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Have you thought lately about whether or not your business is successful? You could define that as having grown a certain percentage each year, having added “x” number of bucket trucks and crews, having hired that manager so you can strategically work on your business, having built a new building, having been honored at your local Better Business Bureau or Chamber of Commerce as a “Business Owner of the Year,” being listed in a certain category of “Top 100 businesses” in your town or state, and so on.

I stop and think about other business measures in corporate America, such as the stock market, listings of top CEOs, companies that are environmentally friendly, companies that choose to buy and make American, companies that are rated as the best to work for by employees or unions, the Good Housekeeping Seal of Approval or Consumer Reports top rankings on company products.

I think about the restaurant owner in town who runs a local, homey place and contributes leftover food to the food kitchen every day. I think about the companies that sponsor Little League or girls’ soccer teams in their towns. I’m mindful of the businesses that sponsor parts of the highway to keep them clean. Then, there are those whose employees decide to be part of a community volunteer effort every year.

We tend to set our decisions about success on things such as whether or not we bought that new business vehicle, are part of a certain country club, rank a certain place in the community’s profitability, have a certain number of employees, or get recognized for making money.

There’s nothing wrong with making money. However, the sense of satisfaction in life never comes from whether or not you’ve got “x” dollars in your pocket. Face it, if you measure your self worth or your business success by that, somebody somewhere in the world always has more.

You might want to add to your list of business benchmarks things such as, “At the end of 2004, I want my business to have:

Made a contribution to the local community in some way;
Not negatively impacted the people in my community – locally or globally;
Not negatively impacted the environment – locally or globally;
Taken responsibility for something important for my industry;
Contributed to my industry’s association (community) in some positive way;
Behaved responsibly in earning our profitability;
Put the people we serve, and the employees who serve them, first.”

J.W. Bill Marriott Jr. says, “Success is never final.” I would hope not, as there is always more we can do for our communities and the people we serve.

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Outperforms the Competition.

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Healthy Soil - Healthy Trees

By Dr. Lakshmi Sridharan

Soil supports and sustains tree life. A tree anchored to earth by its roots seeks water and nutrients in the soil and absorbs the needed nutrients in a soluble form. A fertile soil, rich in organic matter, mineral elements and adequate moisture held in balance with good aeration and drainage supplies the essential nutrients required for healthy tree growth. However, such an ideal soil exists almost nowhere. An experienced or well-informed arborist can improve imperfect soil by changing its physical, chemical and biological composition with the addition of soil amendments.

Soil types and properties

The nature of a soil differs from place to place, and in some cases, even within the same backyard. Physical, chemical and biological compositions of a soil determine availability of oxygen, water or nutrients to the root, and absorption of these by the roots. Soil particles of varying sizes make up a soil. A coarse sandy soil with large soil particles (200-2,000 micrometer) has low water retention and nutrient supply because of leaching and hence is not good for healthy plant growth. A clay soil has smaller soil particles (less than 2 micrometer in diameter) and a higher retention of water and nutrients, but poor oxygen supply. Nutrients in a clay soil may not be available for root absorption because of the tight binding of mineral elements to clay particles. A loamy soil that contains the right proportions of sand, clay and silt is ideal for plant growth. Regardless of location and natural composition, three important physical properties of all soil types – porosity, retentivity and capillarity – affect plant growth.

Spaces enclosed between soil particles – the pores – determine soil porosity. A sandy soil with loosely held, large particles has bigger pores and less surface area for water adhesion than a clay soil with smaller pores. The larger pores in a sandy soil allow water to drain quickly, lowering soil retentivity – the critical ability to retain the needed moisture and nutrients for tree use. Lastly, plants rely on capillary force to carry water upward through the soil. The pores between the soil particles form capillary tubes for an upward movement of water. As the pore size increases, it reduces capillary action, because larger capillary tubes have less surface tension. A sandy soil, because of the larger pore size, has less capillary force than a clay soil. This is the reason why a sandy soil quickly loses water and has less water available to plants through capillary force. A loamy soil rich in humus has the ideal porosity, capillarity and retentivity. In addition, a loamy soil has the right environment (adequate amounts of moisture, nutrients and oxygen) for supporting microorganisms that recycle mineral elements such as nitrogen, phosphorus, iron and sulfur and convert mineral elements for root absorption.

Macro- and micro-nutrients

The chemical composition of a soil consists of organic and inorganic compounds present in it. Out of the 92 elements present on earth’s crust, only 16 mineral elements (inorganic nutrients) are absolutely essential for tree growth. The essential inorganic nutrients are: carbon (C), hydrogen (H), oxygen (O), nitrogen (N), phosphorus (P), sulfur (S), potassium (K), calcium (Ca), magnesium (Mg), iron (Fe), manganese (Mn), molybdenum (Mo), boron (B), zinc (Zn), copper (Cu), and chlorine (Cl). These elements are...
deemed essential because of their direct involvement in plant metabolism and their role in completion of plant life cycle— to germinate, grow and reproduce (flower and set seed).

Carbon and oxygen together contribute to approximately 90 percent of the dry weight of a plant. Hydrogen, nitrogen, potassium, calcium, magnesium, phosphorus and sulfur that make up nearly 8 percent of the dry weight of a plant are the macronutrients. The rest of the elements—Cl, Fe, Mn, Mo, B, Zn and Cu— that contribute to less than 0.1 percent of the total dry weight of a plant, are the micronutrients or trace elements. Except for carbon and oxygen, all the other nutrients are available in the soil solution for root absorption.

Carbon, hydrogen and oxygen are essential for the syntheses of all organic compounds (carbohydrates, lipids, proteins, nucleic acids, etc.) that are structural or functional components of a plant. Nitrogen is a component of protein, amino acids, nucleic acids, etc. Phosphorus is an important constituent of nucleic acids, phospholipids and energy-rich compounds essential for syntheses of organic compounds and break down of food material during respiration. Calcium is an integral part of a plant cell wall. Positively charged cations, such as K, Cu, Fe, Mg, Mn and Zn, are components for a number of enzymes, hence essential for enzyme activity. Enzymes have key roles in synthesis of food materials, and in generation of energy needed to perform all physiological activities that support plant life.

Factors affecting nutrient availability

The macronutrients as well as the micronutrients must be available in sufficient quantities for healthy growth of trees, yet some may be often lacking or—equally undesirable—excessive in a landscape soil. Non-availability of nutrients for root uptake may be due to a number of factors, such as soil type, soil pH, seasonal variations, leaching of nutrients, oxygen depletion, etc. Too much sodium from sea spray, road salts or excessive soluble salts from low-quality irrigation water create a saline soil. Potassium is low in a sandy soil but fairly high in a clay soil. Most soils in the United States are low in phosphorus. Heavy rainfall leads to leaching of nutrient ions. The negatively charged anions (NO3, SO4, HCO3 and Cl) leach more easily, as they do not attach to the negatively charged soil particles. The cations, Ca and K bind tightly to the negatively charged clay particles, hence do not readily leach out from a clay alkaline soil. Calcium binds more tightly to clay than potassium, as it carries more positive charge than potassium. Iron leaches from the soil during heavy rainfalls.

**Soil pH**

Alkalinity or acidity of soil also regulates availability of nutrients for root systems. The pH values range from zero to 14. The lower the pH value, the greater is the hydrogen ion concentration. A solution at pH 7 is neutral, while at pH below 7 it is acidic, and at pH above 7 it is alkaline.

If soil pH is too high (highly alkaline) or too low (highly acidic), some nutrients become insoluble, limiting the availability of these nutrients to the root system. An excess of calcium in an alkaline clay soil locks up mineral nutrients such as magnesium, manganese, iron, zinc, etc. and drastically reduces the availability of these nutrients for root absorption. For this reason, inorganic fertilizers are ineffective in an alkaline clay soil, where nearly 80 percent of applied inorganic nutrients can be locked out from plants. Furthermore, given the retentivity of clay, inorganic fertilizers may build up to a level that is toxic to plants.

A sandy soil is usually acidic. In an acid sandy soil, calcium, phosphorus and nitrogen are usually deficient, and less frequently magnesium and molybdenum are deficient. Unlike as in a clay soil, a careful use of inorganic fertilizers can correct mineral deficiencies in a sandy soil. Applied in excess, inorganic fertilizers may destroy soil microorganisms and earthworms. Nitrogen, phosphorus and potassium deficiencies may occur both in acidic and alkaline soils. In an acid soil—clay or sandy—calcium is commonly deficient, and to a lesser extent magnesium and molybdenum may also be unavailable. One cannot simply assume that a clay soil is alkaline or that a sandy soil is acidic. Test soil pH prior to adding any amendment.

Lastly, as trees use soil nutrients, the nutrients are depleted unless the tree care professional takes remedial action.
Nutrient deficiency symptoms

A nutrient deficiency affects tree growth in several different ways. The most commonly recognized symptoms resulting from a nutrient deficiency are chlorosis (yellowing of leaves), mottling (spotting), necrosis (death of tissues, browning of leaves), etiolation (long spindly wiry thin stems), stunted growth, and reduced and smaller blooms. There are times when more than one mineral element may be deficient, there may not be any clear-cut symptoms or symptoms may overlap.

Chlorosis may be confined to the margins of a leaf (marginal chlorosis as in a deficiency of potassium or calcium), between the veins (inter-veinal as in a deficiency of magnesium, iron, manganese, zinc or molybdenum), general chlorosis (yellowing of all leaves as in a nitrogen or sulfur deficiency) or appear as irregular yellow patches, as in a deficiency of chloride. The nutrients N, P, K, Mg, Cl, and Mo are mobile, and when these nutrients are below the optimal level, the deficiency symptoms usually appear first on the older growth. A deficiency of an immobile element, such as Ca, S, B, Fe, Mn, Zn or Cu, is usually initially seen on the immature foliage.

Necrosis along the leaf margins occurs in a deficiency of potassium or magnesium. Necrotic spotting results from a chloride or a manganese deficiency. A deficiency of nitrogen or sulfur results in etiolation, retarded growth and spindly appearance.

Soil and tissue analyses

Verify the visually observed deficiencies by soil and plant tissue analyses. Collect soil samples from various locations in a landscape and send it to a soil analysis laboratory. The test results include soil type, soil pH, nutrient content, and also recommendations for correcting soil problems.

A tissue analysis gives a true picture of nutrient status in plant tissues. Collect healthy and unhealthy foliage concurrently, as nutrient content of a leaf is under the control of several factors, such as mobility of nutrient ions, leaching, age of a leaf, etc. Periodic foliar analysis is good for monitoring fertilization programs for correcting nutrient deficiency or toxicity. However, one cannot rely totally on the results obtained by tissue or soil analysis alone. Tissue analysis should be carried out in conjunction with soil analysis, as soil is the main source of plant nutrients.

When present in excess, micronutrients are toxic to plants. Toxic levels of micronutrients inhibit root development and respiration, and cause an anaerobic decay of soil nutrients.

Soil amendments

Based on the test results, amend the soil to change its physical, chemical or biological composition to make it suitable for healthy tree growth. Remember, trees are like people – their needs for healthy growth are variable. Trees that grow on seashores can grow on a sandy saline soil; trees growing on bog areas can tolerate poor drainage. However, most trees prefer a healthy rich soil with good drainage. Add compost to a sandy soil and sand to a clay soil to make them suitable for tree growth.

Most trees prefer a soil pH close to 7. However, some trees have special needs with reference to soil type, soil pH and nutrients. Birch, dogwood, Douglas fir, pine, oak and willow oak, for example, prefer a soil pH 5 or below. Red maple prefers deep, moist-to-wet, acidic soils. Magnolia, crab apple and rhododendron prefer a soil pH 5 to pH 6. Stone fruits prefer a humus-rich soil with a pH close to 6. Olives prefer mild alkaline soil. By adding lime to acid soil or sulfur to alkaline soil, one can change the pH according to plants’ needs. Monitor the pH while adding sulfur or lime.

It is necessary to add organic or chemical fertilizers to enrich a soil for healthy
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growth of trees. Organic fertilizers such as well-rotted cow dung, leaf mold, compost, oil cakes, blood meal and fish emulsion are excellent sources of nitrogen. Bone meal is an excellent source of phosphorus in any kind of soil; it is very effective even in a heavy clay soil. Bone meal is also suitable for light sandy soils with good drainage. Nutrients from bone meal are more readily available in an acid soil than in an alkaline soil. However, phosphate and nitrogen in the bone meal are insoluble in water and, therefore, not readily available to plants. Microbial decomposition of bone meal makes these nutrients available to plants. Rock phosphate, though good as a natural source of phosphorus, is insoluble and not readily available for root absorption. Wood ash or burnt weed will improve the potassium in the soil. Green sand and granite dusts are natural sources of potassium. Kelp is an excellent source of mineral nutrients. An addition of large quantities of organic matter, such as composted leaf, will take care of any nutrient deficiency in any soil.

Organic fertilizers (compost, leaf mold, manure, blood meal) enrich the soil micro-flora (microorganisms) and the fauna (earthworms). The soil micro-flora release the locked up nutrients in organic matter, and make them available in a soluble form that the plants can take up. In addition, soil microorganisms recycle inorganic elements, nitrogen, phosphorus, carbon, iron, sulfur, etc.

Mycorrhizae increase the uptake of phosphorus even under low concentrations. The extensive mycelial network of mycorrhizae increases the absorptive surface of a root system and places the root system in close contact with soil nutrients, favors colonization of beneficial microorganisms and creates unfavorable conditions for pathogens by secreting antibiotics. An arborist can easily inoculate a soil with a commercially available mycorrhizae “cocktail,” which contains viable spores of Glomus intraradices, G. deserticola, G. etunicatum, G. clarum and G. mosseae. Dusting the roots of new trees with the cocktail prior to planting and placing the treated trees in several different locations will help in the spread and establishment of mycorrhizae.

Avoid an excessive use of chemical fertilizers or pesticides that will harm mycorrhizae and other beneficial soil microorganisms.

Organic fertilizers break down slowly and, therefore, do not burn plant roots even when applied in large amounts. They release nutrients over an extended period of time providing a continuous supply of...
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nutrients, so frequent fertilizer applications are not necessary. Organic fertilizers are not readily soluble in water and, therefore, do not leach from the soil during heavy rains. As explained earlier, microbial decomposition is necessary to release the locked up nutrients in the organic fertilizers into a soluble form. Poor aeration, waterlogging, low temperatures or high pH (alkaline soil) adversely affect microbial activity. This in turn will affect the nutrient availability from organic fertilizers for plant use. Drought conditions call for frequent irrigation of a soil, and mulching to keep the microorganisms active and happy.

Inorganic fertilizers, unlike organic fertilizers, have nutrient contents in definite ratios. For example, 10-10-10 (NPK) inorganic fertilizer has 10 pounds of each of three nutrients – nitrogen, phosphorus and potassium – per 100 pounds, whereas a dried cattle manure has only 2 pounds of nitrogen, 1.5 pounds of phosphorus and 2.2 pounds of potassium. In other words, very large amounts of organic fertilizers (nearly five times as much as that of 10-10-10 NPK) have to be applied to a landscape soil for an adequate supply of nutrients to a tree.

Inorganic fertilizers are factory manufactured chemical fertilizers with defined quantities of macro and micronutrients. The label on a fertilizer box or a bag carries information regarding the amounts of nitrogen, phosphorus and potassium (NPK) in the fertilizer. In addition, they all contain adequate amounts of micronutrients.

In addition to balanced fertilizers, fertilizers containing just one or more nutrients are available to take care of specific nutrient requirements. Chelated liquid iron (EDTA-Fe) serves as a good source of iron that a tree can readily use.

The need for various nutrients changes as a tree matures. A tree at the time of transplanting needs no fertilizer as long as the soil contains an adequate supply of the needed nutrients. Using chemical fertilizers at the time of transplanting will damage the root system of a young transplant. A compost tea is beneficial to a transplant.

The demand for fertilizers is greater when an established tree is actively growing and less during its dormancy. Early in spring a tree requires more nitrogen than any other nutrient. Later, when producing flowers or fruits, it needs more phosphorus and potassium. Fertilize according to the needs of a tree during different seasons.

Healthy soil ensures healthy tree growth and an increase in productivity. Flowering trees grown on a healthy soil will give an abundance of bigger blooms, fruit trees will give an abundance of larger fruits and trees grown for shade or screening will prosper. Trees growing on a healthy soil in home or public gardens or on the roadside, in addition to being visually attractive, will live for decades.
Make A-mail, Z-mail, I-mail Profit-Boosting Tools

By Richard G. Ensman Jr.

E-mail has probably become part and parcel of your business life. No doubt you noticed that it’s being used as a sales tool with increasing frequency. Perhaps you have used e-mail to generate interest in your products, or even push a sale or two.

Over the last few years, ordinary e-mail has spawned new forms of electronic communication. “Z-mail,” or “zine mail,” for instance, refers to communication that brings newsletters into electronic mailboxes – and strategically focuses customer attention on certain products or businesses. Some varieties of communication are less well defined. These include “a-mail” (appointment mail) and “p-mail” (premium mail).

Whatever the state of electronic communication in your world right now, what matters is this: you can use electronic mail to build image, traffic and profits in ways that you might not have thought about before. Consider …

A-mail – appointment mail. This form of communication is great for reminding clients or customers of upcoming appointments, or encouraging them to make appointments. Dentists, health professionals, car dealers and home repair contractors are using a-mail to quickly and inexpensively generate business. Why not tree care businesses? An e-mail reminding past clients of seasonal services and IPM inspections could keep business flowing.

C-mail – click-through mail. C-mail messages include one or more links to Web sites that explore a subject, or entice customers or prospects to order. C-mail is especially appropriate when you’ve updated Web content or launched new Web pages on your site. New pest alerts or articles on fertilizer at other Web sites could highlight your company’s services – even if you don’t have your own Web site.

D-mail – directional mail. This electronic communication pushes consumer traffic your way. How it works: It generates electronic messages emphasizing special offers, discounts or other incentives whenever business is slowing.

F-mail – frequency mail. You can use this form of e-communication to track loyalty program results or remind customers to visit you. For instance, if you offer a free service whenever a customer has purchased a set dollar amount of services from you, a monthly f-mail message can alert customers to how close they are in order to qualify for the freebie.

G-mail – group mail, or electronic mail via distribution list. Virtually all e-mail management software allows you to create lists of groups – friends, committees or members, for instance – and send a single message to all individuals on the g-list at one time. If you need to distribute messages to larger groups, hundreds of inexpensive bulk distribution services are available.

H-mail – honor mail. Use this e-mail alternative to offer congratulations and recognition to individuals who have joined a special customer or client club. Use it also to recognize customers whose names have appeared in the media or who have done something praiseworthy.

I-mail – invitation mail. Use i-mail to invite customers to special events, such as openings, receptions, or special sales. And while RSVP etiquette doesn’t apply to the electronic world, you can ask for a reply.

O-mail – organizing mail. Organizing mail is great for following up on leads, setting appointments or generating telephone calls. Retailers use o-mail to alert special customers of the availability of new products, and invite them to call immediately. Some sales professionals use o-mail templates to ask for and confirm appointments and demonstrations.

P-mail – premium mail. Use p-mail to offer a premium or free gift to customers or clients. P-mail is a great way to thank customers for an order, but it’s equally appropriate when you’re trying to generate new business.

Q-mail – question mail. These electronic messages don’t convey information; they pose questions. Q-mail is ideal for surveys (but keep them brief). Q-mail is also useful when you want to get information about a prospect or learn about a customer’s upcoming needs. Remember: questions are interactive, and they often intrigue people.

R-mail – remembrance mail. Maybe you can’t send a birthday or anniversary card to every customer. But with little effort – a few date-specific queries and a few clicks of the mouse – you can send these greetings via r-mail.

S-mail – electronic communication that emphasizes the subject line. Surveys suggest that an engaging, personal subject line is the single most important ingredient in getting your e-mail message opened.
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Controlling the Assault of Non-Solicited Marketing


The crux of the problem is that spammers disguise who they are by using misleading subject lines, including vulgar and sometimes pornographic material. Spammers do not allow you opt-out from receiving any more unwanted e-mails. Because of this abuse, there has been tremendous public outcry and, therefore, a substantial government interest in regulating commercial electronic mail on a nationwide basis.

Federal vs. State spam laws:
The CAN-SPAM Act supersedes all existing state spam laws, except for the state laws that pertain to falsifying e-mail addresses. Furthermore, the Federal government wants to be notified by any state that initiates a spam lawsuit, and they reserve the right to join in and move the case to a regional United States District Court.

Definition of Commercial e-mail:
The CAN-SPAM definition of the “Commercial Electronic Mail Message” is important. It is described as a commercial advertisement or promotion of a product or service, including the content of a Web site operated for commercial purposes.

It notably excludes “Transactional or Relationship” e-mails that are sent to facilitate, complete or confirm a commercial transaction.

This also excludes account statements, change of status, product updates and upgrades, warranty information, safety or security information, subscriptions, memberships and other similar commercial relationships.

To avoid “spamming,” what constitutes a commercial e-mail:

- Must NOT disguise mail header (digital path which it took to get to the recipient).
- Must NOT use a false or misleading “From” line.
- Must NOT use a deceptive “Subject” line.
- MUST include a “clear and conspicuous identification that the message is an advertisement or solicitation.”
- MUST include a “valid physical postal address of the sender.”
- MUST include a “clear and conspicuous notice” that lets the recipient opt-out.
- MUST include a functioning return address or automated way to opt-out. The opt-out mechanism must work for 30 days after the e-mail was sent, and the sender has 10 days to remove someone that asks to be removed.

Fines and penalties:

For the passive spammer who has only disguised two or more domain names and used five or more fake e-mail addresses, it’s 1 year in jail, plus fines. If the spammer used more than 20 fake e-mail addresses, or sent out more than 2,500 spam e-mails in a day, the penalty jumps to 3 years in jail, plus fines. If the spammer was convicted of spamming before, or if they committed another felony, they are looking at 5 years in jail, plus fines. The spammers also stand to lose any personal or real property associated with the act of spamming.

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100 people can make its way into thousands of electronic mailboxes.

W-mail – wrapper mail. This e-mail alternative is like an electronic bag or basket. It contains information or offers from multiple companies, or even a mixture of promotions from a single company. To keep the message short and readable, promotions may contain links to various Web sites.

Z-mail – zine mail. An e-zine, in its simplest terms, is an electronic newsletter. E-zines range from elaborate full-color communication (the electronic equivalent of a glossy periodical) to breezy, concise two- or three-paragraph “blurbs.” You can distribute z-mail on a fixed schedule, or whenever information or offers happen to be available.

So remember: e-mail isn’t just e-mail anymore. You can turn this commonplace communication medium into any number of powerful marketing tools. The result: your bottom line may never be the same.
# THE ONLY CHOICE FOR CHIPPER KNIVES

- Premium Quality Chipper Steel
- 100% Multi-Point Inspection
- Same Day Shipment, *Knives Shipped Day Order Received*
- Guaranteed Performance
- 80 Years of Experience
- Convenient, Safe Packaging, *Knives Are Individually Wrapped*

## Vermeer

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Part No.</th>
<th>Knife Description &amp; Size</th>
<th>SALE PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>BC1000</td>
<td>KCH20109</td>
<td>Double Edge 9&quot; x 4-1/2&quot; x 5/8&quot; .....</td>
<td>$27.66</td>
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<tr>
<td>BC1220-BC1250</td>
<td>KCH20002</td>
<td>Single Edge 8&quot; x 3-1/2&quot; x 3/8&quot; .....</td>
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<tr>
<td>BC1400</td>
<td>KCH21100</td>
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<tr>
<td>BC1800-BC2000</td>
<td>KCH20103</td>
<td>Double Edge 10&quot; x 5-1/2&quot; x 5/8&quot; .....</td>
<td>$33.12</td>
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</table>

## Morbark

<table>
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<tr>
<td>100, 200, 290</td>
<td>KCH10001</td>
<td>Double Edge 7-1/4&quot; x 4&quot; x 3/8&quot; .....</td>
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<tr>
<td>10, 13, 17, 2050</td>
<td>KCH40001</td>
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## Brush Bandit

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<td>Double Edge 5-3/32&quot; x 4&quot; x 3/8&quot; .....</td>
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<tr>
<td>Model 90XP, 280XP</td>
<td>KCH10004</td>
<td>Double Edge 5-3/32&quot; x 4&quot; x 1/2&quot; .....</td>
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<tr>
<td>Model 100XP-250XP</td>
<td>KCH10003</td>
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<tr>
<td>Model 250XP, 254XP after '01</td>
<td>KCH10101</td>
<td>Double Edge 7-1/4&quot; x 4-1/2&quot; x 1/2&quot; .....</td>
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<tr>
<td>Model 1890 Intimidator</td>
<td>KCH20103</td>
<td>Double Edge 10&quot; x 5-1/2&quot; x 5/8&quot; .....</td>
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<tr>
<td>Model 1290 Drum</td>
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<tr>
<td>Model 1690 Drum</td>
<td>KCH30002</td>
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<td>$18.60</td>
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## Asplundh

<table>
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<tr>
<td>12&quot; Drum</td>
<td>KCH30001</td>
<td>Single Edge 12&quot; x 3&quot; x 3/8&quot; .....</td>
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<tr>
<td>16&quot; Drum</td>
<td>KCH30002</td>
<td>Single Edge 16&quot; x 3&quot; x 3/8&quot; .....</td>
<td>$18.60</td>
</tr>
</tbody>
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## Mitts & Merrill

<table>
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<tr>
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</thead>
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<td>Double Edge 4-1/4&quot; x 2-3/8&quot; x 1/2&quot; .....</td>
<td>$9.20</td>
</tr>
</tbody>
</table>

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www.zenithcutter.com
What do stump grinders and McDonald’s restaurants have in common? It’s the ability to generate profits by offering attractive add-ons to the basic menu.

Over the years, Tree Care Industry magazine has reviewed technological and ergonomic advancements in the venerable stump grinder, but for this article we will look instead at stump grinder owners – who fall into one of three categories.

First, there are those who see these units as accessories to their business, a machine that they bring out only when the need arises.

Second, there are those who actively promote stump grinder use as a way to add-on to the bottom line in a major way.

And third, there are the pros around who “specialize” in tree removal, leaving the stump business – and 20 to 30 percent of their business – to others. If you’re a small operator, that doesn’t appear to be much of a concession at first glance, but it will add up, and rather significantly, the larger the operation gets.

Twenty to 30 percent more business? That’s right. According to the pros we interviewed, the value of stump grinding will add between a quarter and a third to the bottom line each year, and that holds true regardless of whether you’re a small operation or a large one.

The three businessmen contacted for this article speak for just about every end of the business, and they agree that if you don’t have a stump grinder, get one. If you have one (or more), use it. Either way, think like McDonald’s. Promote it as part of your business services menu.

Roger Venner owns Predator Tree Service in central New Jersey – the Middlesex area. He’s been in business 12 years, and his is a classic story. “I started selling firewood as a kid, and things just escalated,” he explains. Pretty much self-educated in the craft of tree care, Venner says, “I had some great partners and co-workers, so I was able to learn from the veterans.” These days, Venner employs two workers during the week and up to three or maybe four on Saturdays.

For the past six years, Venner has run a Miller SS75 attached to a track machine, sufficient to support what he calls a small tree service specializing in residential work, municipal contracts and some land clearing. Before the track unit, Venner utilized a Miller tow-behind model.

“I don’t actually advertise that I offer the service, but I will tell my customer about the stump grinder as part of a total package. So, I use it pretty much on every job. For the townships, it’s a mandatory thing – I have to grind the stump.”

On a typical $1,000 tree takedown, Venner says he makes an additional $200 – that’s an extra 20 percent – grinding stumps.
about 4 feet across, brings you another $200, right off the bat. For a 3-foot tree, I can get $150 to $200 for that grinding.”

The best part is the volume angle. If Venner’s “doing a bunch, say five trees or more,” he’ll charge a minimal $75 or even $50 per stump, going quickly from stump to stump on the same site. The quick procedure means quick profit.

“I arrive prepared. I have everything with me, the track machine and Miller, right there on the trailer.”

That’s not only a profit-maker on the original job, but Venner says there are usually other stumps in the neighborhood that were left behind by others. “All the time, I get stump work for another house or through word of mouth. I don’t have to advertise it.”

Venner figures that profit percentages go even higher for those neighborhood target-of-opportunity jobs, since they weren’t planned and weren’t bid – and the overhead cost of setup is virtually nil, having been built into the original job.

His main advice to others is that “stumpers” are a major plus for anyone in the tree business. “It used to be that all some guys did was stumps. But now, just about all the ‘big guys’ have stumpers and are virtually killing off the stump-grinding-only guys. There are a few left, but not so many and they don’t do as well as they used to. If you start out with a grinder-only business, plan to move up to other services,” he warns.
Either way, the bottom line for Venner is this: “If you’re in the tree business, the stump grinder is a necessary tool – there’s a lot of extra money to be made with a stump grinder – a lot!” he says.

We also caught up with Carl Weis who had been out in the 10-degree late January weather of Burlington, Wisc., plying the stumping trade for his company, Complete Tree Service. “I work my Rayco – every day. We grind stumps year-round.”

In the tree business since he was 17 and full-time for the past 25 years, Weis says, “I’ve used them all. Currently we have a Super RG 50 and the 1672.” (The RG 50 is a walk-behind, self-propelled unit. The 1672 is a towed unit.)

Carl is quick to volunteer that he had the first Rayco in the Wisconsin area. “Now, they seem to be everywhere. Four- or six-wheel drive, they’re very versatile.”

“Sure you can make money with a stumper,” he relates. “Anyone can make a good living around here just by advertising stump removal.” He notes, however, that those days may be numbered. He figures that these days about eight out of every 10 full-time tree service companies have stumper grinders in the tool crib.

“That also depends on the area. Up here, you’d have to advertise that stump grinding is all you do. Your customers would likely be do-it-yourselfers or large tree service companies or municipalities looking to sub-contract, but you could definitely make a living.”
“We don’t call stump grinding an add-on. When we cut a tree, the stump goes. Years ago, you could leave the stump, but now the customer wants the tree down, stump gone and a complete cleanup. That even means putting in sod. These are changing times,” he says, “People have more concerns for their property. They want it so they can’t even tell the trees were ever there. That’s the service.”

“You have to be competitive in business today.” He cites nearby Lake Geneva, a great tourist area known for second homes. “There are a lot of summer homes and a lot of trees there. That’s a good business area.”

Weis bills a bit differently from Venner – at $2 per inch, per stump, plus a trip charge – for a low of about $50 per average stump up to $125 for a large one. His objective is to do volume stumps if possible. He can cost a job so that the client can get four stumps done and “almost get one done free.” That’s how cost effective it is for Weiss, once the unit is on site.

A large reason for that kind of value-added profit-making comes from what Weis sees as vast improvements in stump grinder technology over 20 years. “They’re more powerful, faster cutting, easier to use and safer. The new ones are very operator-friendly. The new ones cut time at least in half,” he maintains.

He also agrees that the advancements leading to ease of use played a subtle but important role in short- and long-term profitability because it takes less time and less training to put a skilled operator to work safely. Not only does that save time and therefore money, he’ll tell you, it also means labor rates can be kept in check. That’s because less skilled operators now can grind stumps while the more skilled – and higher paid – ones can move onto the more complicated tasks.

His advice? The same as Venner, only more direct. “Go out (and) buy a new one. It’s a money-making machine.” Weiss says operating costs can go down even more with a single operator who learns to take care of and know the machine.

What about his rate of return on a job? “Oh, at least 20 percent,” he maintains. “We take it out every day, sometimes two machines go out. If you are in the tree care industry, I can’t believe you don’t have or don’t use the one you have. I also can’t see paying anyone for doing it for you.”

Weis knows the customer. If they want it to look like the tree was never there, the stump cutter is just the beginning of the up-sell. He now knows he can charge for additional cleanup and for black dirt, sod, grass seed and the other landscaping items. “That adds yet another level of profit to the tree-take-down job. Altogether, it can be very, very profitable – so much for each stump (remember that first 20 percent) and another 50 percent on top to cleanup.”

“The profit is in the service add-ons. Get the best business through add-ons,” he advises. “Begin by buying a new one, and do the complete job,” he says. “Look at the added income potential of each job. We price every tree differently and offer a large variety of options depending on the circumstances.”

At the far end of the business spectrum is “T Ray,” officially Marshall T. Ray, owner and president of the Robert Ray Company of Louisville, Ky. With 43 years of personal experience (Eisenhower was still president), a fourth-generation tree and property care expert and a member of the Tree Care Industry Association for more than three decades, T Ray has a lot to say.
If what Roger and Carl had to say about the profitability potential for add-ons represented by the venerable stump grinder didn’t make the point, get this: T Ray says his company racks up add-on business in the six figures, and the stump grinder is the door opener to that kind of money.

“If you’re in the tree care business and removal is a part of that business, when you’re doing a removal you should be offering stump removal as part of a complete package. Let’s put it another way. If you offer a service, you must finish it.” He concurs with his colleagues that stump removal is about 10 to 20 percent of the tree-removal price. “If you don’t take the stump you’re leaving 10 to 20 percent of your business to someone else.”

T Ray is a field tester for Vermeer and swears by his. “When Vermeer came out with the auto-sweep technology a few years ago, it was so easy it took the brains and most of the skill out of running a stumper. Now anyone can run it. Using lesser-skilled labor means the value of the job goes up.”

He’s picky about how his jobs are done. “A lot of people don’t remove stumps properly. The site should be flat and level with no earth berm. Too many grind out the core only, leaving the root flare and surface roots.” He says the property owner will discover that shortcoming about the first time the lawn is mowed after the tree comes down. “We do it right. I don’t want my name used as a cuss word.”

T Ray knows and is open about the fact that removing stumps is one of worst parts of tree removal. “Cleaning up is worst, because it’s all gotta be shoveled back and raked up. At first, customers think they’re saving money by doing it themselves, but they come to find out how difficult it is. Eighty percent of stump removal is cleanup, 20 percent is the grinding. But if you’re not offering the service, you’re leaving money on table. You could do the greatest job on the biggest tree, and if you leave the stumps or the chips, all of a sudden the customer forgets how good a job you did.”

If you don’t take the stump, you’re leaving 10 to 20 percent of your business to someone else.”

Marshall T. Ray

As TV commercials say, “But wait, there’s more.” Stump grinding is a door opener to more business, offering T Ray the opportunity to sell his own home-brew topsoil plus seed or sod. “That’s another 20 percent again,” he says. “Taking away chips, and selling seed and straw can generate as much income as removal and cleanup of stump,” says T Ray.

His advice is at first basic, then specific. “If you spend a lot, you get a lot. My cheapest machine is a $39,000 Vermeer. If I owned only one, I would spend $200,000 or more because I do as much in stump removal as most (TCIA) members do in business all year. And I could do more if I wanted to.” After that, “Whatever you get, keep good teeth on it. Performance is profit.”

There’s a reason why T Ray’s company motto is “No job too small. No tree too tall.” His final advice is this: “The last thing a customer wants to see from you is nothing – never see a trace of that tree.”

Rayco’s RG 1631 is a larger, more powerful version of Rayco’s RG 1625A Super Jr. It has 31 hp fingertip controls, variable speed, single wheel or pos traction select drive, an anti-creeper and a cutter wheel brake for safety.

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General Tree Service offers Tree Preservation Grant Program

General Tree Service of Clackamas, Ore., has announced the continuation of their Tree Preservation Grant Program for 2004. John Landon, owner, said that the program, which was established four years ago, is an extension of the voluntary tree preservation work that they have been doing for years.

The grant is available to local governments, nonprofit organizations and deserving individuals.

It will help these entities, which for various reasons are unable to otherwise do so, preserve valuable and irreplaceable trees, and it will help publicize the need for quality care to preserve the long-term health of trees.

"With our grant program," Landon said, "we are attempting to inform the public of the need for protecting and maintaining their valuable trees and of the benefits of using professional help to care for these trees."

Landon said applications for the 2004 grant are available now. Organizations or individuals from metropolitan Portland/Vancouver are eligible. General Tree will award the grant during either Oregon's or Washington's Arbor Day commemoration in early April.

Contact John Landon at (503) 656-2656, Ext. 415 for a grant application or for more information.

Vance Acquires C&P Press Aggie & Horticultural Publications

Vance Publishing of Lincolnshire, Ill., has acquired the agricultural and horticultural product reference and information publications of C&P Press Inc. of New York. Terms of the acquisition were not disclosed.

C&P Press is most recognized for the Crop Protection Reference (also known as the Greenbook), which is the leading resource of technical and regulatory crop protection product information. Other properties acquired by Vance include the Turf & Ornamental Reference, the Material Safety Data Sheet Reference manual, the Worker Protection Standard reference manual, and the electronic database products and Web site properties from C&P Press.

These new properties join the print and electronic publications in Vance Publishing’s Crop Division, which include Citrus & Vegetable Magazine, Cotton Farming, Dealer & Applicator, The Grower, Peanut Grower and Rice Farming.

Sonia Tighe, group publishing director of Vance’s Crop Division, says the acquisition allows Vance to deliver the most current and complete information on crop protection products to a wide variety of audiences in the green industry. “By combining the Vance publications with the valuable reference materials from C&P Press, professionals in the agricultural, turf and ornamentals industries now have a one-stop resource for information on crop management and production products,” says Tighe.

Vance Publishing will maintain the current C&P Press facilities and other assets in New York City. Management and sales activities for the newly acquired books will be directed from the company’s Lenexa, Kan., offices, while editorial and production functions will remain in New York.
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**Cutting Edge**

**New Products & Services**

**PHC TreeSaver Reformulated for Faster Response**

Mycor Tree Saver has been reformulated to include formononetin, a patented isoflavone, and beneficial rhizosphere bacteria. Mycor Tree Saver is a mycorrhizal fungal and microbial soil inoculant used to increase survival and growth rates of trees and shrubs after planting. Formononetin commonly occurs in the roots of clover plants and has been proven to stimulate the growth and root colonization by vesicular arbuscular mycorrhizal (VAM) fungi on many plant species. Once VAM fungi inhabit roots, the fungi help the plant reduce stress caused by drought, compaction, high soil temperatures, heavy metals, soil salinity, soil toxins and extremes in soil pH. The inoculant is effective for all tree and shrub species except rhododendrons, azaleas and laurels. Contact PHC at 1-800-421-9051 or via www.planthealthcare.com.

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**Pump up the green with Nutriboosters**

Trees looking yellow or suffering from poor leaf growth? Pump up the green with ArborSystems Nutriboosters. One application can relieve symptoms from iron chlorosis and certain deficiencies of iron, manganese, phosphorus and potash. Developed for use with ArborSystems Wedgle Direct-Inject Tree Treatment System, Nutriboosters micronutrients are available in six formulations. This system places chemicals directly into the tree’s active layer (cambial zone) so you may see results in as little as five days, and you can treat almost any tree in five minutes or less. Plus, with no drilling required, you can treat trees year after year without damage or long-term wounding. For details, visit www.arborsystems.com or call 1-800-698-4641.

Please circle 192 on Reader Service Card

**Independence Brand Climbing Line**

American Arborist Supplies’ new Independence brand climbing line, a 1/2-inch, 16-strand rope, comes, appropriately, in three colors – red, white and blue. The new polyester covered nylon rope has a tensile strength of 7,000 pounds. The company designed a rope that has all the handling and safety qualities arborists seek in a premium rope, but at a price everyone can afford. The West Chester, Pa., company is packaging its Independence climbing line in 120-foot and 150-foot lengths. Contact American Arborist Supplies at 1-800-441-8381 or visit the online store at www.arborist.com.

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**Woodman’s Model 20X Chipper**

In response to the growing demand for larger-diameter material disposal, Woodsman has introduced the largest drum chipper on the market, the Model 20X, with a 20-inch diameter capacity. A rear-pivoting feed system and two hydraulic cylinders mounted on the yoke provide increased down pressure for drawing and crushing material. The 36-inch-wide by 37-inch-diameter chipper drum provides a full 30-inch cut that chips the most difficult material. The Model 20X is available with an 8-foot folding in-feed conveyor or loader. These features are available with wireless remote control, for ease of feeding piled or larger-diameter material. For further information, contact Woodsman, 320 Ludington Drive, Farwell, MI 48622; 1-800-953-5535 or via www.wooodsmanchippers.com.

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New Efco 932 Chain Saw

The new Efco 932 is a top-handle chain saw designed and engineered for the professional tree care worker. The 30 cc model has a high-torque engine with a chrome-impregnated cylinder, three-piece crankshaft, drop-forged connecting rod and ball bearing mains. Other features include an air purge primer, inertia-activated chain brake, dual element air filter and a multi-point anti-vibration system. The handles have a textured surface area and a special ribbed thumb rest for better grip and control. The Efco 932 has a 1.6 hp engine, a power-head weight of 7.5 lbs., an automatic, gear-driven oiler with zero idle flow, and optional bar lengths of 12 or 14 inches. Efco products are imported and distributed in the U.S. and the Caribbean by Tilton Equipment Co. of Rye, N.H. 1-800-447-1152 or via www.tiltonequipment.com.

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Merit 25G Insecticide Registered in California

Merit 2.5G Ornamental Insecticide, made by Bayer Environmental Science, was granted registration recently for use on ornamental plants in California. The product is now approved for use in all states in the United States except New York, where registration is pending. Merit 2.5G is a granular insecticide. It is used to control sucking insects, including psyllids, lace bugs, aldegids and aphids on outdoor and interior shrubs and small trees. The product is applied based on volume, not weight, so applicators simply measure the appropriate rate of Merit into the provided measuring cup, and spread the granules around the base of the plant. There is no mixing, injection, spraying or calibration needed. The liquid formulation of Merit has been used in the United States since 1994 for control of white grubs, surface-feeding pests and ornamental pests. For more information, call 1-800-842-8020 or visit www.bayerprocentral.com.

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How many times have you heard novice gardeners say it? “Native trees didn’t evolve with the buildings and sidewalks and pollution of our urban environment, so should we plant a Chinese (fill in the blank)?” Well, gee, I went to China a few years ago to see for myself, and guess what? Chinese trees evolved in the forest, just like ours! They are no better or tougher than many of the trees from our own neighborhoods.

Our native species know our climate and have adjusted to it over the millennia; they won’t keel over at the next hard winter or hot summer a few years from now. They have evolved with our other native flora and fauna, so they support our wildlife while resisting damage from native pests and diseases. And they won’t escape to become the next autumn olive, tree of Heaven, tallow-tree, kudzu or Asian honeysuckle nightmare.

Any new tree, native or not, will benefit from pre-planting soil improvements, especially if your contractor used the site for a bulldozer testing ground. And any established tree will appreciate some protection from that same renegade dozer driver. But some of our American trees can grow quite well on compacted sites. They also can tolerate drought, poor drainage, high pH, heat radiation, wind-tunnel effects of buildings, road salt or just about anything else you might throw in their path in the course of making a landscape more enjoyable for its human inhabitants.

Probably there is no one single species that thrives under all these conditions. Contrary to some of those silly advertisements you might see, there are no miracle trees, not even the hybrids that reportedly grow as tall as a 10-story building in three days. If you can identify your site’s limitations, you probably can find certain native trees that will adapt to them. Let’s look at a few. Some are old standbys, while others might be new to you, or cause you to think of them in a new light.

ASHES: Our native white ash (Fraxinus americana) is surprisingly adaptable to many growing sites, despite its natural preference for sweet soils and mesic conditions. It has gorgeous (and very early) fall color, and male selections are available if seed litter truly is of concern. Green ash (F. pennsylvanica) is even more adaptable, albeit not quite as majestic a tree; it does well if given early attention to pruning for a strong limb structure. But the real sleeper might be blue ash (F. quadrangulata), which loves high pH and drought. They all are easy to transplant and will grow rapidly with reasonable care.

HACKBERRIES: These are trees of alkaline sites, droughty conditions, flood plains, infertile soil, hot west-facing slopes, and — well, you get the idea. Our common eastern hackberry, Celtis occidentalis (whose name really means western hackberry because it’s not the species from Europe — go figure!) is joined by sugarberry (Celtis laevigata) in the South, dwarf hackberry (C. tenuifolia) on dry bluffs and, out west, netleaf hackberry (C. reticulata) in the desert. All of them develop interesting, intricate branching and seem immune to city conditions.

BIRCHES: Many of us who live in the central or southern part of North America would love to grow trees with beautiful bark like the birches we see in Canada. There are possible solutions for us, and they don’t come from foreign lands: river
Birch (Betula nigra, especially the cultivar ‘Heritage’) and gray birch (B. populifolia, especially the cultivar ‘Whitespire’). River birch tolerates extreme heat and poor drainage as long as it has acidic soil and moisture. Whitespire birch might be the one hope most of us have to grow a birch with white bark and not see it die in a few years from borers. Other birches? Forget it!

**HAWTHORNs:** As small, flowering trees go, the hawthorns (Crataegus species) are about as tough a bunch as you can find. There are myriad species and cultivars, and nearly every one can survive some pretty harsh conditions. They have strong wood (unlike many other flowering trees), great flowers and nice fruit in the fall. They also can have thorns, which requires a little common sense in their placement. Some carry their fruit display into winter, brightening up the season and providing emergency rations for birds when the going gets tough out there in the snow.

**OAKs:** You already know that old oaks are not fond of disturbance and are likely to die within a few years following serious construction activity within their root zone. But if you give them room and protect them during construction, they can live for centuries and provide the cornerstone of your neighborhood. They also establish well when planted on new construction sites, since they are adapted to relatively poor soils and hot, dry conditions. White oak (Quercus alba) makes a regal, long-lived, strong-wooded tree that resists heat and drought, as long as you don’t have high pH or poor drainage. Swamp white oak (Q. bicolor) also needs neutral or acid soil, but can live in compacted soils or survive standing water for months at a time. Pin oak (Q. palustris) is

**Sugarberry (Celtis tenuifolia) seems immune to city conditions.**
planted more often than it should be, but on wet or compacted sites with acid soil it is a superior performer. Northern pin oak (Q. ellipsoidalis) has many of the same ornamental attributes, but grows naturally on very droughty sites. Chinkapin oak (Q. muenhbergii) will take nearly any pH and thrives in anything from swamps to prairie hilltops to desert canyons. Bur oak (Q. macrocarpa) is just as adaptable, growing as well in acidic flood plains as it does in alkaline savannas. For southern gardeners, the much-maligned water oak (Q. nigra) is an adaptable, fast-growing tree that needs only to have some early training to prevent multiple leaders. And for the Deep South, nothing can beat the regal live oak (Q. virginiana). These are fewer than 10 percent of our native oaks; in all, we have about 90 oak species and many oak hybrids in North America.

BLACK GUM: Most of us tree folks know this as a classic tree with an erect central leader in youth, slow of growth and very long of life, with foliage that is absolutely brilliant in early fall. What you might not think about is that it is equally at home in some of the swampiest sites in North America as it is on high ridges of the Appalachians, which bodes well for its chances in your urban landscape. The shiny leaves seem to shed dust and pollution, and this tree is one of those few that looks as good in late summer as it did before the onset of drought and insects several months earlier. Its wood is very strong and its structure is ideal for durability.

SASSAFRAS: Most of us think of this as a small, suckering, fence-row “brush” species. But with its roots protected from adjacent tillage, sassafras (Sassafras albidum) can become a single-stemmed forest giant more than 100 feet tall that is ornamental in every season. Many people recognize its magnificent fall color, can-
delabra-like sympodial branching, and wonderful fragrance, but how many know that the bright golden haze that appears at the edge of the forest when adjacent red-buds are blooming is the aggregation of thousands of flowers of sassafras? This is a fast-growing tree that can thrive in any soil from sticky clay to railroad ballast. Transplanting is tricky, and damaged trees on construction sites do not fare well. But if such damage can be prevented, a healthy sassafras is an eye-stopper.

OSAGE-ORANGE: “Whoa!” you say! “That’s that nasty, thorny, tangled-up thing we used to see in hedgerows, before ‘modern’ farming eliminated most of them!” True enough. But it’s a highly variable species, and there are some cultivars being selected that are thornless, fruitless, have great fall color and are very ornamental. Osage-orange is tough, wind-firm, immune to decay, has no insect problems, grows quickly, tolerates smog and any soil pH – and the list goes on. Consider ‘Whiteshield,’ a male selection from Oklahoma; ‘Pawhuska,’ from Kansas; or ‘Double-0’ (which merely stands for Osage-orange) – all thornless males. Or, if you would like a beautiful thornless female tree with decorative three-pound fruits and really picturesque branching, watch for the introduction of our new cultivar ‘Cannonball.’ It’s the only female cultivar selected to date, and now is undergoing propagation in Europe. (Yes, Europeans like our native trees too!)

BLACK WALNUT: What? Black Walnut? How, you ask, could I recommend this murderer of tomatoes and azaleas? Because Juglans nigra is one of the very best friends of your lawn (as well as your squirrels), and it will grow in many soils of varying texture and pH. It leaves out late in spring and becomes dormant early in fall, giving your cool-season turf plenty of light when needed most, and its allelopathic qualities actually help to weed your lawn while having no adverse affects on the grass. Pretty neat, huh? It is also strong wooded, cold hardy and can be very fast growing under decent conditions. Then, if you decide in a few decades that you don’t want it, you can sell the log and retire to the Bahamas on the proceeds (well, maybe not). Just watch out where you put it, because those falling nuts will hurt if they land on your head and will stain if they land on your patio. Everything has its place, and black walnut serves as the perfect example for that advice.

BLACK LOCUST: Okay, now I’m pushing your buttons, right? Locust (Robinia pseudoacacia) is known as a weed tree, the thorny scourge of the burning sands and the suckering nightmare of many natural area managers. But it is much less likely to send up those notorious clonal sprouts on heavy, shaded soil, and there are some selections that are very well...
behaved trees. The nearly thornless one at our arboretum sends out a small sucker about once every two years - not exactly high maintenance. Locusts have picturesque branching, very fast growth, decay resistance, extreme soil and pollution tolerance, and beautiful white flowers that are Heaven to bees. This species (along with its several highly ornamental cultivars) is much more appreciated in European cities than here on its own continent, and it is the consummate urban tree.

**BUMELIA:** What is it? Bumelia (*Bumelia lanuginosa*, also called *Sideroxylon lanuginosa* by some taxonomists who like to keep us guessing) is the toughest kid on a rough block. This tree usually is small, but can reach up several stories under good conditions. It is immune to heat and drought, and seems unscathed by insects or diseases. If you can find it in a specialty nursery, or preserve it on site during construction, it is one of those rare prizes worth having.

**SWAMP PRIVET:** No, it's not a true privet. But it is a very tolerant little tree often thriving under seemingly impossible conditions. Caving river banks and flood zones are home-sweet-home to *Forestiera acuminata*, and it will do nicely under nearly any urban conditions as well. It needs a lot of pruning when young to develop good form, and that's about its only requirement. If you like the fruit, or the birds it attracts, plant both genders; otherwise, stick with males. Both genders have a nice flower display (a cloud of tiny yellow blossoms) in very early spring. Just don’t ask where to buy one, because like bumelia, this is a tree that most commercial nurseries apparently don’t know yet. Look for it from specialty mail-order nurseries, or grow it easily from seed collected around July 4 and planted immediately.

**DECIDUOUS HOLLIES:** Like some of the other trees we have discussed above (ashes, Osage-orange, sassafras, sumacs, gum and swamp privet), this is a dioecious genus. Males pollinate, and females bear the brilliant berries we all love, so plant both. There are several deciduous native species of holly, each of which can be grown either in tree form or as a large shrub. The two most commonly seen are possum-haw (*Ilex decidua*) and the smaller but equally attractive winterberry (*I. verticillata*). Both tolerate poor drainage and are not picky about soil compaction or fertility, and their wood is hard as nails. Possum-haw is more southerly in distribution but can be grown north through USDA zone 5, while winterberry extends north well into Canada. As with some hawthorns, the fruits hang around into winter, until eaten by birds, which seem reluctant to take them until we have had our Christmas landscapes enriched by their presence.

We have barely scratched the surface. There are perhaps 700 species of trees native to North America, one of the richest temperate habitats in the world. While exotic species can be fun, and some undoubtedly have no native counterparts, first take a look at what our own flora has to offer for your urban landscape needs. Check out the trees from the ‘hood’ – they were here about 10,000 years before you were, and they have learned how to survive.

Guy Sternberg will present this information in more detail at the Chicago Botanic Garden Woody Plant Symposium on Tuesday, Feb. 24, 2004. The symposium is titled “Woody Plants for Midwest Landscapes: Urban Upgrowth” and is designed specifically for nursery, arboriculture and landscape professionals working in urban areas. Log onto www.chicagobotanic.org/symposia or call (847) 835-8261 to request a more detailed program.
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uring the record-breaking heat of the summer of 2003, it seemed that hardly a week passed without a new report of devastation caused by incessant wildfires, mostly across the West and Midwest. A combination of exceedingly hot and dry weather, strong winds and acres of dry, dead forests – including thousands of acres of dead pine as a result of pine beetle infestations – fueled the blazes that killed dozens of people and displaced hundreds, wiping out miles of forest along the way.

Fighting blazes from Arizona to California to the Northern Rockies tapped all available firefighting resources, and still it was not enough. In fact, at one point in August according to the National Interagency Fire Center, there were more than 30 large wildfires (“wildland fires” is actually the technical term that federal and other officials use when creating fire policy) burning in 11 western states.

It can be frustrating and sad to watch so many forests go up in smoke, but many tree care companies are in a position to do something about it, taking a role in fighting and preventing wildfires while at the same time promoting their business and making a living.

Arborists as firefighters

“The big fires that just happened [in 2003] … opened a lot of eyes,” says Kevin Bejma, operations supervisor at California Tree Service Inc. in Southern California. “The people who were doing (wildfire prevention, usually by hiring someone to create defensible space) saved their houses and businesses.”

With six crews covering Valencia, Calif., down to Tijuana, Mexico, Bejma and his fellow arborists have seen more than their share of wildfires. More than 60 percent of their business now consists of fire prevention, compared to 20 to 30 percent before the 2003 fires.

Although California Tree Service gets requests from fire departments, municipalities and homeowners to do fire prevention work, a lot of that work isn’t far outside the scope of what many tree care companies already do – land clearing, roadside clearing, forest thinning – and often requires machinery that many tree care companies already own.

California Tree Service mulches everything they cut down, Bejma says, using various chippers as well as the Brush Bandit Beast Recycler. “It’s good organic mulch that we create,” he adds, noting that he and his coworkers will lay the chips out in piles and then spread them out using front-end loaders.

When working in residential areas, Bejma explains, he creates a fire-resistant landscape that includes replacing dangerous (dead and dry) trees with fire-resistant ones (appleblossom and cactus). He also says his crews do a lot of mowing, using deck mowers and flail mowers attached to tractors to cut down weeds around a property, creating a 200-foot buffer zone that can keep flames at bay.

“Fire prevention is just all in a day’s work now,” reports Bejma. “Every time I go out on a job, I educate the client on trees and everything else,” including how they can help protect themselves from wildfires. “I’ve given bids on jobs where people say, ‘Oh, should I do fire prevention landscaping this month or next month?’” Bejma recalls. “Their house is gone now!”

Ben Wing of Brush Busters Inc. in Forest Hill, Calif., does just what his company name implies – gets rid of brush by clearing roads and fields. Brush Busters has focused on land clearing for fire prevention since the company started three years ago.

“We create a lot of defensible space by mowing and clearing underbrush and trimming up ladder fuel,” which includes the branches in the lower 12 feet or so of a tree. “That way, if there is a grass fire coming through, it doesn’t get up under the canopies of the trees.”

Brush Busters is not a tree care company, but it is helpful to examine their fire
prevention work, especially since their equipment is often the same as that of tree care companies.

Mowing and clearing equipment operated by Wing includes ASV’s Posi-Track 4810 with an FAE forestry mower attachment as well as an FML 150 Super. A Case excavator with FAE’s UML 125 is used “for opening roads and clearing fields,” Wing says. The extended reach of the excavator is handy when working on roadsides, he continues, where “we’ve opened up areas so the brush doesn’t go right up to the roadsides.”

He also uses a KMC (Kootenay Manufacturing Co.) 260 hp brush mowing tractor with FAE’s UMM 225 mower attached. This combination can mow up to 10-inch diameter trees – a big help when making residences more resistant to wildfires, which is what most of Brush Buster’s work entails.

“When we’re doing defensible space around homes,” Wing says, “We use a Brush Bandit 150XP as well as a Bandit Beast Recycler.”

Buck Buchanan of FAE knows much of Wing’s equipment inside and out. FAE equipment grinds up material – whether you are working in the forest or alongside city streets – so that “you’re taking the machine to the material instead of trying to take the material to another area,” Buchanan explains. “It not only saves you time … but also labor, dumping and hauling costs.”

FAE equipment, which is manufactured in northern Italy under strict environmental laws, is “the way of the future in land-clearing operations. It’s more environmentally friendly to mulch material on-site,” Buchanan continues. “You put the nutrients back into the ground instead of taking them off-site and leaving the ground bare.”

FAE’s main product line for clearing includes its forestry mowers for resource recycling. Attachments are designed to work with equipment that clients already have.

“FAE is all about making an attachment that can fit the prime mover that the customer already has,” explains Buchanan. “It’s all about versatility and not having all your capital tied up in one machine that does only one thing.”

He adds, “With an adequate prime mover – 60 to 600 hp, mechanical or hydraulic – we can adapt a forestry mower … to perform the grinding action.”

For fire prevention in residential areas, FAE attachments can maneuver around landscapes as well as roadsides, especially since the machines discharge the chips out in front of the operator, instead of to the side. “This can be critical in roadside, interstate and high-residential areas,” Buchanan explains. “With this type of mower, you have more control over your debris path.”

FAE equipment that can be used for fire prevention includes the UML 125, which, when equipped with a high-flow skid steer, can knock down and mulch 6-inch
material. The small mower is versatile enough to maneuver around larger trees while still grinding the undergrowth – a source of fuel in wildfires.

Alternately, Tree Pro Progressive Resource Management of Payson, Ariz., has found a great piece of unusual equipment that helps them when it comes to clearing out pines that have been killed by the recent beetle infestation – a garbage truck. Purchased as a result of the increase in fire-prevention work following the wildfires, the rear-load compactor truck “can compact 5- or 6-to-1 ratio,” according to Shane Owens, Tree Pro president and manager. He finds it handy to use when picking up brush collected by homeowners and deposited curbside for special removal.

“The compactor is just as fast as a large capacity chipper,” Owens elaborates. “It has a feed rate equivalent to an 18-inch chipper, but no maintenance.” In addition, many municipalities are selling these trucks at a relatively low price when switching from traditional curbside pickup to side-loading garbage container systems.

Jim Ochetti, vice president of sales at Brush Technology, acknowledges that the Seppi flail and fixed-tooth mowers that he sells are useful in fire prevention by “doing the same thing mechanically that fires did years ago” – mainly clearing out the brush while “keeping the soil in place, resulting in no erosion.”

“We have equipment that will shred and cut trees and help prevent forest fires by getting the fuel down to the ground level,” says Ochetti. “With a flail mower, you don’t have things sticking up after you do the clearing – and you don’t disturb the ground.”

“Seppi has been making equipment for 30 years,” he adds, explaining that Seppi mowers range from 40 hp to 600 hp. The mowers attach to Barko or Hydro Ax hydraulic prime movers, as well as excavators.

Managing forests

Although many tree care companies, similar to California Tree Service, do their fair share of residential work, many are no stranger to forest thinning either. In fact, according to Dr. Tom Bonnicksen, professor of forest science at Texas A&M University, homeowners certainly need to protect their houses from wildfires, but the battle to squelch the flames really starts long before the blaze reaches someone’s back yard.

“We have to go beyond simply protecting our home and neighborhoods,” Bonnicksen emphasizes. “All of that is critically important and must be done, but homeowners have to realize they can take all those precautions and still lose their
homes and neighborhoods if they don’t go beyond their home and manage the forests.”

Large, thick forests are a wildfire waiting to happen, Bonnicksen stresses. “Forest fires have historically been light fires. Now, since we’ve let the forests become overgrown, fires are big.” The answer to controlling these fires, he says, is careful thinning.

Much of the equipment used in forest thinning may already be part of a tree care company’s assets. Fecon’s 200 hp machines “are built to go into the woods,” explains Mike Slattery, vice president of sales for Fecon. Fecon heads attach to most rubber-tired forestry machines, including Tigercat, Caterpillar, Franklin, Supertrak and Kershaw.

Larger track machines, such as the steel-tracked RT400 “give you lower ground pressure and an ability to climb steeper slopes,” which can be valuable in the forests, Slattery continues. In addition, Fecon mulcher attachments for excavators – which can run off the excavator’s power or off its own power pack, depending in part on the size of the excavator – can be used on steep slopes and in the mountains. Since the excavator can maneuver well, “you’re not driving back and forth, and you eliminate the potential of backing into
a tree and scarring a tree” that you want to leave standing, says Slattery.

With more than 20 Bull Hog grinders, ranging from 32-inches to 108-inches wide and 55 to 600 horsepower, Slattery assures that they “can run on just about any carrier that has the power to lift and run it.”

When it comes to forest thinning, Franklin Equipment also offers several types of heads that can mulch on the spot. “We take wood from a fuel when it is standing and turn it to a preventative measure when it’s on the forest floor,” relates Jim Keene, Franklin senior vice president. Three models range from very large to highly maneuverable on three wheels, “if you want to leave big timber standing and just do away with the underbrush,” yet still have the horsepower you need.

Keene relates that clients of his have found Franklin mulchers especially useful in taking care of the land along the Rio Grande in New Mexico, where many forest fires have started.

TimberAx, manufactured by Loftness/US Attachments, also does “an excellent job of fuel reduction in the fire prevention area,” according to owner Dave Nelson.

“We have a customer in Arizona who is using it around residential areas as a fuel reduction tool … for fire management,” Nelson relates. “The Forest Service has a recipe for chip size,” he continues, “and they really like what our machines leave on the ground after they are done shredding.”

Heidi Boyum of Jaraff Industries Inc. explains that Jaraff’s GeoBoy, coupled with a Fecon head, is being used by tree care companies that are involved in clearing out fire lanes and rights of way. “More and more tree care companies are looking into working on fire breaks,” Boyum says.

**Reacting to fires**

Although prevention is preferable when it comes to dealing with forest fires, it isn’t always the most popular, and all too often, tree care companies that deal with wildfires find themselves part of the team that is combating an out-of-control blaze. In reactive situations like these, speed is the key.

If you are interested in fighting a fire’s path, Slattery advises having horsepower – and lots of it. “When a fire has hit, and it’s really going, you need a lot more horsepower, because horsepower equates to speed of production.”

As the blaze marches on, reactive efforts may include clearing fire lines that can help slow down the blaze. A fire line is a path cut through the forest, with the width equivalent to the height of the trees being cut. For such time-sensitive tasks, Slattery says the less preferable option you have is to ‘go in there and ‘push and pile,’ the trees … uprooting and disturbing the native soil … and
disturbing the ecosystem. When the fires are over, you have to go back and rehabilitate.”

He recommends instead using a mulcher to grind on the spot, “leaving the ground intact and reducing the risk of erosion.” In addition, the mulch can help slow the fire down, although it won’t necessarily stop a fire in its tracks. “Mulch does give firefighters a period of time” to catch up with the fire and help get it under control, Texas A&M’s Bonnicksen explains.

“The chips are relatively fine fuels that will burn more like coals,” Bonnicksen continues. “The fire goes through it very fast because it’s a flash fuel,” but nevertheless, mulch chips “can sustain the fire at that site longer than it otherwise would have been.” And the finer the chips, the better, Bonnicksen concludes, noting that large chips won’t be very effective in halting a fire.

**The best fire prevention – education**

Although many tree care workers may agree that the best part of their job is handling large machinery, it is just as vital to put valuable time and resources into educating their clients, especially when it comes to wildfires.

Tree care companies can “do a great service to the public by using each and every one of these occasions (when performing residential tree work) to educate people” on the reality of how wildfires work, Bonnicksen emphasizes. Although forest managers are the ones who may ultimately decide if a tree care company can go in and make the woods less susceptible to wildfires, arborists who help raise public awareness also encourage such forest management practices.

“Space around homes must be managed properly,” agrees Bonnicksen, “... but to assume that alone solves the problem is dangerous.” We must all, he says, do more to manage the brush lands and forests.

Without a doubt, tree care companies can play a key role in hindering wildfires. Arborists can take their tree knowledge and apply it to forests as well as to clients’ backyards, helping save the trees that are so valuable in so many ways.

Ariana Zora Ziminsky is a former assistant editor of Tree Care Industry magazine.

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Brea, Calif.
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Ecological Landscaping Association Winter Conference & Eco-Marketplace
Boxborough Woods Holiday Inn
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Contact: ELA (617) 436-5838, or Laura Reed, NEWFS, (508) 877-7630 Ext. 3303

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**March 2-5, 2004**
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Contact: Kristen Simpson, (330) 666-3450, ksimpson@urdacompany.com

**March 3-5, 2004**
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Novi, Mich.
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**March 4-5, 2004**
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Contact: (530) 892-1118, www.wcisa.net

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ISA Annual Conference & Trade Show
Pittsburgh, Pa.
Contact: Jessica Marx, (217) 355-9411, ext.24
jmarx@isa-arbor.com, www.isa-arbor.com

Sept. 15-17, 2004
Texans for Trees
ISAT/TUFC Annual Convention
Round Rock, Texas
Contact: Mike Walterscheidt (512) 281-4833

September 22-23, 2004
Multi-State Plant Materials Conference
Stillwater, Okla.
Contact Mike Schnelle, (405) 744-7361 or
mas@okstate.edu

October 8-9, 2004
Nursery/Greenhouse Trade Show and Convention
Cox Convention Center, Oklahoma City, Okla.
Contact Mike Schnelle, (405) 744-7361 or
mas@okstate.edu

October 20-21, 2004
Garden Expo
Canada’s Fall Buying Show for the Green Industry
Toronto Congress Centre, Toronto, Canada
Contact: Landscape Ontario Horticultural Trade Assoc.,
(905) 875-1805; fax: (905) 875-3942;
showinfo@landscapeontario.com

October 28-30, 2004
TCI EXPO 2004
Tree Care Industry Association
COBO Conference/Exhibition Center
Detroit, Mich.
Contact: Carol Crossland, 1-800-733-2622, Ext. 106;
crossland@treecareindustry.org
or www.treecareindustry.org

November 3, 2004
Tree Care Issues Workshop
Stillwater, Okla.
Contact Mike Schnelle, (405) 744-7361 or
mas@okstate.edu

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Can Insecticides Fell Emerald Ash Borer?

Evaluation of Insecticides to Control Emerald Ash Borer Adults and Larvae - Summary of Research Conducted in 2003

By Deborah G. McCullough and David R. Smitley

Objectives

We evaluated widely available insecticide products and application methods to assess their effectiveness in controlling emerald ash borer (Agrilus planipennis Fairmaire) (EAB).

Our objectives were to:

- Evaluate the ability of insecticides to control EAB adults.
- Evaluate the ability of insecticides to control EAB larvae.
- Assess persistence of insecticides over time.

We caged adult beetles with leaves from treated and untreated (control) trees for 8-day bioassays to compare survival and leaf consumption. The bioassays were repeated at 2- to 3-week intervals in June and July using foliage collected from the trees at Kensington Golf Course (see below).

In addition, we measured concentrations of imidacloprid in xylem sap collected from the trees at the Kensington Golf Course site (using a method called ELISA analysis) at 2- to 3-week intervals in June and July.

Study Sites

Results of research conducted in 2002 showed that poor translocation in heavily infested trees limited the effectiveness of trunk-injected insecticides. In 2003, therefore, our insecticide research was conducted in sites with low to moderate EAB densities located in Washtenaw and Livingston counties. Exit holes and woodpecker holes occurred on at least a few trees at each site, but were not common. The ash trees we used at these sites were relatively healthy with 0 to 20 percent dieback (except for the St. Joe site where effects of dieback were part of the study). We selected trees of similar size and condition at each site and randomly
EMERALD ASH BORER & “IMICIDE” & “INJECT-A-CIDE B”

THE MICHIGAN STATE UNIVERSITY
2003 RESEARCH TRIAL RESULTS
FOR THE COMPLETE STUDY VISIT THE MSU WEB SITE
“www.emeraldashborer.info/treatment.cfm”

Average Control Percent of E.A.B. Larvae comparison of 3 sites
IMICIDE 10% Control 77.4%
POINTER 12% 35%

Adult Beetles 10% Control
IMICIDE 10%
POINTER 12%
INJECT-A-CIDE B 23 Days Post Treatment
IMIDACLOPRID Peak Levels Residue
55 ppb
37 ppb

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assigned trees to be part of an insecticide treatment group or to be left as untreated controls. There were six to 12 trees per treatment at each site. All insecticide applications were made under nearly ideal conditions (i.e., good soil moisture, sunny weather, active transpiration). We sampled a total of 234 trees to assess control of EAB larvae (Table 1). Trees at two sites, Forsythe and Dartmoor, have not yet been destructively sampled to quantify EAB larval density. These trees were injected with imidacloprid and will be sampled in 2004 to determine if EAB control persists for two years. Trees at the St. Joe site were used to assess relationships between canopy condition and effectiveness of trunk-injected imidacloprid. Analysis of these data is in progress.

Table 1. Tree diameter (measured at 1.4 m aboveground) and number of trees in EAB insecticide studies in 2003.

<table>
<thead>
<tr>
<th>Study Sites</th>
<th>Average tree diameter</th>
<th>No. trees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airport – East</td>
<td>3.9 inch–10.0 cm</td>
<td>36</td>
</tr>
<tr>
<td>Airport – West</td>
<td>4.4 inch–11.2 cm</td>
<td>50</td>
</tr>
<tr>
<td>Huron Hills GC</td>
<td>16.0 inch–40.6 cm</td>
<td>36</td>
</tr>
<tr>
<td>Law/Lands Park</td>
<td>13.8 inch–35.0 cm</td>
<td>30</td>
</tr>
<tr>
<td>Kensington GC</td>
<td>13.0 inch–32.9 cm</td>
<td>82</td>
</tr>
<tr>
<td>Forsythe</td>
<td>5.7 inch–14.5 cm</td>
<td>2-year control</td>
</tr>
<tr>
<td>Dartmoor</td>
<td>16.6 inch–42.1 cm</td>
<td>2-year control</td>
</tr>
<tr>
<td>St. Joe hospital</td>
<td>7.9 inch–20.0 cm</td>
<td>dieback analysis</td>
</tr>
</tbody>
</table>
Products and Application Methods

Below is a summary of the insecticide products and application methods that we tested in 2003. We also identify some advantages and disadvantages that we associate with specific products or application methods.

Soil injection - Imidacloprid
Merit 75 WP

Applied: April 15-17.
Rate: 1.42 g AI per inch dbh (diameter at breast height, measured 1.4 m aboveground)
Injected in circular pattern around base of tree and again halfway to the dripline.
Minimum of four injection points in each circle per tree.
High pressure injection at 80 to 100 PSI.
Kioritz set to 5 ml per stroke.

Pros:
- Relatively quick to apply.
- No wounding or injury to tree.
- Little exposure for applicators.
- Relatively low toxicity to humans, birds and some groups of non-target insects (e.g., caterpillars).
- No drift problems.
- Little impact on non-target insects or other organisms that do not feed on ash.

Cons:
- Must be applied 4 to 8 weeks before EAB are active to assure uptake by roots and translocation through tree.
- Translocation may be poor if trees are unhealthy or were heavily injured in previous years.
- Adequate soil moisture and transpiration are needed for good uptake.

Trunk injection - Imidacloprid
Imicide

3 ml Mauget capsules (10 percent AI).
Number of capsules injected — dbh divided by 2.
Trunk injection – Imidacloprid


1 ml injection with a Wedgle (using wedge-checks) (12 percent AI)

One injection for every 4 inches of circumference (based on trunk circumference at 1.4 m).

Pros:

- Trunk-injected imidacloprid presents little risk of exposure for applicators.
- Relatively low toxicity to humans, birds and some groups of non-target insects (e.g., caterpillars).
- No drift problems.
- Little impact on non-target insects or other organisms that do not feed on ash.
- Mauget: passive uptake of imidacloprid from capsules may limit injury to tree.
- Wedgle: injections can be done relatively quickly regardless of weather or tree condition.

Cons:

- Trunk injections of imidacloprid should occur 2 to 4 weeks before EAB are active to assure translocation through tree.
- Some minor wounding associated with injections or drilling through bark; long-term effects of annual applications on tree health are not clear.
- Rate of uptake varies, depending on soil moisture and leaf transpiration rate.
- Translocation of insecticide through the tree may be poor if trees are unhealthy or were heavily injured in previous years.
Trunk injection - Bidrin (dicrotophos) Injecticide-B

Applied June 2 or July 14 or September 5.

2 ml Mauget capsules (82 percent AI).

Number of capsules injected – dbh divided by 2.

Pros:

- Passive uptake from capsules may limit injury to tree.
- Bidrin translocated much more rapidly through tree than imidacloprid.
- Little exposure for applicators or residents.
- No drift problems.
- Little impact on non-target insects or other organisms that do not feed on ash.
- Some minor wounding associated with injections or drilling through bark, but long-term effects of

Cons:

- Bidrin is highly toxic to humans, birds and other organisms.
- Applicator must remain with injected tree until capsules are removed.
- Rate of uptake varies, depending on soil moisture and leaf transpiration rate.

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### PRELIMINARY DATA

Table 2. Mean (± SE) number of EAB larvae per m² in samples taken on the trunk and branches of control (untreated) trees and trees treated with an insecticide at each site. The standard error of the mean (SE) is a measure of variability within the treatment and the sample size. It is shown below the average value in each cell. A low standard error indicates that EAB density was similar on the trees in the specific treatment.

<table>
<thead>
<tr>
<th>Study site</th>
<th>Imidacloprid</th>
<th>Injecticide-B</th>
<th>Tempo</th>
<th>Ornix</th>
<th>Sevin</th>
<th>Orthene</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>Hi Pres</td>
<td>Koornz</td>
<td>1x</td>
<td>2x</td>
<td>1x</td>
<td>2x</td>
</tr>
<tr>
<td>AA-East</td>
<td>37.3 ± 9.55</td>
<td>11.2 ± 3.56</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AA-West</td>
<td>12.7 ± 5.1</td>
<td>6.85 ± 1.47</td>
<td>1.5</td>
<td>1.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Huron Hills</td>
<td>49.8 ± 13.2</td>
<td>20.2 ± 11.9</td>
<td>46.6</td>
<td>55.1</td>
<td>61.2</td>
<td>49.5</td>
</tr>
<tr>
<td>Law/Lands</td>
<td>16.3 ± 5.42</td>
<td>0.7 ± 0.32</td>
<td>7.6</td>
<td>4.4</td>
<td>7.6</td>
<td>4.4</td>
</tr>
<tr>
<td>Kems GC</td>
<td>42.9 ± 13.2</td>
<td>9.7 ± 3.71</td>
<td>17.5</td>
<td>8.8</td>
<td>10.0</td>
<td>5.2</td>
</tr>
</tbody>
</table>

Table 3. Average percent control of EAB larvae by treatment. Percent control is based on the number of EAB larvae per m² in treated trees compared with control trees at each site. For example, 59.8 at AA-West means that there were 59.8 percent fewer larvae in the trees treated with Imidacloprid than in the control trees at the AA-West site. Relatively high values indicate good control.

<table>
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<tr>
<th>Study site</th>
<th>Imidacloprid</th>
<th>Injecticide-B</th>
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</tr>
<tr>
<td>AA-East</td>
<td>70.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AA-West</td>
<td>59.8</td>
<td></td>
<td>88.4</td>
<td>91.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Huron Hills</td>
<td>59.4</td>
<td>6.5</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Law/Lands</td>
<td>95.7</td>
<td>39.3</td>
<td>53.4</td>
<td>73.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kems GC</td>
<td>77.0</td>
<td>59.2</td>
<td>79.6</td>
<td>76.8</td>
<td>85.6</td>
<td>33.3</td>
</tr>
</tbody>
</table>

1 Half the trees were sprayed only on May 30 (1x); the other trees were sprayed on May 30 and again on July 2 (2x).

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<td>33.3</td>
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1 Half the trees were sprayed only on May 30 (1x); the other trees were sprayed on May 30 and again on July 2 (2x).

---

**Chemical/formulation**

<table>
<thead>
<tr>
<th>Chemical/formulation</th>
<th>Common name</th>
<th>Concentration in finished spray</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tempo 20WP</td>
<td>(cyfluthrin)</td>
<td>10.8 g AI/100 gal</td>
</tr>
<tr>
<td>Onyx of Biflex (2 lb AI/gal)</td>
<td>(bifenthrin)</td>
<td>0.5 lb AI/100 gal</td>
</tr>
<tr>
<td>Sevin SL (4 lb AI/gal)</td>
<td>(carbamate)</td>
<td>8 lbs AI/100 gal (bark beetle rate)</td>
</tr>
<tr>
<td>Orthene 97 (wettable granule)</td>
<td>(acephate)</td>
<td>1 lb AI/100 gal</td>
</tr>
</tbody>
</table>
annual applications on tree health are not clear.

- Translocation of insecticide through the tree may be poor if trees are unhealthy or were heavily injured in previous years.
- May not persist as long as imidacloprid.

Bark and foliage cover sprays

Half of our study trees were sprayed once on May 30; the other trees were sprayed on May 30 and again on July 2. Trees were sprayed until bark and foliage were wet.

Pros:

- Relatively quick to apply if weather conditions are appropriate.
- No wounds or injury to tree.
- Insecticide is effective immediately – no translocation necessary.
- May be most effective means to protect low vigor or previously injured trees in which translocation of injected insecticides is likely to be poor.

Cons:

- Foliage and trunk sprays will have no effect on larvae that are already under the bark.
- Drift, applicator and homeowner exposure and related issues can be a concern.
- Application near open water may be prohibited.
- Thorough coverage of large trees can be difficult.
- Products will be toxic to beneficial and non-target insects that contact or feed on treated leaves or bark.
Preliminary Results

EAB Phenology in 2003

Adult EAB beetles were first observed on June 4-6.

Peak adult beetle activity occurred during the last week of June and first week of July.

Last observation of a live EAB adult was on August 15.

Larval galleries were first observed in late July.

Imidacloprid Concentrations - ELISA Analysis

ELISA analysis was used to measure relative levels of imidacloprid in xylem sap from shoots collected at 2- to 3-week intervals from the canopy of ash trees at Kensington Golf Course. Trees treated with high-pressure soil or trunk injections had similar levels of imidacloprid in the canopy by early June. On June 3, imidacloprid concentrations averaged 47 ppb for trees treated by high-pressure soil injected Merit, 43 ppb for trees treated with Imicide and 33 ppb for trees treated with Pointer.

Imidacloprid concentrations peaked on June 12 for Imicide trees (55 ppb) and on June 24 for trees treated with high-pressure soil-injected Merit (69 ppb) and Pointer (37 ppb).

Imidacloprid concentration in xylem sap dropped substantially from mid-June to late July when larval feeding began. By July 31, imidacloprid concentration averaged 4 ppb, 8 ppb and 14 ppb in trees treated with Pointer, Imicide and soil-injected Merit, respectively. This may, however, reflect translocation of imidacloprid out of xylem sap and into phloem or other tissues. Results of additional GC/HPLC analysis that are underway at the Agricultural Research Service laboratory may help to address this issue.

Adult Control — Bioassays

Bidrin (Insecticide-B) was highly effective for adult EAB control for more than 4 weeks after injection. For example, in the June 25 bioassay (23 days postinjection), 100 percent of the beetles that consumed foliage from Bidrin-treated trees had died after 5 days. Relatively high human toxicity and concerns about potential impacts on non-target organisms, however, may limit the widespread use of Bidrin.

Imidacloprid was not highly toxic to adult beetles. By day 5 of the June 25 bioassay (when imidacloprid concentrations were at peak levels), only 17 to 23 percent of beetles that were caged on foliage from trees treated with Pointer, Imicide or soil injected Merit had died. Imidacloprid did, however, reduce beetle feeding, and beetle mortality on treated trees was higher than control trees by day 8. In the field, we do not yet know whether adult beetles that feed on trees treated with imidacloprid generally die or recover and continue to lay eggs. Beetles that ingest a sublethal dose might also be repelled from treated trees and more likely to oviposit on untreated trees.

The concentrations of Bidrin and imidacloprid needed to control EAB...
adults (and larvae) are not yet known.

Bark and foliage sprays effectively controlled adults for at least 2 to 3 weeks. Two applications will likely be needed to protect trees during the adult flight period that runs from early June through early to mid-August. Thorough coverage will be important.

**Larval Control (see Tables 2 and 3)**

High-pressure soil injections of Merit provided 88 percent control of EAB larvae in small trees at the AA-West site and 86 percent control in medium to large trees at the Kensington Golf Course site but provided no control at the Huron Hills Golf Course. The Huron Hills site included some of the largest trees in our study, and EAB density was relatively high in this area (49.8 larvae/m² in control trees). Imidacloprid levels in these trees may have simply been too low to affect ovipositing adults or larvae. The Kioritz injector provided good control in the small trees at AA-West (92 percent) but poor control in the larger trees at Kensington Golf Course (33 percent).

Imicide (trunk injection with Mauget capsules) reduced EAB density by roughly 60 to 96 percent in all sites. The highest control (96 percent) occurred at the Law/Lands site where EAB density was relatively low (16.3 larvae/m²).

Control in trees treated with Pointer (trunk-injection with Wedgle) ranged from roughly 6 to 60 percent. Control was poorest in the large trees at Huron Hills (6 percent) and relatively low at the Law/Lands site (39 percent).

Injections of Bidrin in early June produced variable results. Larval density was reduced by only 53 percent at the Lans/Lawton site but Bidrin provided good control at the Kensington site (80 percent). Injections in mid-July and early September provided 82 and 77 percent control, respectively.

Two applications of Tempo, Onyx and Sevin provided consistently high levels of control (82 to 97 percent) regardless of tree size or EAB population density. Even a single application of Onyx (a new product similar to Talstar) provided good control at the two sites where it was tested. These insecticides may affect both ovipositing adults and newly hatched larvae that must chew through treated bark to reach the cambium and phloem tissue.

Evaluation of relationships
Factors such as weather, other job demands and availability of labor can affect selection of control methods. Timing of soil injections, trunk injections and cover sprays and the costs associated with each product vary considerably. Some control strategies may be easier than others to integrate with other professional activities.

**Continuing Work**

We expect to continue research on insecticides for EAB control, as well as other EAB-related projects related to EAB biology, host range, host resistance and dispersal. Scientists from the USDA APHIS and other universities and agencies also have emerald ash borer (EAB) research underway. New research results will continue to be provided as they become available. Check the multi-agency EAB Web site at www.emeraldashborer.info periodically for up-to-date information.

Deborah G. McCullough is a member of the departments of Entomology and Forestry, and David R. Smitley is a member of the department of Entomology, both at Michigan State University. In cooperation with: David Cappaert, Dept. of Entomology, Michigan State University; Therese Poland, Debbie Miller & Leah Bauer, USDA Forest Service, North Central Research Station; Phil Lewis and John Molongowski, USDA Animal and Plant Health Inspection Service (APHIS).

**Acknowledgements**

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Four years experience in the direction and supervision of tree planting, maintenance and removal operations.

EDUCATION/TRAINING:
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DESIRED:
Possession of a Pest Control Advisor (PCA) license from the State of California.

NOTE:
An equivalent combination of experience, education and/or training may substitute for the listed minimum requirements. Licenses Required: California Class 3 or C driver's license AND possession and maintenance of “Certified Arborist” designation with the International Society of Arboriculture (ISA). The provisions of this announcement do not constitute an express or implied contract. For more details, call (818) 548-2110 or visit www.ci.glendale.ca.us for online application.

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POSITION: Urban Forester (Park Maintenance Superintendent) is a management level position responsible for administering and supervising the work of the City Tree Services Section of the Parks and Recreation Department.

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OSHA Steps Up Intervention for Tree Care

The Occupational Safety and Health Administration has tree care under its microscope. In Federal OSHA’s Strategic Management Plan for 2003-2008, they establish a specific target of reducing fatalities in “Landscaping/horticultural services” by 4 percent in FY 2003-'04.

In order to draw this scrutiny and action, tree care had to earn itself a spot among the top seven “high incident/high severity” industries.

Employers of all sizes in OSHA Region 8 (Colorado, Montana, North and South Dakota) face particular scrutiny from a regional emphasis program for targeting inspections at tree-trimming operations.

Elsewhere in the nation, specific tree care employers are being targeted for inspection under a site-specific targeting (SST-03) initiative.

Background & Statistics

More than 1,000 investigations have taken place since 1993 in the landscape and horticultural services industry. Of those, 426 were related to fatalities. After reviewing the data on the hazardous event that caused the fatalities or serious injuries to those working in the tree trimming industry, a trend of hazardous events was apparent. The top events causing death or serious injury to tree trimmers are falls from trees or equipment, being struck by trees or limbs and electrocution due to contact with power lines.

In addition to the elevated fatality numbers, according to the Bureau of Labor Statistics (BLS) injury and illness data, the landscape and horticultural services industry has a higher injury and illness incidence rate per 100 employees than the average in private industry. In 2001, the injury and illness rate for the targeted industry was 7.0 compared to 5.7 for all of private industry. One has to keep in mind that OSHA and BLS are only able to gather data for those firms required to report it. Significantly for the tree care industry, firms with 10 or fewer employees are not required to report and thus are not part of this statistic.

The SST-03 program is guided by the 2002 OSHA Data Initiative (ODI) that collected 2001 injury and illness data. Approximately 95,000 establishments were surveyed in 2001, and only establishments with 40 or more employees were included.

According to the 2002 ODI, the national average “lost work day illness and injury” (LWDII) rate for private industry was 2.8, and the “days away from work illness and injury” (DAFWII) case rate was 1.7. [See the sidebar for an explanation of how these statistics are calculated.]

The SST-03 plan initially opts for inspecting all worksites with a LWDII rate at or above 14.0, or a DAFWII case rate at or above 9.0. Only one of these criteria must be met.

Other considerations

Not only does the tree care/landscape industry have elevated fatalities and injury and illness rates, but it also fits the profile of unique workplaces, where OSHA is trying to make positive impact. Establishments tend to employ non-English speaking workers. Because they do not work at a fixed establishment, the tree care workforce is hard to reach. Because of the language barrier and the mobility of employees, training for on-the-job hazards and protection is often difficult and not provided. Injury and illness and fatality rates among non-English speaking employees are increasing.

Typically, there are other factors that thwart a company’s efforts to stay safe. Tree care is plagued by very high employee turnover. When coupled with inadequate supervision – another of this industry’s weaknesses – inexperience can translate to accidents. The typical small business, which describes most of tree care, lags behind larger employers in implementing comprehensive safety programs. Even something as fundamental to safety as a drug-free workplace policy can be a challenge to the overextended manager wearing many hats.

Where to get help

For private sector tree care employers, the most logical place to turn for safety and compliance assistance is the trade association for commercial tree care – TCIA. This is not a shameless plug; it is a statement of fact. Beyond simply offering programs to help educate management or train field employees, TCIA offers consultation to the individual company owner that can maximize the effectiveness of any effort to prevent accidents and their associated costs, as well as stay in compliance.

Another alternative is to arrange for consultation from the Consultative Services division of your local or regional OSHA office. Problems that turn up as the result of a consultation must get fixed, but
Unlike a visit from enforcement, no fines are issued.

As part of its alliance with federal OSHA, TCIA and its OSHA partners developed tree industry-specific Web content to guide safety and compliance efforts. To access this information, visit www.osha.gov and type the words “tree care” in the search field. You will find a wealth of information and resources.

Speaking of safety management tools on the Web, OSHA recently announced the availability of two new online compliance assistance tools – Quick Start and MyOSHA. Quick Start is a step-by-step guide to help users identify major OSHA requirements and guidance materials, and MyOSHA is a tool to create a personalized Web page of links to OSHA online resources.

Quick Start is a new tool on OSHA’s Compliance Assistance Web page designed to help businesses get started learning about OSHA’s standards and compliance assistance resources. The tool provides step-by-step guidance on how to identify OSHA requirements and guidance materials that may apply to specific workplaces.

Quick Start includes a module for workplaces, such as tree care, that are subject to OSHA’s general industry standards. The general industry module reviews OSHA’s recordkeeping and reporting requirements, provides links to compliance assistance resources and key standards, and includes information for developing a comprehensive safety and health program. It also includes a library that lists a collection of forms, fact sheets, publications, OSHA Web pages and electronic tools, and sample programs.

Visitors to OSHA’s homepage also can visit the new MyOSHA Web personalization feature and sign up to create a personalized Web page of links to OSHA online resources. Users can customize the content of their personalized pages by choosing links from categories that include “Industry,” “Safety and Health Topics,” “What’s New,” “Audiences,” “Publications,” “Laws and Regulations,” “Strategic Management Plan Areas of Emphasis” and “Working with OSHA.”

Users can create a MyFavorites Category with links to any OSHA Web page (except PDF documents) by clicking on the MyOSHA icon that appears at the top every OSHA Web page and selecting the “Add to MyOSHA” page link. They also can customize the background color and page layout.

MyOSHA features a tutorial to introduce new visitors to the tool. The site includes randomly rotating “e-Tips” to educate users about OSHA and the agency’s Web site. The e-Tips will appear at the top of the user’s personalized page and will change each time the user accesses their MyOSHA page. Both Quick Start and MyOSHA currently are featured in the “In Focus” box on the OSHA home page, www.osha.gov.

Peter Gerstenberger is TCIA’s senior advisor for safety, compliance & standards.

Calculating OSHA injury and illness data

For both the “lost work day illness and injury” (LWDII) and “days away from work illness and injury” (DAFWII) statistics, 200,000 is used as the base number of hours worked for 100 full-time equivalent workers in a year, and both rely on knowing the total hours worked by employees for the year. If the hours worked are not known, they can be estimated by multiplying the average number of full-time employees by 2,000.

TIP: Either statistic can be calculated for a period of time shorter than one year - say one month or one quarter - by simply reducing the base hours worked figure accordingly.

DAFWII Case Rate: The number of cases that involve days away from work per 100 full-time equivalent employees. Cases that involve only temporary transfers to another job or restricted work are not included.

For example: Employees (including management, temporary and leased workers) of ABC Tree Company worked 45,268 hours. There were three injury and illness cases involving days away from work. The DAFWII case rate would be (3 ÷ 45,268) x (200,000) = 13.25.

LWDII Rate: This includes cases involving days away from work and restricted work activity and is calculated based on (N + EH) x (200,000) where N is the number of lost workday injuries and illnesses combined, EH is the total number of hours worked by all workers during the calendar year.

For example: Employees at XYZ Tree & Stump worked 64,508 hours in a year. There were three lost workday injuries and illnesses in that period. The LWDII rate would be (3 + 64,508) x (200,000) = 9.3.
TCIA can only continue its work on behalf of the membership with the help of a sea of volunteers. Once a year we have the chance to select someone for special recognition. The Pat Felix Volunteer of the Year Award is presented annually to a TCIA member volunteer who has gone above and beyond the call of duty as a volunteer, committing a great deal of time and effort toward the success of TCIA and what it offers to our members.

This year, we selected Joe Tommasi, who has given five years of leadership service to the TCIA Safety Committee in the Vice Chair and Chair’s role. Joe’s tireless work affects every single company every day. He has provided contacts and leads to other professionals throughout the country who have in turn helped us make progress in multiple areas of our work.

With more than 30 years of experience in the tree care industry, Joe has volunteered in many capacities in TCIA and other professional organizations, and has been active in the Z-133 and A-300 standard writing for our industry. Recognized as a leader by his colleagues in the area of Safety, we are proud to present Joe with the 2003 Pat Felix Volunteer of the Year Award.

Association Health Plans

In his January State of the Union address, President Bush urged Congress to approve Association Health Plans. We agree. What are AHPs?

Legislation has been introduced that would allow associations to offer health benefits to their members and their members’ employees across state lines. The association sponsored-healthcare provision provides patient protection by offering access to affordable health care options, which includes, but is not limited to offering immediate 100 percent health insurance deductibility for the self-employed as well as strengthening and expanding the availability of association health plans to small business owners.

On Nov. 5 last year, Senator Jim Talent (R-Mo.) issued a press release that applauded President Bush’s six-point economic plan, which includes health care legislation. Talent is co-sponsor of a Senate measure to create Association Health Plans (AHPs). President Bush outlined the six-point agenda in a recent speech on the economy where he urged Congress to take action on AHPs, medical liability and class-action reform, regulatory relief, trade legislation that helps open up new markets for our agriculture producers, permanent tax relief and a comprehensive energy bill.

This legislation could pave the way to allow small businesses represented by a trade association to compete with larger employers’ health care benefits. We urge you to contact your US Senator and ask him/her to support what was originally introduced as H.R.660, the Small Business Health Fairness Act of 2003, as Congress takes up work on this bill in 2004.
PACT partners head to St. Thomas

PACT (Partners Advancing Commercial Tree Care) participants are visionary Associate Member firms (manufacturers, distributors and service providers).

They assist TCIA in pursuing its strategic direction in partnership for educational, award and activity programs that promote professional interaction with other members of our communities.

Partnership opportunities still exist for year 2004 in the following areas: Excellence in Arboriculture; TCI EXPO Spring; TCI EXPO 2004; Student Career Days; and Safety & Education programs.

Call Sachin Mohan at (516) 625-1613 to discuss your partnership options.

TCIA wishes to thank the following PACT partnership member companies that have already come forward and pledged their support for Winter Management Conference 2004 in St. Thomas: Bandit Industries, Inc.; Buckingham Manufacturing, Inc.; The Hartford; J.J. Mauget Co.; and Morbark, Inc.

Winter Management Conference 2004 hosted by TCIA.
Join us for the first ever outdoor demo day!
The site is called CalExpo and it is 350 beautifully landscaped acres with 18 venues. It is the facility of choice for event planners worldwide. Home of the California State Fair and the CalExpo Speedway and Rodeo Arena, the site has been selected to host the Outdoor Product Demonstrations and Educational Exhibits that will take place on Saturday, March 27, 2004, in conjunction with TCI EXPO Spring.

Vendors who exhibit inside the Sacramento Convention Center on Thursday & Friday may opt to participate, and can run equipment that could not be operated inside.

Don’t miss the opportunity to discuss products and services directly with buyers in an informative, hands-on, live demo format. Attendees will make purchasing decisions with 100 percent confidence as they learn more about your products by seeing them in operation. Free barbeque lunch will be provided for registered attendees and exhibitors.

“We plan on taking advantage of the opportunity to give ‘test drives’ at the outdoor day. We’re mailing invitations to our prospects.”

Mr. Mick Gifford
National Accounts Sales Manager
Morbark, Inc.
Frequently asked questions on TCIA Accreditation

Q. Can anyone apply for TCIA Accreditation?
A. Any commercial tree care company in the United States can apply for accreditation. There will be different rates for TCIA-members and non members. See the TCIA Accreditation Pilot Program application form.

Q. How will the program be marketed?
A. There will be many marketing initiatives. There will be a Web page, search engine, a logo, and complete marketing kits given to companies that complete accreditation.

Q. Logo? Will this be different than the TCIA-member logo?
A. Yes, this will be a new, distinct logo for consumers to identify accredited companies.

Q. Will accreditation work for a small company, too?
A. Yes, the program was tested with small companies. Cost of the program is related to company size. In fact, each company production facility will be accredited to assure quality.

Q. I’ve sent the accreditation outline but what happens when our company enrolls?
A. You will receive an Accreditation program CD. The CD contains information on how to complete the program and how TCIA can help you.

Q. How can TCIA help our company complete the process and improve our business?
A. The Accreditation program is designed to be not only a credential that sets your business apart, but also a helpful process that takes a look and your company and offers helpful suggestions. TCIA will help you meet any portion of the program with which your company needs help.

Call for nominations for board of directors

Nominations are now being accepted for the 2005-2006 TCIA Board of Directors. Members wishing to nominate candidates should fill out the “Candidate for TCIA Board of Directors Nominator Form.” This form was mailed to all members in January and may also be downloaded at www.treecareindustry.org.

One change this year – candidates for the board NO LONGER need to be a “principal or corporate officer” of a TCIA member company to qualify. Those submitting nominations must also contact the candidate to ensure the candidate is willing to serve.
The Hartford, TCIA Partner on Hazard Tree Removal

The Hartford continued its push for safety in the tree care industry in January with its agreement to become a PACT partner for TCIA’s development of a “Hazard Tree” training program, an investment of $15,000.

“We’ve always supported NAA/TCIA because we believe in their strategy and focus on safety and loss prevention,” says Mike Rook, account executive for The Hartford.

Fourteen years ago, the TCIA (then NAA) member insurance program began with The Hartford as the insurance provider. Two years later the association began a direct relationship with The Hartford that continues today.

“And because of their relationship, they’ve had a big interest in safety,” says Peter Gerstenberger, TCIA’s senior advisor for safety, compliance & standards.

The new “Hazard Tree: Risk Assessment & Mitigation for Tree Workers” training program consists of a DVD that opens with a presentation at TCI EXPO by Dr. Tom Smiley and Joe Bones of the F.A. Bartlett Tree Expert Company. That presentation is followed by a case study depicting risk mitigation techniques during the removal of a very hazardous, lighting-struck white pine.

“It combines the visual impact of video training with the interactivity of DVD,” explains Gerstenberger.

The Hazard Tree training DVD will be organized into chapters. The viewer will be able to select from a menu to access the chapters needed. Training thus becomes interactive as well as highly tailored to the arborist’s needs. The DVD will play on television, computer DVD players.

Support for the Hazard Tree DVD is part of a specialty program that The Hartford began back in 1992, and supports a current push for increased safety practices in the industry being championed by TCIA. The Hartford is eager to be a partner in that effort, says Rook.

“If companies that we’re insuring, or want to insure, participate in the safety program and watch the video, hopefully that will lead to fewer losses,” says Rook.

The Hazard Tree training DVD is part of TCIA’s PACT (Partners Advancing Commercial Tree Care) program, through which manufacturers, distributors and service providers partner with TCIA for educational, award and activity programs that promote professional interaction with other members of the industry.

“Hartford has had a partnership with TCIA on many levels to deliver a stronger safety message in the industry,” notes Gerstenberger. “They’ve written articles for us, they have provided us with loss data and analysis and assistance with various projects – large and small.”

Among those projects are TCIA’s pocket guides, a series of pocket-size informational booklets that address the leading causes of workplace accidents in the tree care industry and ways to prevent them. The booklets are available in both English and Spanish.

“The Hazard Tree program is just the latest example of their benevolence to the association and interest in safety,” says Gerstenberger.

“We want our name to be synonymous with safety in the industry and preventing loss in the business,” says Rook. “And when people think about protecting their businesses, their assets, hopefully they’re going to think about The Hartford.”

Although it is no longer in the workers’ compensation insurance market, The Hartford, through its specialty programs, continues to provide all lines of property and casualty insurance to the tree care industry. Founded in 1810, The Hartford Financial Services Group Inc. is one of the largest investment and insurance companies in the United States. The corporate headquarters is located in Hartford, Conn.

Kudos to those working on root systems ‘continuum’

This is great! I just finished reading the article on efforts to establish guidelines for dealing with tree root systems along “the continuum.” [“The Root of the Matter,” TCI January 2004] I am tempted to say, “it’s about time” but instead let me commend you for publishing the effort, and to those involved in working out the details — I salute you! I realize the process will be difficult but can result in a legacy of immeasurable benefit. I can think of no other single aspect of the care of trees that will have such a significant impact on the success of tree growth in the future. Any areas that lack sufficient research to write these guidelines should be given the highest priority by the TreeFund’s grant programs.

George Bell, PHC coordinator
Bob Ray Co. Inc.
Louisville, Ky.

Put your lichens here - please!

I read Dr. Shigo’s article on lichens [“What Arborists Need to Know About Lichens,” TCI December 2003] with interest. We see a bit of Spanish moss, Ball moss and lichens on trees down here. I even get a few calls from clients who want us to place Spanish moss in their trees to lend an aura of the swamp to their property. But, we do get some cases of crown thinning in Live oaks and Pecans associated with heavy growth of lichens on the small twigs. Lichens can produce acids and other chemicals that have the effect of thinning the leafy growth on
trees. This benefits the lichens with increased sunlight. Over the years, we have treated these trees by spraying a mixture of dormant oil and copper hydroxide to knock the lichens back a bit. The trees leaf out stronger the following season and the effect lasts for a few years.

Adrian S. Juttner,  
Adrian’s Tree Service Inc.  
New Orleans, La.

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### Sending a good message on drop crotch pruning

It was good to see the article “The Case Against Drop Crotch Pruning” by Cass Turnbull in the November 2003 issue. This ill-advised practice is being promoted in articles and seminars, but looks to me to be the same as topping, just with finesse. I think arborists are getting mixed messages about proper pruning and I hope you continue to sort this out in your publication.

Tina Cohen,  
Certified Arborist #PN0245

Send letters to:  
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Manchester, NH 03103  
or staruk@treecareindustry.org

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From the Field

Cruiser Was a Logger’s Dog

By Bob Smalser

“Cruiser” was undoubtedly a logger’s dog, and a tough-looking bulldog at that.

His grave marker was painstakingly hand-carved from a fine plank of old-growth western red cedar. Originally whitewashed and with pine tar on back and bottom, we found it on our Back 40 some years ago next to a rotting, old-growth Douglas fir stump, set neatly in the ground at the head of a small depression in the forest floor. For a logger of that era, that marker must have taken a literal “month of Sundays” to carve.

We don’t know who Cruiser’s master was. He likely worked for the McCormick Logging Company, which logged this virgin land from 1920 to 1936, based out of nearby Camp Union. He was probably a Scandinavian who moved west with McCormick and other men of his trade from Wisconsin. I suspect he was a faller – and a faller from the backbreaking days of long-handled, light falling axes, springboards, “misery whips” and steam donkeys. We can still see the marks in the ground and cable damage where the donkey was positioned next to the long-gone Shay-locomotive railway roadbed about 300 yards NNE from Cruiser’s grave.

I hope that we would have been friends, and that my friend doesn’t mind that I cleaned off the old whitewash and tar, and applied the finest tung varnish I could obtain. I hope that when this gentleman looks down from heaven that he approves of the simple, rough-cut stand I made to keep his craftsmanship out of the weather. After all, I did make sure it went back in the exact spot he placed it in 1936 – where our faller buried his beloved Cruiser next to the tree that killed him.

How do I know he’s in heaven? Well, anybody who could be so loyal and love so deeply…

Bob Smalser is with Sprague Pond Environmental Services, Camp Union, Washington.
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