applications Training Web site at http://www.forestapps.com.
Third Public Comment Period for ANSI A300 Tree Pruning Is Now!

A third 45-day public comment period for the review of the scheduled five-year revision of ANSI A300-1995, *Tree Pruning*, has been approved by the National Arborist Association, the ANSI-accredited Standards Committee (ASC) A300, and the American National Standards Institute.

The period began Feb. 9, 2001, and ends March 26, 2001. The revision draft is available as a free download from the NAA Web site, http://www.natlarb.com/standard.htm or by sending an e-mail request to Rouse@natlarb.com.

Hard and fax copies are available for a $5.50 shipping and handling fee. Call (800) 733-2622 and use your credit card or member account to order.

Public comments must be sent directly to the NAA, attention Bob Rouse (e-mail is the preferred method at Rouse@natlarb.com).

NAA members can also participate directly in the process by joining the association's Tree Care Standards Review Committee. This committee forms the NAA's consensus opinion by reviewing A300 drafts and submitting comments. The comments are used to form an NAA opinion that is presented to the ASC A300 by the NAA representative, Ron Rubin. Call Bob Rouse at the NAA office if you are interested.

The ASC A300 intends this to be the final public comment period. The committee intends to approve the revision at the next meeting, see below.

Meeting Notice

The next ASC A300 Meeting is April 5 and 6, in Salt Lake City, Utah.

---

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Chipper Safety

By: Jeffrey Lee, Branch Management, Riverside, CA (909) 276-8060
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Think back to the very first time you were exposed to a brush chipper. On first appearance, it looks like any other huge machine with a design specific to its purpose. After the jobsite is coned off and the track and chipper tires are chocked, wearing an orange vest, an experienced and trained team member walks up and turns the engine over. The hum of the motor sounds like any other engine as it warms up and the governor adjusts to keep a steady RPM level.

The brush pile increases in size. The ground person walks back to the control panel to prepare this awesome hungry beast for feeding time. A slow but firm pull on the clutch handle tightens the belt drive and wakes the enormous and heavy flywheel into motion. The blades from within start their rotation and the feeding wheels turn and invite any object in for a brief visit.

By now the engine in concert with the whine of the blades spinning, fill the neighborhood with the sound of industrial power. The ground person adjusts his hardhat, eye and hearing protection, tightens his gloves, then calmly grabs an armful of brush and lays it on the feed table of the chute. Taking a couple of sidesteps toward the curb to avoid the oncoming brush he nudges the pile into the waiting feed wheels of the chipper.

Once the wheels get a grip on “butt” end of the pile, the brush starts to contort and twist its way into the small opening. The feeding wheels open its spring-loaded jaws and appear to chew the brush while pulling it inward. The sound of cracking tree branches is overpowered by the sound of the wood making contact with the blades. The loud buzzing sound of the tree being violently chopped into little bite-sized pieces rings out above the sound of the surrounding traffic, chainsaws, and even the howl of the engine running this powerful machine.

The inertia and force of the blades takes the now mutilated tree particles and sends them flying through a chute that resembles a cannon aimed into the back of a truck bin. The blurry spray of wood chips fly through the air with fierce velocity and ricochet into a final resting place in the waiting truck. Small pieces of brush somehow escape the feeding wheels of the chipper and lie on the vibrating chute. With the fluent push of a wooden brush paddle (controlled once again by the skilled ground person), the small pile disappears into the jaws to meet the same demise of the larger pile.

The process continues nonstop as you walk away feeling somewhat alarmed by the indiscriminate power of the brush chipper. The feeling you had right at that moment is respect, both for the machine and the operator. The ANSI standards were designed to help us maintain that respect, through safety procedures and safe working practices. Don’t forget that feeling.

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Location and dates to be announced
Contact: (517) 482-5530

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14th Annual Metropolitan Detroit Landscape Assoc. Trade Show & Convention
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Novi, Mich.
Contact: Diane Andrews (248) 646-4992 or (800) 354-6352 MI only.

March 8, 2001
Michigan Forestry & Park Association
“Golf Courses and Tree Management Workshop”
Michigan State University
Contact: (517) 482-5530

March 12, 2001
Mass. Arborist Association Seminar
“EHAP and Fertilizers”
Contact: (508) 653-3320

March 13, 2001
Rhode Island Tree Council hosts
“Trees and Utilities” seminar by National Arbor Day Foundation
Radison Hotel
Warwick, R.I.
Contact: (401) 647-9922

March 14-16, 2001
29th Annual Wood Technology Clinic & Show
Portland Convention Center
Portland, Ore.
Contact: (800) 527-0207 or visit www.WoodWideWeb.com

March 26-28, 2001
Building With Trees Conference
Arbor Day Farm/Lied Conference Center
Nebraska City, Neb.
Contact: (402) 474-5655

March 27, 2001
Mass. Arborist Association Meeting
Wayland, Mass.
Contact: (508) 653-3320

March 29, 2001
Juniper Symposium
Glen Rose, Texas
Contact: Larry Schaapveld, (817) 926-8203

March 31, 2001
Texas Tree Climbing Championship
Zilker Park
Austin, Texas
Contact: Mike Richardson, (972) 442-1524

April 7, 2001
Rhode Island Tree Council Annual Conference
Newport, R.I.

April 7, 2001
ISA Southern Chapter Annual Meeting
Sheraton Birmingham
Birmingham, Ala.
Contact: Dwayne Carter (336) 789-4747

April 21, 2001
Committee for the Advancement of Arboriculture
Lightning Protection and Installation
Freehold, N.J.
Contact: (732) 431-7903

April 24, 2001
Mass. Arborist Association Dinner Meeting
Wayland, Mass.
Contact: (508) 653-3320

April 25, 2001
National Arbor Day Foundation
“Trees, People and the Law”
Columbia, S.C.
Contact: (402) 474-5655 or (888) 448-7337

May 2001
National Arbor Day Foundation Hazard Trees Workshops
Nashville, Tenn.
Morgantown, W.Va.
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May 1-3, 2001
Urban Wildlife Management Conference
Arbor Day Farm/Lied Conference Center
Nebraska City, Neb.
Contact: (402) 474-5655 or (888) 448-7337

May 4-7, 2001
ISA Western Chapter Annual Conference
DoubleTree Hotel & Modesto Convention Center
Modesto, Calif.
Contact: Bob Tate (530) 892-1118 or Ray Morneau (650) 964-7664

May 6-9, 2001
Southern Chapter of the ISA “Tree Structure and Mechanics: How Trees Hold Together And Fall Apart”
DeSoto Hilton, Savannah, Ga.
Contact: Dwayne Carter, (336) 789-7766

May 7-18, 2001
Committee for the Advancement of Arboriculture
Basic Tree Climbing School/Course
Thompson Park, Lincroft, N.J.
Contact: (732) 431-7903

May 8-10, 2001
Utility Safety Conference & Expo 2001
Atlanta, Ga.
Contact: Denise Kula (847) 639-2200 or www.utilitiesafety.com

June 3-5, 2001
Locally Lead Conservation Efforts
Arbor Day Farm/Lied Conference Center
Nebraska City, Neb.
Contact: (402) 474-5655
June 23, 2001
NJ Tree Climbing Championship
Cadwater Park
Trenton, NJ
Contact: Gary Lovallo, (888) TREE - 034

July 14, 2001
Michigan Forestry & Park Association
Tree Identification Workshop
Michigan State University
Contact: (517) 482-5530

July 20, 2001
Conference on Woody Plants
The Scott Arboretum
Swarthmore, PA
Contact: (610) 388-1000 x 507

July 21-23, 2001
TPI Summer Convention & Field Day
Spokane, Wash.
Contact: (800) 405-8873

July 26-27, 2001
Emerald Expo
Green Industry Trade Show & Seminar
Seattle, Wash.
Contact: Julie Ellenhorn (877) GREEN55

September 11-12, 2001
Michigan Forestry & Park Association
Annual Summer Meeting
Multi Lakes Conservation Camp
Contact: (517) 482-5530

October 2, 2001
Washington Landscape
Trade Show & Field Day
Western Wash. Fairgrounds
Puyallup, Wash.
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National Arborist Association
Winter Management Conference
Ritz-Carlton Kapalua
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Documenting the Soil Test for Site Specific Fertilization

By Norm Helie

Why test soil

There is a renewed interest in soil fertility and plant nutrition after several decades of fertilizing trees based only upon recommendations from fertilizer manufacturers, rather than the needs of the soil and the plant. The disciplines of plant and soil science can be extremely useful for fertilizer recommendations. Unfortunately, many arborists are unaware of the benefits that the science of plant nutrition offers. Some arborists have gone as far as eliminating all chemical analysis and recommendations from their plant health care program and have exchanged it for a safer biological amendment. This reckless disregard for plant and soil science is counterproductive to innovative research in arboriculture.

Ninety percent of all plant problems are soil related (Urban, 1998), but rarely is soil testing done — and when it is done it is often done improperly. Proper soil testing includes:

1. record keeping
2. soil sample collecting
3. biological, chemical and physical analysis
4. interpretation and recommendations

Optimal water and essential elements for growth provided by soil could minimize pathogen-related problems by as much as 90 percent and insect infestations by as much as 50 percent to 60 percent. Knowledge of plant species cultural needs is imperative in the soil testing process. The end results of good soil testing and fertilizer treatments are healthy growing trees and turf and subsequently a reduction in pesticide use.

An initial consultation or sales site visit should include soil testing. For determining water and nutrient essentials a descriptive soil profile provides vital information for watering, drainage, fertilizer and pesticide-application methods. The watering frequency for a topsoil (rhizosphere) can vary markedly according to the depth of rhizosphere. For water conservation, a short rhizosphere over a gravel sub-soil requires a more frequent and smaller supply of water. A deep, dark organic soil requires longer and less frequent watering and this, too, will conserve water and promote deeper plant rooting.

The soil profile and textural class also govern the method of soil fertilization or pesticide applications. Shallow sandy soils with 3 percent to 5 percent organic matter need not be treated with sub-surface pressurized injection. A timely, less costly, and simpler surface application with watering can optimize plant uptake and prevent unwarranted groundwater contamination of both pesticides and fertilizers.

The benefits of incorporating (slow-moving) nutrients and pesticides through sub-surface pressurized injection are maximized on a clay type soil or in a deep, dark soil rhizosphere. Nutrients like potassium and phosphorus are slower moving. Otherwise, it is safer for our environment and better for the trees to apply fertilizers or pesticides right to the surface of the soil surrounding the plant at the correct time. The following is a method used to collect soil samples, document them, and then aid in interpretation for site-specific fertilization.

How to test soil

Determine the number of soil testing pits. Then mark each pit with marking paint and have proper authority approve digging in marked location(s). The number of pits needed for an accurate composite sample is determined according to the slope of the terrain and textural class of the topsoil in the soil profile. An acre of level terrain unaltered requires at least three to five soil profile pits. As the soil becomes increasingly urbanized, the variability increases, requiring more sampling per unit area. Sometimes even a single large tree requires three to five soil profile pits. The following is a method used to collect soil samples, document them, and then aid in interpretation for site-specific fertilization.

Sample Soil Pit Documentation:  

<table>
<thead>
<tr>
<th>Low Range</th>
<th>High Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>2&quot;</td>
<td>2&quot;</td>
</tr>
<tr>
<td>4&quot;</td>
<td>4&quot;</td>
</tr>
<tr>
<td>6&quot;</td>
<td>6&quot;</td>
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<tr>
<td>8&quot;</td>
<td>8&quot;</td>
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<tr>
<td>10&quot;</td>
<td>10&quot;</td>
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<td>12&quot;</td>
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<td>14&quot;</td>
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<tr>
<td>26&quot;</td>
<td>26&quot;</td>
</tr>
<tr>
<td>28&quot;</td>
<td>28&quot;</td>
</tr>
</tbody>
</table>

**Soil Sample Documentation**

- Hummus Layer
- Abrupt Transition
- Gradual Changes
- Compacted Layers
- Sample for Physical and Chemical Analysis
- Perched Water Table
- Water Table
- Ledge
- Bedrock

Figure 1
Make the pit wide and long enough so that after excavation of soil you can compare the profiles of the various pits you have created.

When the excavation is finished, place the turf grass on top of the filled-in soil testing pit. Customers will appreciate your attention to detail!

Collect your soil sample right above the sub-soil and at the bottom of the (rhizosphere) topsoil. Be sure to label each profile.

After digging into the sub-soil layer, check for color and odor. Sub-soils should be brown, yellow or red, with no offensive smell. If it is spring or fall, make a record of earthworm population.

From here on use a soil probe to validate the uniformity and non-uniformity of the soil profile, delineating all findings, including compaction, on a scale drawing. Soils near trees tend to be more compacted than soils in open turf grass areas. Note all such findings for future planting projects. Make recommendations specifying products that could mitigate compaction on these specific sites.

A wider and longer soil test pit makes it easier to compare soil profiles. Leave the pits open and, after excavation of soil, examine the soil profiles for uniformity in color, texture and the volume of soil explored by roots (rhizosphere). Record all layers of soils that are compacted. Be aware that moist soils based on visual inspections may not appear compacted; therefore, bulk density tests may be needed. Make a record of earthworm population during spring and fall. It is important to collect soil from the rhizosphere — the area in which the majority of the tree roots grow. Usually in sub-soil layers the numbers of tree roots diminish substantially. Collect the soil sample right above the sub-soil and at the bottom of the (rhizosphere) topsoil. Place an X on the soil profile in Figure 1 to note where the sample was taken.

Tarps or barrels should be used for the excavated soil. In a turfgrass situation these make cleanup easier and people will appreciate your thoughtful service.

For many areas, natural watering is advised because of budgetary constraints, water conservation, and the negative impacts of the irrigation installation on tree roots. Large root loss from trenching and tunneling can set the stage for tree decline. Any and all such construction should be at the discretion of a professional arborist.

Nevertheless, natural watering without sufficient and adequate plant nourishment is futile. Water and nutrients are necessary for plants to withstand environmental stresses. Never count on natural rainfall if soils are potassium deficient. Potassium sufficiency in soils and plants optimize water by stomatal water conservation. Our New England soils are potassium deficient. Furthermore, liming potassium deficient soils without potassium fertilization is extremely dangerous. Trees and turf will be subjected to extreme diurnal and seasonal water deficient stresses. For fertilization interpretation and recommendations, seek professional advice.

What to test for

Test the soil for all the macro and micronutrients that are recommended by your local extension specialists. If test results...
give deficient micronutrient levels and/or physical micronutrient deficiencies symptoms exist, a foliar analysis is an excellent means of confirming the diagnosis. Usually a micronutrient deficiency can be corrected by improving drainage or maintaining a narrow, specific pH for that tree. Micronutrients are only needed at levels of ounces per acre furrow slice (6 inches to 8 inches of top soil). Tree roots explore more than an acre furrow slice and therefore grow much deeper and can obtain these microelements from varying depths. Micronutrients in a medium range should always be considered sufficient for plant growth.

With each nutrient analysis, remember the cation exchange capacity (CEC), percentage of organic matter, soil pH, and buffer (lime requirement) pH. In addition, check physical conditions such as textural class and particle size distribution. This information is extremely important for determining a soil's potential for compaction. Amendment programs can prevent soils from being prone to compaction. Often soil amendments are strongly advised to increase the CEC.

Make recommendations based on the pure soil science of the CEC, organic matter (potential estimated nitrogen), buffer pH, and the nutrient deficiency levels of phosphorus, potassium, calcium, magnesium, and micronutrients. The CEC is the most important chemical property of the soil. The percentage of organic matter and clay content influence CEC. Soil with low CEC should be fertilized more frequently and at lower rates. The buffer pH tells how much lime is required to raise the pH to a specific value.

Soil and plant analysis are being underutilized by the tree care industry today. Use soil testing and documentation as a means to obtain proper plant nutrition and a safer environment. Record keeping is vital in any plant health care program. “There is good evidence that the competent use of soil tests can make a valuable contribution to the more intelligent management of the soil.” (Nelson et al., 1951)

Norm Helie is an arborist and researcher with Tree Specialists, Inc., in Holliston, Mass. Special thanks to Rolf Briggs and the employees of Tree Specialists.

**Literature cited**


---

Massachusetts Town Commons Preservation Initiative

Dig Safe Confirmation: (800) Dig-Safe

<table>
<thead>
<tr>
<th>Town:</th>
<th>Address:</th>
<th>Watershed:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Date of Site Visit(s):</th>
<th>Person(s) Conducting Assessment:</th>
</tr>
</thead>
</table>

**Site Description/Comments:** (Use a landscape plan, drawn to scale, to locate testing pits and probe cores or a simple sketch in the space below.)

<table>
<thead>
<tr>
<th>Post- and Pre-construction Information: (Any digging, trenching or soil and root disturbances in the past and/or planned for the future five years.)</th>
</tr>
</thead>
</table>

**Record Soil Color:** (Use Munsell Soil Color Charts.)

**Record textural class of Rhizosphere:** (Use the textural class triangle and examine soil in hands.)

| Percent sand: | Percent silt: | Percent clay: |

**Record Sub-Soil Textural Class:**

- Clay
- Gravel
- Sand
- Ledge
- Hardpans

**Slope:**

- Steep Slope
  - Highest Point
  - Moderate Point
  - Lowest Point
- Gentle Slope
  - High Point
  - Low Point
- No Slope

**Are earthworm present?**

| yes | no |

If so, how many are in a shovelful?

Any physical evidence suspected as nematodes damage (ie: roots distortion)?

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NATIONAL ARBORIST ASSOCIATION
Correcting Nutrient Problems in Trees

By Scott Anderson

The following photographs of chestnut oak illustrate how potassium deficiency can hurt tree performance, without exhibiting "classic" visual deficiency symptoms. In the photo above we see the classic visual symptoms of potassium deficiency. The center leaf is healthy and the others are showing various stages of potassium deficiency. These symptoms include marginal chlorosis (yellowing) followed by marginal necrosis (sometimes called firing or burning). The photo below shows a potassium deficient chestnut oak with wilting as the most dramatic visual symptom. We can also see some damage to the margins of the leaves, but it does not look exactly like the "classic" symptoms in the top photo.

Trees and other plants need adequate and balanced nutrition if they are to grow properly and stay healthy. Malnourished trees are likely to suffer from disease, insects, drought and other problems. Trees in the landscape often experience much more stressful conditions than trees in a forest. In the forest, the annual fall of leaves, needles and twigs leads to a recycling of nutrients. Most landscaped environments deny trees this nutrient source. Over time, this leads to the lowering of soil fertility levels. Soil around recent construction sites is often less fertile because the subsoil removed for basements and foundations is spread out over the existing topsoil. Since subsoil normally has lower fertility and poor physical properties, the resulting mix is less desirable for trees and other plants. These locations — such as sidewalks, driveways and building foundations — often have soil that is excessively compacted or contains various root restrictions.

While a sound fertility program is beneficial to all landscape areas, it is critical in those areas where we have made problems for trees. Unfortunately, homeowners give little consideration to tree nutrition. If they think of tree nutrition at all, they often believe that lawn fertilizer will be enough to take care of trees in the landscape. Sometimes this works, but more often it doesn’t. Trees and grass are very different species. Their diets are significantly different, and when growing together, they are competitors for nutrients and water. Developing a good tree fertility program starts with understanding the trees’ needs, followed by a soil test. A professional program also includes routine plant analysis to confirm or improve the nutrient program.

Often, there is no single symptom that defines a nutrient problem in trees. How-
ever, trees will give us some clues about nutrient stress. Symptoms include: smaller-than-normal leaves; light-green or off-color foliage; ends of branches containing dead twigs; less-than-normal elongation of branches or growing tips; and a general lack of thriftiness or vigor.

Some nutrient deficiencies cause specific visual symptoms in the foliage.

Different tree species, like different species of animals, can have unique nutrient needs. For example, many maples are manganese accumulators. They require higher amounts of this nutrient for proper growth, and can tolerate higher levels than most other species. Many conifers have a much higher boron requirement than deciduous trees or other plants, and can tolerate much higher levels of boron. Therefore, it is important that soil and plant samples be interpreted for the particular tree species. This means that when you send a soil or plant sample to the lab, you should identify the tree by species, not in general terms like "conifer" or "shade tree." It is also important to include the scientific name of the tree, since common names may vary in different parts of the country.

A soil test attempts to predict nutrient needs and recommend fertility programs to prevent nutrient stress. However, tree nutrition is not easily predicted. Nutrient uptake is affected by factors other than actual soil nutrient levels. These include soil moisture, soil temperature, soil physical conditions, nutrient balances, root and trunk health, and a host of other factors.
These conditions can combine to change a tree’s response to soil test levels and fertilizer programs. Another complication is that trees can store some nutrients from year to year in the over-wintering tissue. This adds some flexibility to application programs, but can complicate our predictions from soil tests. These complications are why most tree nutrition experts strongly recommend that annual leaf or needle analysis be used in addition to periodic soil testing.

**Figure 1**

An example of why both soil tests and plant analysis are important can be seen in the following red maple sample received by Spectrum Analytic in the summer of 2000. No fertilizer was listed as having been applied to the tree, and the customer told us that the leaves had interveinal chlorosis:

**SOIL TEST DATA**

<table>
<thead>
<tr>
<th>Organic</th>
<th>Lb./1000 sq. ft.</th>
<th>ppm</th>
<th>index</th>
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<tbody>
<tr>
<td>CEC pH Matter</td>
<td>-------------------</td>
<td>-----</td>
<td>-------</td>
</tr>
<tr>
<td>17</td>
<td>7.4</td>
<td>4.1%</td>
<td></td>
</tr>
<tr>
<td>P</td>
<td>0.16</td>
<td>12.3</td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>174</td>
<td>16</td>
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</tr>
<tr>
<td>Mg</td>
<td>12.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ca</td>
<td>174</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>H</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>G</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zn</td>
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<td></td>
</tr>
<tr>
<td>Fe</td>
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</tr>
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<td>Cu</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mn</td>
<td>20</td>
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<td></td>
</tr>
</tbody>
</table>

P=Poor, M=Medium, G=Good, H=High

**PLANT ANALYSIS DATA**

<table>
<thead>
<tr>
<th>NUTRIENT CONTENT</th>
<th>%</th>
<th>Ca</th>
<th>Mg</th>
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<tr>
<td>N</td>
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<td>.49</td>
<td>.26</td>
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<tr>
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<td>.13</td>
<td>.08</td>
<td>.76</td>
<td>.3</td>
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<td>.76</td>
<td>.49</td>
<td>.19</td>
</tr>
<tr>
<td>L</td>
<td>8</td>
<td>.30</td>
<td>.76</td>
<td>.49</td>
</tr>
</tbody>
</table>

NORMAL LEVELS: From 1.8 To 3.0

D= Deficient, L= Low, N= Normal, H= High

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Plant analysis has been compared to taking a blood sample of the tree. It is as if the tree is telling us what the problems are. It can confirm suspected nutrient problems, identify nutrient stress before visual symptoms appear, and suggest ways to fine-tune tree fertility programs. It is not as well-suited for telling us why a condition exists. This is where a soil test helps. When soil tests and plant analysis are combined with some knowledge of the recent weather and

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Where \( S \) = number of cores to take outside the band for each core taken in the band.

Accurate soil analysis requires properly taken samples. Above are some tools and diagrams you will need. Take samples inside the drip line, as shown in “Trees.” For continuous ridge-till or furrow/rill-irrigated land, take samples halfway down the bed, as shown in “Raised Beds.” Areas that differ in slope, drainage, past treatment, etc., should be taken separately, as shown in “Cross-Section.”

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TREE CARE INDUSTRY - MARCH 2001
information on other pertinent factors, we can often solve many problems.

In the early stages of a nutrient stress, trees will not normally exhibit visual symptoms. We often call this a "hidden hunger." It can be considered similar to a person going through starvation. On the first day with no food, there is not likely be much effect in the person's work output or appearance. On the second day, that person's work output might begin to suffer, but his appearance would likely be unchanged. By the time his appearance was affected by starvation, his work output would be extremely poor. We should think of visual nutrient symptoms in trees in much the same way. By the time a plant shows nutrient deficiency symptoms, it has been suffering for a long time. A doctor would not diagnose a patient without a careful examination and appropriate tests. Trees are living organisms also, and we need to use all of the diagnostic skills and tools that are available to us.

When we don't use these diagnostic tools, hidden deficiencies can lead us down the wrong path. For example, trees that are suffering from certain nutrient stresses are much more likely to be infected with various diseases. Since many diseases exhibit visual symptoms, we diagnose the disease and treat it. However, in many cases, we could have prevented the infection in the first place with proper nutrition. We need to know which nutrients are available to the tree and how effectively the tree is using those nutrients before we can correctly prescribe preventative or corrective actions. Soil testing and plant analysis are the tools that enable us to do this.

The soil test results in Figure 1 predicted a potential problem with phosphorus (P), boron (B), zinc (Zn), and copper (Cu), and some of us might have predicted that the manganese (Mn) was a problem, given the visual symptoms and very high soil pH. Of the soil test predictions, the low phosphorous, zinc and copper were correct, and boron was not. The plant sample also confirmed the low Mn problem, which the soil test did not predict directly. However, neither the soil test nor the visual symptoms suggested the low uptake of potassium (K),
magnesium and selenium (S). These problems would have remained unidentified without the plant analysis results!

All nutrients are critical to plant growth and each has unique symptoms, problems and interactions. Our example highlights four of them that play unique roles in plant health. These four are potassium, copper, manganese and zinc. Deficiencies in any of these elements make most plant species much more susceptible to disease. In fact, copper, manganese and zinc are the active ingredients in many fungicides. However, excess applications of copper, manganese and zinc could lead either to direct toxicity of these elements or interactions that induce a deficiency of other elements. Sometimes a tree will be made more susceptible to disease and insect damage when the nickel-to-potassium ratio (N:K) or nickel-to-calcium (N:Ca) ratio in the tissue is too high. An excess of nickel, in relation to some other nutrients, tends to produce a “softer” plant that is less able to resist disease and damage from insects and low temperatures. Another function of potassium is its role in maintaining the proper water balance in plants. Plants low in potassium will begin to suffer drought stress long before — and more severely than — those with adequate potassium.

Quite often, the primary visual symptom of potassium deficiency is increased incidence of drought stress and disease.

Each nutrient plays a critical role in the growth and health of a tree. Each nutrient has a unique “classic” visual symptom. However, if more than one problem exists at the same time, the leaves could display some combination of symptoms or the symptom of only one of the problems.

The nutritional status of trees and the soils that they are growing in is the foundation of tree performance and health, and many of the other problems that we deal with will disappear after nutritional problems are corrected. We have the tools and the knowledge to solve many of these problems. It is up to us to use them.

Scott Anderson is the chief agronomist with Spectrum Analytic Inc., in Washington, Ohio.
Cutting Labor Costs

By Ariana Elmakiss

An articulated loader working with a grapple can save hours of valuable labor. The powerful combo eliminates the need for workers to cut logs into smaller pieces and carry them away.

Chances are, if you are like most people currently working in the tree care industry, cutting labor costs means a lot to you. In an ever-tightening labor market, every hour of labor you can save is very valuable.

In past issues, TCI has highlighted labor-saving devices. More recently, NAA member Jim Watson of North American Tree Service in Loganville, Ga., called together the folks from Swinger, Kubota and ImpleMax for a demonstration to find out the best and most affordable grapple/articulated loader combination for his company's needs. Watson has a 20-employee tree care company that does mostly residential work. For this demo, he wanted to see how the ImpleMax 4836L could help him carry wood out of work sites.

The ImpleMax 4836L, on the market for about 3½ years, has a maximum opening width of 48 inches and a maximum opening height of 36 inches, and a winch option is available. Since a grapple can lift large logs off the ground and carry them to a truck or feed them directly into a chipper, workers don't need to cut logs into pieces and then carry them away, one by one. As a labor-saving device, it can cut a three-man job into a one-man job. However, putting a grapple on an articulated loader rather than a skidsteer comes with a hefty price tag. A grapple and skidsteer can be put together for $15,000 to $20,000, whereas an articulated loader runs from $40,000 to $50,000 and beyond.

Those who use the product every day are the ones who should really be speaking about it. Speaking from experience, Watson and two other NAA members share what they discovered about grapples:

NORTH AMERICAN TREE SERVICE, Georgia

Name: Jim Watson, president/owner
Number of employees: 20
Tractor: Kubota 4900 tractor
What he uses it for: Clearing wood and brush out of residential sites

Watson called up Laune Hamilton at ImpleMax before he bought the grapple and asked to see it in action. Although Watson already owned two grapples, he needed a third to help him get large pieces of wood out of residential sites. Watson was looking for a grapple that could work well with his Kubota 4900 tractor. He viewed the ImpleMax working with two loaders and a tractor — a Swinger articulated loader, a Kubota articulated loader and a Kubota tractor. He found the Swinger articulated loader and the ImpleMax working together to be “very, very impressive” — the best of the three combinations. “It can carry huge logs with no problem at all...If you have a log that is, say, 16 to 18 feet long, 25 inches diameter, you can drive through the yard with it.”

At his own company, however, Watson
With a large log firmly locked into position on this grapple, there is little chance it will drag on the ground and tear up your client’s lawn.

uses a farm tractor with a grapple, since he already has a loader on the truck that he puts the logs in. The farm tractor is the “most economical, easiest to operate.” Watson says. “It gets in tight places,” although he doesn’t hesitate to add he would recommend an articulated loader “if you’re cutting a lot of big stuff.” Watson has turf tires on the tractor, and “you can’t even tell we rode across (a client’s) yard. ...We don’t have to back the truck down into the yard anymore. Yard damage is minimal.”

In addition, Watson finds the grapple “saves on manpower. It keeps injuries down ... (and) having the powerful machines helps keep employee morale up. “(Workers) love it. If we don’t take the tractor to a work site, it’s not a happy day.”

Watson’s bottom line: The grapple/tractor combination is most economical if you are loading wood into a truck and already have a loader on the truck. “I’d recommend to someone that they demo a Swinger if they were going to buy a grapple. Demo a Swinger and demo a farm tractor.”

LEONARDO’S TREE SERVICE, Michigan

Name: Paul Wiley
Number of employees: 13
Loader: Kubota R420 loader
What he uses it for: Light clearing at residential/commercial sites

Wiley has had a grapple as part of his equipment inventory since June and he uses it nearly every day. “In certain jobs, it’ll cut two-thirds of our labor out.” In addition, Wiley says he just likes “the way it’s engineered. It’s productive. The winch features on this are real nice.”

His employees also approve: “It’s the first piece of machinery I ever bought that they take care of the way I’d like them to! They love it. ... It actually saves them a lot of work. It’s good for their ego.”

The Kubota that he uses has minimal impact on clients’ lawns, and the grapple/loader combination allows workers to carry large logs across the lawn, directly into the chipper. However, Wiley has also discovered one caveat with this system: “I’m buying bigger chippers!” Although he started with a 12-inch chipper, Wiley is now planning on buying a 20-inch version.

Wiley’s bottom line: If you buy a grapple to feed logs, make sure you have a big enough chipper - or have money set aside to purchase one.
RISK MANAGEMENT,
Georgia

Name: William Lombardo, president
Number of employees: 10
Loader: Kubota R420 articulated loader
What he uses it for: Clearance, especially brush

Lombardo is quick to point out that the ImpleMax being tested is "three times the cost" of other grapples and does not rule out the need for a brush grapple. "The No. 1 benefit of this grapple is that it helps you to feed your material in to your chipper, superior to a brush grapple."

Lombardo warns he has discovered from experience that if you use an ImpleMax grapple to pick up piles of brush, "you will be losing stuff as you go." When dealing with small brush and debris, he found "it was difficult to work with this grapple."

Lombardo emphasizes that all those who are considering buying a grapple for logs should also include a brush grapple into their equation. "When you're dealing with brush and other aspects of tree removal – brush piles, (or) any type of exit material – this is no replacement for the brush grapple."

He says it is worth the money – as long as you have a big enough chipper to handle a large volume of brush at once. "To get the full benefit, you need a bigger chipper."

Lombardo's bottom line: "Let the grapple do the work. Anything will carry brush. ... It's only a benefit if it replaces somebody."

As some reviews here indicate, a grapple can be a useful addition to a tree care company's line of equipment, though users add it is geared for companies with a lot of logs to carry directly to a chipper or truck. If you are a company that doesn't do many takedowns or removals, run the numbers to make sure the costs don't outweigh the benefits – especially if you won't be using a grapple regularly.

Ariana Elniakiss is assistant editor of TCI magazine.

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A Defect Isn’t a Death Sentence

Hazard tree detection and evaluation has been a fertile field for research in recent years. Technical advances in decay detection equipment and the spreading use of post-failure autopsies have advanced the ability of arborists in the field to make sound judgments on a tree’s risk of failure.

Evaluating Trees for Defect, a new book by Ed Hayes, is one of the fruits of that research. Hayes, a forest health specialist for the Minnesota Department of Natural Resources, has produced a handy 20-page guide to tree defects that puts the results of scholarship into an easily understood form.

Where to check for the weakest wall

Where the symptom is most pronounced.

Between root flares or within inclusions.

Behind the in rolling woundwood.
Far from a scholarly publication, this book is intended for use as a field guide by working arborists. No dense footnotes here, although there is a good list of resources for those who wish to delve deeper. Instead the guide features 38 easy-to-understand illustrations and 29 color photos that clearly show the most common forms of tree defects.

Hayes details two methods for evaluating stem and branch decay. The first, developed by Claus Mattheck and the folks at the Bartlett Tree Research Lab, walks the readers through the rules for increasing sound wood requirements for increased cavity openings, beginning at 20 percent. The second, also derived from Bartlett, factors in cavity openings beginning at 5 percent and ending at 30 percent.

The guide provides photos and diagrams on the major defects in trees that might pose a hazard: leaning trees and root problems; open cracks; weak branch unions; cankers; decayed wood and cavities; and broken, hanging or lodged branches. The photos offer stark examples, though most of the trees are in such bad shape the evaluation process in the field would not prove difficult. The caption under one particularly poor specimen with co-dominant leaders is short and clear: “Start over.” Of more value are the diagrams, which offer specific guidelines to help assessment in a variety of situations.

Hayes lays out in some detail how to find the average thickness of sound wood with a drill. He also highlights this sound advice from Bartlett for when the minimum thickness of sound wood isn’t enough. “Increase the sound wood requirements for trees with: leaning stems/branches; unbalanced crowns; low crown ratios; multiple defects; decay in stress points (mid-crown, bends in stems/branches, and reaction wood); asymmetrical decay column; species with weak or brittle characteristics; trees with decline; or on exposed, sensitive and high-use sites.”

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The cost of Evaluating Trees for Defect is $19.95. For more information, call 507-282-5739; Web site: www.safetrees.com; E-mail: ed.hayes@juno.com

Mark Garvin is editor of TCI magazine.

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Here’s a quiz. What would you do in these situations?

1. Joe, one of your most hard-working climbers, has been thrown in jail. Seems there was an out-of-state warrant charging him with domestic violence. Because Joe can’t make the $10,000 bail, it looks like he’ll be in the clinker for several weeks. His uncle calls and asks, “Joe’s got a lot of vacation time banked up. It’s okay, isn’t it, for him to use it up while he is in jail?”
   What do you do?
   a) Allow Joe to use up his vacation time.
   b) Terminate Joe for not being able to attend work.
   c) Other.

2. Agents from the FBI show up at your door to arrest Jane and Howard, a married couple who are two of your trusted employees. The agents claim that Jane, who works in your purchasing department, set up a fake temporary supply house from which Howard has been buying phantom supplies for years. Total bilked from your business? $300,000. In a matter-of-fact tone, the agents explain that the IRS discovered the fraud during your recent tax audit. The agents ask you to take them to the couple.
   What do you do?
   a) Terminate the couple after getting more information from the FBI.
   b) Suspend the couple, then conduct your own internal investigation and decide whether to fire the pair.
   c) Other.

3. You’re walking to your desk one bright Monday morning and, en route, happen to hear two of your employees talking about one of their co-workers. “Did you hear about Mike?” one asks the other in hushed tones. “He was arrested over the weekend for using a stolen credit card to buy a lot of stuff.”
   What do you do?
   a) Nothing. The arrest has nothing to do with Mike’s job.
   b) Call Mike in for an interview.
   c) Other.

The names of the people have been changed. But the stories are only too true.
Each occurred over the past year at businesses just like yours. How would you handle these employees? Fire them on the spot? Call them into your office to hear their side of things? Suspend them without pay? With pay? Ignore the whole issue and let the police handle everything?

Beware: Doing the wrong thing can be costly to your bottom line. You can easily get sued for anything from character defamation to wrongful retention of a dangerous worker, to wrongful discharge of an honest one. Finally, losing a capable worker to wrongful discharge can be costly in itself.

In this article, business attorneys who actually handled the above cases tell what they advised their clients to do. See if your solutions match theirs. These lawyers offer guidelines on what you can do to avoid costly — and all too common — mistakes when an employee is arrested.

Here are the vital points to remember: Let the punishment fit the crime. "When an employee is arrested, ask yourself a key question: "What is the impact on the individual's work?" " says Joseph P. Harkins, a partner at Washington, D.C.-based Littler Mendelson, the nation's largest employment law firm. Harkins spent six years as a New York City prosecutor before switching sides and defending businesses against lawsuits and other court actions. Suppose the worker is a clerk with no access to the company money or company vehicles, poses Harkins. There is not much impact on his work duties if he is arrested for a crime such as passing bad checks, engaging in a fist fight at the town bar, driving while intoxicated, shoplifting, or skipping child support payments. In these cases, the employer may decide not to fire the individual.

On the other hand, suppose someone in your accounting department is arrested for shoplifting or passing bad checks.

"You need to be concerned about these alleged crimes because they are work-related," says Harkins. You may decide that individuals in positions of trust are candidates for termination. The same goes for someone in a higher-level management position, or in the human relations or public relations departments. Even if the crime does not affect the individual's work, the arrest can affect the customers' image of your business.

"If your business reputation is at stake, you want to take some action — usually termination," says Harkins.

Investigate before you terminate

Now let's tackle the first case in the quiz that started this article, in which Joe asked to use up his paid vacation time while in jail. This scenario is based on a real event that was handled by Harkins in the state of Maryland.

"In this case, the knee-jerk reaction of management was to fire Joe right away," says Harkins. The management claimed, correctly, that they were within their rights for firing Joe, since he was unable to come to work, and workplace attendance was a job requirement. But Harkins pointed out that Joe's alleged crime did not directly impact his work, for which he had an excellent track record. "I advised them to just let Joe take his vacation time. And in this case, Joe was released from jail, returned to his job, and is now a productive worker again."

Most employers want to fire an arrested worker right away. Attorneys advise a safer course: suspend the individual and investigate thoroughly before taking any action. "You never terminate anyone on the spot, no matter how red-handed you may think they have been caught, or how serious the conduct might be," cautions Francis T. Coleman, a partner with Ford & Harrison, a Washington, D.C., employment law firm.

"The safest course is to get the person away from the premises. Then investigate the matter, double-checking all of your facts," says Coleman. "After that, you can get back to the individual about his or her future status at your business."

If you caught the individual in what looks like a criminal act on your business premises, your investigation may involve interviewing other workers and collecting relevant documents. If the employee has been arrested for a crime that occurred away from your business, your investigation may involve interviewing the police, the employee's attorney, the prosecutor, and witnesses.

"No one owns a witness and there is nothing wrong with going and finding out more information," says Harkins. "Maybe the police and prosecutors will not be wild about it, but they will not be sharing information with you either. I suggest you start by meeting with the prosecutor to see how much information you can get. Some prosecutors will see an opportunity to trade information and some will not."

Police and prosecutors will share more information with you if they feel you have information that will assist them. "The criminal justice system operates on a favor bank system," says Harkins.

Suspension — with or without pay?

Suppose you suspend the investigated employee: should it be with or without pay? There's a strong case for the former. Here's an example that will show why. Suppose your new bookkeeper is arrested when her previous employer files an embezzlement charge. Suspending the individual with pay can help your resulting investigation.

"If you are paying someone, you have them on the reservation," explains Harkins. "So if you think there might be some embezzlement happening at your company, you still have this person and can pick her brain, in conjunction with hiring the expertise of an outside auditor."

Finally, says Harkins, you must consider the possibility that the previous employer was wrong and there was a bookkeeping error rather than embezzlement. Whether to pay the suspended employee or not may depend on the results of the investigation. Says Coleman: "If the investigation confirms that the person was engaged in misconduct, then we may treat it as suspension without pay. On the other hand, if his story checks out, then fairness would demand that you pay this person for time off."

This looks like a good time to tackle the case of Jane and Howard, the couple who have been arrested for embezzling from your business. What was your suggested course of action? In the real-world Cali-
fornia event upon which our hypothetical case was based, the employer suspended the individuals and conducted a thorough investigation, including an audit. When the facts were found to be as the FBI alleged, the employer fired both workers. Let's hear from the attorney who advised the employer: Rita Risser, principal at Fair Measures Management Law Consulting Group, Santa Cruz, Calif.

"The employer did the right thing by conducting an internal investigation," she says. "The terminations were done not as a result of the arrests, but because the employer's probe resulted in a reasonable conclusion that the individuals committed the crime."

Some managers, notes Risser, might be tempted to fire the couple based only upon information provided by the FBI. Their rationale is that under the "employment at will" doctrine, workers can be fired for any reason or no reason. There are dangers in this policy, however. Individuals who have lost their jobs have nothing to lose by hiring an attorney on contingency and suing your business for wrongful discharge. If you have not conducted your own investigation, you have no information to defend your actions against charges of termination for reasons such as discrimination or invasion of privacy. You are particularly vulnerable if the law enforcement officials later drop charges against the couple, or the individuals are found innocent. Other employers are tempted to avoid doing an internal investigation in favor of letting the police handle everything. Their approach is to suspend the employee and fire him if he is convicted.

Attorney Risser has a problem with this approach: "People are often found not guilty in court when they have actually committed the act," she points out. "Particularly in the case of violent employees, you have a duty to protect your employees."

If you do not feel you have the capability to conduct an internal investigation, you may need to hire outside counsel or an investigative agency to do it for you, notes Risser. Act quickly in the event an employee is arrested for a violent crime such as aggravated assault with a deadly weapon, rape or murder.

"If you have notice that an employee is a risk, and a shooting occurs at your business, you could be liable for negligent retention," says Gary Howard Simpson, an employment lawyer in Bethesda, Md. In such cases you need to suspend the individual immediately and bar him from coming onto the premises until you hear the final results of the police investigation, and your own investigation is completed.

One final point: Coleman points out that the Equal Employment Opportunity Commission (EEOC) has developed...
guidelines on when you can use the fact of an arrest to terminate someone. Note that minorities tend to be arrested more often than others. As a result, using an arrest by itself as a termination consideration can be deemed discriminatory. But the EEOC recognizes that if the arrest has a direct relationship to the work the individual does, you are within your rights to terminate. Make sure you comply with the law. Protect the worker’s reputation. When you undertake an internal investigation, take care not to damage the suspect’s reputation among co-employees.

“You don’t want to jump the gun and make accusations,” stresses Coleman. Announce your investigation to the employee in words such as these: “We have evidence to believe that you may have violated company rules or engaged in misconduct. We want to investigate this matter and get to bottom of it. In the meantime, you are suspended pending the completion of our investigation.”

Watch out for possible defamation

Don’t risk a lawsuit for public defamation by broadcasting your investigation around the workplace. “In many employment lawsuits the plaintiff’s attorneys throw in defamation or slander if there is any indication that the investigation has been broadcast beyond the people who have a real need to know or who are personally involved,” says Coleman. “Try to keep that group as small as possible.”

When you interview co-workers, take pains to avoid accusing the suspect of anything. Coleman suggests an approach such as this: “We have information that may indicate that Joe Jones violated a company rule. We do not know this as a fact and we are investigating so that we can make a determination. We hasten to add that we are not accusing anyone at all at this point. What facts were brought to your attention?”

An even better approach, says Coleman, would be to avoid saying that any one person is under investigation for any particular crime. Instead, just note that you are undertaking an internal investigation about an undisclosed matter, and you have some questions. You might specify an incident and ask if the person knows anything about it. “Give just enough information so you can identify the circumstances you are zeroing in on,” says Coleman.

With this guidance under our belt, let’s consider the third and final part of our opening quiz. In this scenario, you overhear two workers sharing information about a supposed arrest of Mike for buying goods with a stolen credit card. What should you do?

We posed this question to Marc Ragovin, a partner in the employment group at New York City-based Gibney,
Anthony & Flaherty. "The smart thing is to nip such conversations in the bud, because they will lead to speculation and rumor," he says. "All sorts of things will be said that are not accurate."

An employer who does not take steps to subdue rampant speculation may be charged with defamation by the employee. Ragovin suggests calling each worker into your office. Ask each what has been heard. Then say something like this: "We appreciate your cooperation and we are looking into the matter. There's no need for you to discuss this with others and we would appreciate it if you would not bring this up in conversation with your co-workers. If people have questions they can come to us."

You might add, "If you were in this situation you wouldn't want people speculating. So you should respect that." This is a nice way of telling people it's none of their business, notes Ragovin.

Handling Arrests for Violent Crimes

There is an important exception to the privacy rule – and that is when the employee has been arrested for a violent crime. If you have reason to believe the person might come back into the workplace, you are legally required to protect your employees. While there is no reason to announce this with others and we would appreciate it if you would not bring this up in conversation with your co-workers. If people have questions they can come to us."

You might add, "If you were in this situation you wouldn't want people speculating. So you should respect that." This is a nice way of telling people it's none of their business, notes Ragovin.

When the police come knocking

When law enforcement officials arrive to arrest an employee, cooperate. But don't take actions that can render you an agent of the police and risk lawsuits for false arrest or defamation.

"Try to have the arrest handled as non-publicly as possible," says Gary Howard Simpson, an employment lawyer in Bethesda, Md. One approach is to ask the police officers if they will sit in a conference room or private office so that the arrest can be made there, out of sight of co-workers. Then ask the suspect to report to that room, perhaps to fill out some papers.

"Don't have company personnel walk the individual to the room, because this makes it look like the company is participating in the arrest," cautions Simpson. "You don't want to make a non-verbal representation that the company is behind this arrest."

Ask the police to refrain from handcuffing the employee at his work area and parading him through the office. If the employee is later found innocent, you may be accused of defamation of character.
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HELP WANTED

Tree Care Assistant Manager
Experienced Tree Care Manager needed to fill Assistant Manager position in a growing full-service tree care company in the Detroit metropolitan area. A strong background in arboriculture: managerial experience and good communication skills a must. Must have a vision and a drive to achieve set goals. Duties to include: Managing fleet and equipment, scheduling crews (tree and landscaping), development and implementation of safety and training programs, recruitment and hiring, supervision of foremen, as well as goal-setting, budgeting and planning. Compensation: Salary $45,000 - $55,000, health and dental insurance, 401(k), paid holidays, paid time off and performance incentives. Fax resume and references to Mike’s Tree Surgeons, Inc. attn.: Mike at (248) 588-4824 or email to: employment@mikestreet.com.

Plant Healthcare Coordinator
Metropolitan D.C. firm, seeking an Integrated Pest Mgmt./Plant Healthcare Coordinator to assist with IPM/PHC Programs. Management Potential – must have strength in plant & insect I.D., time management skills & pesticide control knowledge exp. Benefits incl. health/life insurance, paid vacations/personal days. Profit sharing, matching 401(k), employee stock ownership. Compensation based on exp. Please contact The Care of Trees (301) 948-5885.

SIMPLY THE BEST
Joining the sales team at The F. A. Bartlett Tree Expert Company guarantees you unlimited growth potential, the use of cutting-edge technology and membership in one of the most prestigious firms in arboriculture.

At Bartlett, we’re not just utilizing the latest scientific advances in tree care we’re pioneering them. Our sales representatives stand head and shoulders above the competition because they’re backed by a team of scientists at the Bartlett Tree Research Laboratories. This gives both you and your customers an advantage you can’t get with just any other tree company.

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Family-owned since 1907, Bartlett is experiencing rapid growth and expansion. We’re looking for the best and the brightest. Currently we are searching for individuals with a strong desire to succeed as arborist sales representatives in these regions: Northeast, Metro-New York, Mid-Atlantic, Southeast, Midwest, Texas and California.

We offer 401K, medical and dental benefits, flexible spending accounts and one of the most lucrative compensation packages in the industry. Don’t miss this opportunity to become part of the Company that sets the standard for an industry.

Tree Care Assistant Manager
Experienced Tree Care Manager needed to fill Assistant Manager position in a growing full-service tree care company in the Detroit metropolitan area. A strong background in arboriculture: managerial experience and good communication skills a must. Must have a vision and a drive to achieve set goals. Duties to include: Managing fleet and equipment, scheduling crews (tree and landscaping), development and implementation of safety and training programs, recruitment and hiring, supervision of foremen, as well as goal-setting, budgeting and planning. Compensation: Salary $45,000 - $55,000, health and dental insurance, 401(k), paid holidays, paid time off and performance incentives. Fax resume and references to Mike’s Tree Surgeons, Inc. attn.: Mike at (248) 588-4824 or email to: employment@mikestreet.com.

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Full Time Tree Climber Wanted
Must have: Min. 5 yrs. experience, CDL, working knowledge of ANSI Standards, Pruning, Aerial lift & Crane experience, professional attitude, excellent leadership & customer skills. Willingness to learn & teach. Top pay & benefits.
Please Send Resume to:
Matthew Costich
Lincoln Tree & Landscape
764 Main St.
Action, MA 01720

Tree Arborist/Working General Foreman
On Earth Plant Care Specialists, Inc., New York, Westchester County. Looking for an Experienced Certified Climbing Arborist with CDL/air. Great opportunity for family person who is “down to earth.” Benefits, excellent pay – bonus money – re-locating allowance. Growing company with great clients. Please mail, fax or e-mail your resume with salary inquiries to:
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Putnam Valley, NY 10579
Phone/Fax (845) 526-8186
saknapp@bestweb.net

Employment - Employment Employment

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Tree Climbers
Metropolitan D.C. firm seeking exp. tree climbers & Crew Leaders. Valid driver’s license is req. Exc. benefits incl. health/life insurance, paid vacations/personal days. Profit sharing, matching 401(k), employee stock ownership. Compensation based on exp. Please contact The Care of Trees (301) 948-5885.

Full Time Tree Climber Wanted
Must have: Min. 5 yrs. experience, CDL, working knowledge of ANSI Standards, Pruning, Aerial lift & Crane experience, professional attitude, excellent leadership & customer skills. Willingness to learn & teach. Top pay & benefits.
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We will compensate the successful candidate with a guaranteed salary for a 6-to-12-month comprehensive sales and field training period, thereafter a weekly draw against commissions.

Benefits include a monthly auto allowance following training, pension and 401(k) plan, vacation, and choice of medical plans.

Please send, fax or e-mail your resume. For further information, please contact:

Jeanne Houser, General Manager
McFARLAND LANDSCAPE SERVICES, INC.
255 West Tulpehocken Street
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PHONE: (215) 438-3970
FAX: (215) 438-1879
E-MAIL: mcfarland@onramp.com

HAWAII - Tree Climbers and Working Foremen. Climbers MUST have a minimum of 5 years climbing experience (which includes pruning, shaping, rigging, take downs and removals) and a current driver’s license (a CDL license is preferred). Foreman applicants MUST be a certified arborist (with knowledge of disease diagnosis and fertilization), have a minimum of 5 years climbing experience (which includes pruning, shaping, rigging, take downs and removals), 5 years utility line clearance experience, experience working with cranes and have a current driver’s license (a CDL license is preferred). Pay starts at $18.00 per hour but is based on experience. Benefits include paid medical and dental insurance, paid federal holidays, vacation pay, 401(k) pension plan and a profit-sharing plan. Send resume with salary history and employment references to:

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Experienced Tree Care Specialists - Chicago North Shore. Full-service tree care and landscape firm serving exclusive, residential clients has various positions in management & production. Superior compensation & benefits package. Contact Robert Kinnucan at: 28877 Nagel Court, Lake Bluff, IL 60044. Tel: (847) 234-5327; Fax: (847) 234-3260.

Trim Department manager. We're looking for an organized, self-motivated individual with excellent people skills to help achieve our vision of quality tree care. Our 29-year-old company has knowledgeable people and modern equipment. We live in Boulder, Colorado, an environmentally conscious community that is a great place to live. Call Boulder Tree & Landscape Co. at (303) 449-2525 or fax (303) 413-1042.

Plant Health Care Climbing Arborist Sales

Boston-area company of professional arborists has sales, leadership and crew positions available for outstanding indiv(s) w/ min. 2 years exp. Candidates must be committed to highest industry stds. of safety, workmanship & cust. service. Exc. wage & benefit package, including pension (401(k)), medical, education & more. Send resume to: Lueders, PO Box 920279, Needham, MA 02492 or call (508) 359-9905 or e-mail LuedersCo@AOL.com

Climber/Crew Leader Growing company in West Central Ohio with 20 yrs. of experience in nursery and tree care seeks responsible person to supervise and operate a tree crew and necessary equipment. Must be reliable, motivated self-starter who is quality-oriented. Excellent compensation, medical and matching 401(k) program. Please contact General Tree Service, 7199 Havemann Road, Celina, OH 45822, (419) 586-6664 or fax resume to (419) 586-3361.

Experienced Climber - Foreman Leading Tree Service in Western N.Y. since 1970 looking for motivated climber/foreman. CDL preferred but not required. Year-round work, excellent benefits, top pay. Opportunities leading to sales/management position. Call (716) 655-3359 or fax resume to (716) 655-3874. Haskell Tree Service Inc, PO Box 299, West Falls, NY 14170 or visit our Web site at WWW.HASKELITREE.COM

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...continued on page 67
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Plant Health Care Technician
Join the most prestigious firm in arboriculture. National leader in tree care seeks motivated individual interested in stable career opportunity. We require top-notch professional to implement plant health care/IPM programs on landscape plantings in North Florida. Knowledge of ornamental plant and pest identification required.
Must be Florida Certified applicator in turf and ornamental categories. Competitive salary, medical/dental benefits, 401(k) w/ company match, continuing education and potential career growth into sales & management. Please fax resume and cover letter to (770) 414-9762.

EXCITING CAREER OPPORTUNITIES FOR SERVICE INDUSTRY MANAGERS
Come Join One of the Largest Vegetation Management Companies in the United States DeAngelo Brothers, Inc. is experiencing tremendous growth throughout the country, creating the following openings:

General Managers Division Managers Branch Managers

We have immediate openings in:
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Responsible for managing day-to-day operations, including the supervision of field personnel. Business/Horticultural degree desired with a min. 2 years experience working in the green industry. Qualified applicants must have proven leadership abilities, strong customer relations and interpersonal skills. We offer excellent salary, bonus, and benefits packages, including 401(k) and company paid medical coverage.

For career opportunity and confidential consideration, send or fax resume, including geographic preferences and willingness to relocate, to: DeAngelo Brothers, Inc., Attention: Paul D. DeAngelo, 100 N. Conahan Drive, Hazleton, PA 18201. Fax: (570) 459-2690. EOE / AAP M-F.

Alaska
Busy tree service needs a good climbing foreman. Must have minimum 2-3 yrs. experience in residential pruning and removal, valid driver's license, and not be afraid to do clean up. Excellent wages and benefits for the right person. Entry-level positions also available. Send resume to: Gage Tree Service, 13101 Foster Road. Anchorage, AK 99516 or call (907) 345-9699.

Interested in relocating to beautiful Denver, Colorado? Mountain High Tree Service and Lawn Care, an industry leader since 1974, is hiring Tree Climbers, Plant Health Care and Lawn Technicians. We offer top pay, unmatched benefits and a modern facility with new equipment. Call our office: (303) 232-0666 or fax your resume to: (303) 232-0711 or e-mail us: mhttree@pcisys.net. Please send to attn.: David Entwistle. Check out our Web site: www.mountainhightreeservice.com

Tree Crew/Spray Technician
Experienced tree climbers and spray technicians needed. We have cake! Call Dan at Autumn Tree Care Experts (847) 729-1963 or fax resumes to (847) 729-1966.

Fairfield County, CT – 20+ years established company seeks Plant Health Care (IPM) Technician. We are looking for a professional, take-charge person to manage our IPM program. CDL and pesticide license preferred but not req. We offer exc. salary, commission opportunities, training & benefit packages (health, dental, pension, tuition reimbursement), pd. vacation & holidays. Call O'Neill’s Tree Care: (203) 655-7865. Fax resume: (203) 327-5455 E-mail: otc2oneillstree@aol.com

Exciting Career Opportunity for Tree Trimming Personnel
DeAngelo Brothers, Inc., is a vegetation management company with five (5) regional U.S. offices servicing railroads, utilities, industries and state departments of transportation for the last twenty years. There is an immediate need for the following positions:

Climbers-Class I and II Foreman and Bucket Operators Tractor Operators

CDL License, experience in arboriculture, urban forestry or related fields a plus. We offer excellent starting wages, company benefits, excellent working conditions and the opportunity for year-round work. For a confidential interview, mail or fax your resume to: DeAngelo Brothers, Inc., 100 N. Conahan Dr., Hazleton, PA 18201. Attn: Charlie Sizer. Phone: (800) 360-9333; Fax: (570) 459-0321.

EOE / AAP / M-F

...continued on page 68

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Career team players. Work year-round. Relocation assistance, excellent compensation, retirement & benefits package. Fax, E-mail or send resume to:

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Phone: 404-299-5555
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Climbers Wanted: Min. of 3 years experience in all aspects of aerial tree care. Must have or be willing to obtain Class A CDL and ISA certification. We offer top wages, benefits and continuing education. Please call (770) 992-1973 or fax resume to (770) 518-9527 (Atlanta, Ga.).

Climber Foreman

Manager of Urban Forestry
Department of Parks, Recreation and Properties

Primary Responsibilities
• Under the general supervision of the Commissioner of Park Maintenance and Properties, performs complex professional and administrative work overseeing the urban forestry section.
• Supervises all urban forestry personnel.
• Formulates, establishes and implements operating policies and procedures.
• Responds to citizen inquires, work orders and complaints; dispatch information recommending action.
• Prepares operating and capital budgets for the urban forestry section.
• Prepares and implements a master street tree planting program and systematic street tree trimming program.
• Enforces compliance of all rules, regulations and policies in the care and protection of owned trees.
• Perform related tasks as required.

Qualifications
• Bachelor's degree in urban forestry, forestry, arboriculture or related field.
• Minimum of three years supervisory experience in the urban forestry field.
• Must possess a valid State of Ohio operator's license.
• Arborist certification through the International Society of Arboriculture.

Forward resumes with cover letter to: Richard L. Silva, Commissioner Division of Park Maintenance & Properties, 1230 East 6th Street, 4th Floor Cleveland, OH 44114. Fax: (216) 664-4087. City of Cleveland residence required within six months of employment. Equal Opportunity Employer.

Tree Care Professionals Needed!
Large Chicago metro area firm needs experienced tree care personnel to immediately fill the following year-round openings: Production & Crew Foremen; Sales; Climbing Positions; Office Management.

Homer Tree Care, Inc. offers wages above industry standards with benefits including Health, Dental, Disability, Life, Paid Holidays, Paid Vacation and Profit Sharing. The overwhelming demand for our services proves that our name is synonymous with the tree care industry. Please submit resume with cover letter to Homer Tree Care, Inc., 1400 S. Archer Avenue, Lockport, Illinois 60441, or call Rich or Steve at (815) 838-0320 /Fax (815) 838-0375.
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call: (603) 314-5386
Ask for Dawn Stone

e-mail: stone1anatlarb.com
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1991 Top Kick, gas, 5 speed, Ready to work.
$13,900

Overcenter, Forestry Bucket Trucks, 55' w.h. Altec LB-650's, diesel, Fords. 1988 • 31,500, 1993 • 42,500

Overcenter, Rear mounted, flatbed, 56' w.h. Lift-All, diesel, Int'l, 1986 (Under CDL) $29,500

55' w.h. Asplundh LR-50, 1989 F-700, gas, 5 speed. $28,500

Overcenter Altec bucket, 56' w.h. 1986 Int'l, diesel, auto $23,500

40' w.h. TECO, 1992 Ford, diesel, auto $15,500

1991 Top Kick, Gas, Auto, with 55' Asplundh LR-3, New cables, new paint, new tires $44,500

'86-'90 Rear-mtd, flatbeds, 52' - 56' w.h., both standard and over centers. Units $18,500-$23,500

57' w.h. Hi-Ranger, 1986 Ford, Forestry Unit, Diesel $25,500

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Join the tri-state's most prestigious and oldest tree and shrub care company. Be part of a team of nationally recognized leaders in arboriculture. We have immediate openings at two of our branch locations. Candidate must have a minimum of 3-5 years exp. in residential tree care, duties will include but are not limited to managing the day-to-day operations of all field personnel, supervision of training and safety programs, routing of plant health care crews, ordering supplies and equipment. This individual must possess strong leadership and communication skills. ISA certified and able to speak Spanish a plus. We offer an excellent compensation and benefits package, including medical, company vehicle, retirement fund, paid holidays, vacation and continuing education. If you are looking for a goal-oriented company with unlimited growth potential, look no further.

Attn: Kevin J. Rooney
Regional Manager
Almstead Tree and Shrub Care Company
Fax (914) 576-5448
Office (914) 576-0193
E-Mail atc@bestweb.net
On the web www.almstead.com

... continued on page 70
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All types and brands of professional climbing and lowering arborist ropes at warehouse prices. Call for current price list. Free shipping. Visa, MC, AmEx. Small Ad - Big Savings 1 800-673-3203.

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Chip Truck - 28 cubic yard, 16 feet long, all aluminum body and toolboxes, custom made with manual slide convertible top, ideal for multiple uses. Mounted on 1992 International 4900 with DT466, automatic transmission, custom interior, aluminum wheels, 33,000 GVW, 55,000 miles. Asking $42,500 or best offer. Call Keene Tree Service at (603) 352-8330.

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... continued on page 72
The Natural Selection when you're up against hostile environments, unexpected hazards and you need constant readiness. Under these conditions, only the strong survive. Track down a RACINE product. You'll discover a prevailing species of efficient, heavy-duty, low-pressure hydraulic tooling and evolutionary designs specifically for the job at hand.

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1993 40 GPM Minnesota Wanner Hyd. Sprayer. Three hose reels, 200 and 400 gallon stainless steel tanks. $4,000. Call Jim at (612) 473-0534.

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(6) Mdl 250, Cummins 100hp, Ford 87hp, Ford 6 cylinder; John Deere 110 & 125hp;
(3) Mdl 280, Cummins 200hp, John Deere 110hp; (4) Mdl 1890, John Deere 125hp, Cummins 200hp;

Bandit Whole Tree Chippers
(1) Mdl 1250, Cummins 174hp; (3) Mdl 1254, Cummins 200hp; Mdl 1400 towable, Cummins 200hp; (2) Mdl 1400 self propelled, Cummins 200hp; Mdl 1700, John Deere 375hp; Mdl 1850 self propelled, Cummins 250hp; (2) Mdl 1900 self propelled, CAT 425hp, Cummins 475hp.

Bandit Horizontal
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(1) Mdl 3680 Beast Recycler, Cummins 350hp.

Morbark
(1) Mdl 10, Cummins 250hp; (1) Mdl 16, Cummins 250hp; (1) Mdl 17, Turbo Perkins 102hp; (1) Mdl 100, Onan 24hp; (4) Eeger Beevers, Ford 4 cylinder and 2.3L, Wisconsin 65hp, Cummins 76 and 194hp; (1) Super Beever, Cummins 194hp; (1) Mdl EZ 10, John Deere 50hp; (1) 30/36 W/ loader, John Deere 325hp; (1) Mdl 18 Chip Harvester, Cummins 400hp.

Vermeer
(1) Mdl 1600 drum, Ford 6 cylinder;

Miscellaneous
(5) Chipmore 12-inch drum, Ford 4 and 6 cylinder, Hercules gas; (11) Olathe, Ford 4 cylinder, Cummins 176hp; (5) Asplundh 12-inch drum, Ford 6 cylinder, Perkins 80hp, G1600 gas, Ford V8; (1) Asplundh 16-inch drum, Ford V8; (1) Asplundh Whisper, 4 cylinder; (1) Fecon Willibald; (2) Woodchuck 17, GMC 120hp; (1) Woodchuck Hy Roller 17; (1) Mitts & Merrill drum, 6 cylinder; (1) Trelan M-18, Deutz 250hp; (1) Innovator 8' tub, Cummins 177hp; (1) Jenz Wastewood grinder, John Deere 6 cylinder; (1) Haybuster 10' Big Bite tub, CAT 300hp; (1) Bio Grind, Cummins 174hp.

Stump Grinders
(1) Vermeer

Vermeer
Mdl 1600 drum, Ford 6 cylinder;

Miscellaneous
(5) Chipmore 12-inch drum, Ford 4 and 6 cylinder, Hercules gas; (11) Olathe, Ford 4 cylinder, Cummins 176hp; (5) Asplundh 12-inch drum, Ford 6 cylinder, Perkins 80hp, G1600 gas, Ford V8; (1) Asplundh 16-inch drum, Ford V8; (1) Asplundh Whisper, 4 cylinder; (1) Fecon Willibald; (2) Woodchuck 17, GMC 120hp; (1) Woodchuck Hy Roller 17; (1) Mitts & Merrill drum, 6 cylinder; (1) Trelan M-18, Deutz 250hp; (1) Innovator 8' tub, Cummins 177hp; (1) Jenz Wastewood grinder, John Deere 6 cylinder; (1) Haybuster 10' Big Bite tub, CAT 300hp; (1) Bio Grind, Cummins 174hp.

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Stump Grinders
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Vermeer
Mdl 1600 drum, Ford 6 cylinder;


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... continued on page 74
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Tree Care Crossword

ACROSS
1. — Care Industry (trade mag.)
5. final resting place (abbr.)
8. spotter's command to driver
12. log-hauling truck
13. Paul Bunyan's tool
14. gymnosperm
15. "I've got —" (I'm sick)
16. Catholic religious training (abbr.)
17. type of maple
18. Rhus radicans result
19. Spanish aunt
20. undergrad degrees (abbr.)
21. climber's hitch
25. — kazam!
28. ending for prom or treat
29. courage
32. certain understory plants
34. safari vehicles
35. early computer language
36. mouse in *Stuart Little*, to friends
38. spring/fall clock change (abbr.)
39. most common knot
42. loan statistic (abbr.)
44. Canadian ag. grp. (abbr.)
45. killer whale
49. wind up a rope

DOWN
1. Russian ruler, formerly
2. — Maclntyre of country music
3. large, flightless birds
4. figure — knot
5. saguaro
6. stir up
7. Olympic prize
8. health resort
9. wooded
10. obligation
11. hiring office (abbr.)
22. type of seat on a plane
23. native American (slang)
24. born (maiden name designation)
25. part of the NFL
26. Zodiac sign
27. tree doctor
30. Gore and Quayle (abbr.)
31. founded (abbr.)
33. fall month (abbr.)
36. climb a tree trunk without gear
37. block and — (pulley)
40. prune off low limbs
41. type of hawthorn
42. boxelder genus
43. game played on horseback
46. country music star Collin
47. tree gang
48. carpenter —
50. shelter

Answers in April 2001 TCI

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A tragic case of bad timing

The city of Los Angeles finds itself out $7.6 million after a palm tree that was targeted for pruning fell and paralyzed a pedestrian. The incident occurred in April 1999 in calm weather.

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According to The Associated Press, city attorneys recommending paying the settlement rather than facing a trial. That decision apparently came in part because the victim, 33-year-old Tony Scott, had recently moved to Los Angeles to pursue his dream of becoming a professional dancer — a fact that would make a jury more likely to sympathize with him.

But the city faced a timing issue as well. The 60-foot palm, which the lawsuit claimed had been dead for four years, was on a list of about 50 trees that were due for pruning or other work during 1999.

Elm an “emotional” loss

In Portland, Maine, city arborist Jeff Tarling has been forced to remove many of the city’s once-stately elms as they succumb to Dutch elm disease.

But he kept a close eye on one particular tree in the most populated Maine community, known as Forest City. Tarling made regular visits to a 100-foot elm, the largest in the city, on Danforth Street, checking it continually for signs of disease.

“It’s been my favorite ever since I came to Portland,” Tarling told the Portland Press-Herald. He said the tree reminded him “of what Portland used to look like.”

Dutch elm disease has claimed all but a handful of the 20,000 elms that once lined Portland’s streets. After spending several months treating it with fungicide injections, Tarling was forced to call for the removal of the tree for safety reasons and to help prevent the disease from being spread further.

And Tarling wasn’t the only person who noticed the specimen Elm. A nearby club called itself The Tree Café and a local business owner said a group held regular candlelight ceremonies at the base of the big tree.

The arborist said he was hoping to find a way to memorialize the tree, possibly by carving something out of its massive stump.

Tree vandals, unite

Nationwide, crime is down, but for some reason, it seems the number of attacks on trees is going in the other direction. A Los Angeles, Calif., TV station reported that a $5,000 reward was posted to help police find out who cut down 32 trees planted in median strips in the San Fernando Valley area.

Meanwhile, a few hundred miles north, a redwood that gained fame when environmental activist Julia Butterfly Hill spent two years living in its branches as a way of saving it from loggers was also girdled with a chain saw.

According to a report from Reuters, arborists have been called in to find ways to shore up the 200-foot tall tree against potential damage from windstorms. The tree is expected to survive the girdle cut, which runs 32 inches deep and runs halfway around the 38-foot base of the tree, the experts say. Plans called for steel shims to be placed into the cut and for braces to be bolted to the base of tree.

Hill’s high-profile tree-sit resulted in the tree and a buffer zone being preserved.

And still farther North, in Tillamook Ore., APB News carried the story of what was once believed to be the world’s tallest sugar pine suffering the same type of girdling damage at the hands of vandals. A $500 reward has been posted in that case, which occurred in the Umpqua National Forest.

Collecting the tools of the trade

There’s no formal museum in place just yet, but The Associated Press has tracked down several people who have chain saw collections worthy of their own tourist attraction.

The story says that one collector, Robert Ouellette of East Longmeadow, Mass., began collecting the saws during the oil crisis of the 1970s.

Customers spurred on by the desire to heat with firewood they cut themselves resurrected long-forgotten chain saws from garages, barns and basements.

Ouellette said customers of his now-closed chain saw shop brought in “some screwy things — old monsters that I’d never seen.” His collection includes chain saws dating to the 1940s, including one that cuts only vertically. The accompanying directions advise using an ax to fell trees.

Ouellette has tried without success to sell his collection to some museums and is considering starting his own.
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TREE CARE INDUSTRY - MARCH 2001
Chainsaw Truly Deserves Respect!

By Bill Tupper Jr.

It was an unseasonably warm 80-degree day in the end of October. After a regular workweek, a short day with approximately three to four hours of labor, with two men, was appealing.

Contemplating the particular take-down before us, it seemed a piece of cake. The large catalpa tree with at dbh of about 25 inches, located to the right rear of the property, allowed ample work area to free-fall the entire head piecemeal, then chunk off the firewood, which the client had requested.

This left a butt-log standing at about 20 feet, just below the flare created from past regular pollarding. The butt-log was left standing, allowing a future clothesline attachment.

With all brush on the ground – cut and consolidated by my groundman, at the request of the client to clean it up himself – I repelled, unclipped, and proceeded to cut the remaining limbwood and larger firewood. Anxious for completion, the last few cuts were to dice up the flared piece.

Rushing – I need say no more.

The tip of the bar came in contact with one of the pollarded stubs, kicked back 180 degrees, and came in contact with the back of my left hand and right forearm, causing serious injury.

The saw itself ended up leaving my hands over my right shoulder, landing on the ground about 6 feet behind to my right – still running. Probably faster than I could have described in words.

Sore and disappointed with myself days later, when I stop and think about what happened, I can count at least three things that I created in this scenario.

I was:
• overanxious for job completion.
• distracted, not totally concentrating on the task at hand.
• Operating the chain saw improperly, not having my left thumb wrapped around the top handle. This, alone, could have brought a different outcome.

Accidents don’t just happen – they should be prevented!

Bill Tupper Jr. is owner of Tups’ Tree & Landscape in Framingham, Mass. TCI
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