BARTLETT TREE TIPS

BY APPOINTMENT
TO HER MAJESTY THE QUEEN
TREE SURGEONS
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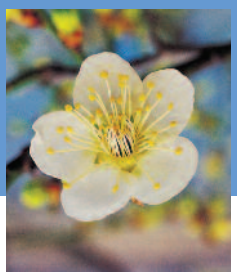


MANAGING DIRECTOR'S REPORT

Even before global warming, the coming of spring could often vary by several weeks. Either way, encouraging sensitive plants to emerge on stage before their normal time can cause unfortunate consequences. Thinking in 'tree time' the long term effects of flooding, even on the largest trees, can set them back badly especially if the fine feeding roots have been afterwards subjected to any stress such as drought.

Even so, the longer days and first daffodils rekindle optimism as we emerge from the winter gloom. Now is the time to have a look at the recent year's plantings, especially to check stakes, ties and protective tubes. It is not unusual to find them strangling the tree like over-tied plastic corsets. Some weeding, new mulching and discreet fertilising can also give young trees the chance not only to survive but also to thrive. Most will grow faster than people give them credit for. A great deal of slow growing is often caused by lack of after-care or sometimes any care at all.

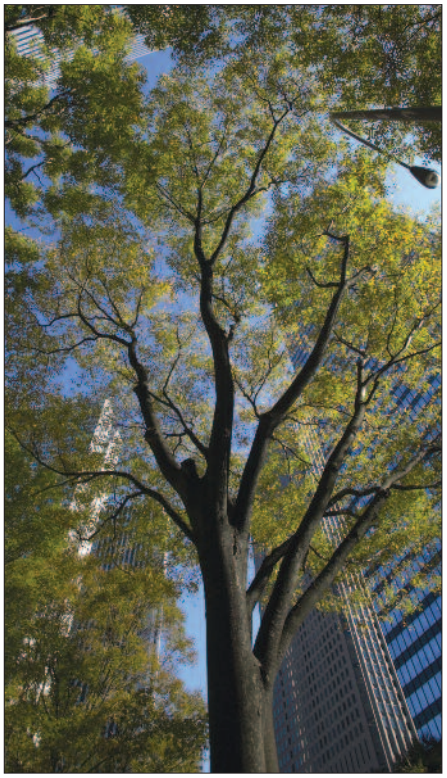
Look carefully at larger trees for any signs of dieback or structural weakness, particularly large forks. Many of the accidents we see could have been prevented if the cause had been seen sooner.

But, spring is also a great time to think about planting as well. The present of a carefully chosen tree is a wonderful way to mark a special occasion. I find at my home the botanical name is soon lost and the tree is immediately christened with the Christian name of the person who gave us the tree—and what a marvellous way to remind ourselves of their kindness.

William E. Matthews

WHY PLANT TREES?

We know that planting trees provides a range of functions and expectations. Trees give scale to a layout, provide a setting for architectural features, screen unsightly intrusions and provide privacy. Another reason for tree planting can be more political than practical. Reasons include conforming to planning regulations, to help housing developments, or to satisfy public expectations and promote a green image. This begs the question just how "green" is it to plant trees. The answer is surprisingly positive. Trees are excellent at filtering dust and car exhaust particles. Trees can also absorb a broad range of atmospheric pollutants. A medium sized tree such as a maple can, during one growng season, remove 60mg cadminium, 140 mg chromium, 820mg nickel and 5200 mg lead from the atmosphere. This may not sound like much but these heavy metals even at small concentrations can prove damaging to human health. Indeed it has been calculated that you are seven times less likely to develop asthma if you live in a tree lined avenue. In addition, surgical patients who could see trees from their windows compared to those who did not had shorter hospital stays, required fewer potent medications and had fewer postoperative complications. This



results in a saving of several million pounds for health care. Likewise, business and industry executives have found that attractive landscapes result in above average labour productivity, lower absenteeism and easier recruitment of workers with hard to find skills. The "take home" message is that trees provide not only important practical functions beneficial to human health but also have powerful psychological properties that we are only just beginning to appreciate. ■

PEST WATCH:

HORSE CHESTNUT LEAF MINER

With tree pest alerts for vine weevil, mites, caterpillars and leaf miners in mid-January, 2008 is sharpening up to be a year for major outbreaks of several devastating tree insect pests. One of those is the horse chestnut leaf miner a major problem of the common horse chestnut tree. The moth grows up to 5 mm long and has bright brown forewings with thin black and white stripes. Severely damaged leaves shrivel, turn brown and fall from the tree as early as July. The spread and establishment of the horse chestnut leaf miner is of extreme concern because once established, the pest maintains high rates of infestation without any evidence of decline.

CONTROL: Check for the presence of this pest. The leaf should be held up to the light. If it is a horse chestnut leaf miner burrow, it will be possible to identify a larva, chrysalis, or larval frass within the leaf.

Damage can be reduced by removing fallen leaves during the autumn and winter and either composting them thoroughly, to destroy the over-wintering pupae, or if the leaves are collected into smaller heaps, by covering them with a layer of soil or other plant material to prevent adult emergence in the following spring. Burning of infected leaves is also recommended.

Its natural enemies are parasitic wasps, but there are few species present in Ireland. Consequently, natural control measures based on bio-control are at present limited.

Admire is a systemic insecticide fully registered for the control of horse chestnut leaf miner. Admire is applied as a basal root drenches early in the growing season (March). Due to the persistent nature of this chemical re-infestation is highly unlikely for the rest of the growing season. Contact your local Bartlett Tree Experts Representative for further information and advice regarding control of this insect pest by an Admire soil drench. ■

Horse chestnut leaf miner close up of damage

CODLING MOTH

The Codling moth *(Cydia pomonella)* is a widespread pest of apples and occasionally pears. Damage is caused by the caterpillar burrowing into developing fruit.

The most serious infestations normally occur during long, hot summers. The surface of the apple often only has a small entry hole visible, normally covered with dry frass but significant burrowing may have taken place within the fruit.

There is one complete generation of Codling moth each year, but in warm summers the earliest emerging caterpillars can produce a second generation of adults in August and September.

Control measures include use of spray oil, soap or an insect growth regulator sold under the name Dimlin Flo. Dimlin Flo is highly recommended due to its long persistence within the tree providing long term control and in addition Dimlin Flo kills only moths and caterpillars, having no effect against beneficial insects such as beetles and ladybirds. One bacterial biological control agent, Bacillus thuringiensis is also available from garden centres under the produce name Dipel. ■

Codling moth damage on apple

DISEASE WATCH:

GUIGNARDIA LEAF BLOTCH

Guignardia leaf blotch (Guignardia aesculi) occurs on trees belonging to the Aesculus (horse chestnut) family. Symptoms include large irregular reddish-brown lesions with surrounding yellowed tissue on leaves, often badly disfiguring foliage by early to mid summer. Leaves curl and brown and, by August, the tree often appears to be suffering from severe leaf scorch. Premature leaf drop also occurs. Repeated infections can result in a reduction in tree vitality and increased susceptibility to insect pests such as leaf miner and scale. Repeated defoliation over time can influence the long term health of the tree resulting in a reduced life span. The disease is thought to have originated in the USA and is now a major problem here. *Guignardia aesculi* overwinters on decaying plant material. Spores are released in mid spring and are dispersed to growing leaves mainly by water splash. The reddish-brown blotches appear 10-20 days after infection.

Leaf Blotch of Horsechestnut

CONTROL: Treatments with fungicides are highly effective. Likewise good sanitation measures can have a marked impact on reducing disease development and spread. Fallen leaves should be collected and removed from the area to reduce the amount of inoculum available to re-infect trees the following spring. Planting densities should be decreased as dense foliage prevents air movement and inhibits leaf drying after rainfall. In areas where there is history of the disease, resistant species should be planted i.e. *A. glabra var. sargentii and A.parviflora var. serotina*. Application of phosphite and calcium fertilisers are recommended. Recent research shows these fertilisers have a marked impact on suppressing the development of the Guignardia leaf blotch fungus. ■

STRUCTURAL PRUNING OF YOUNG TREES

Most structural defects that occur in older trees can be prevented by pruning when the tree is young. This practice can avoid the need for more expensive tree care practices later in the life of the plant and can extend the lifespan of the tree by decreasing the likelihood of branch failures. Structural pruning of young, developing trees provides a desirable and stable form at maturity and is one of the best investments that clients can make in their landscape.

STRUCTURAL PRUNING TECHNIQUES

Maintain a single central stem/leader Unless the tree is intentionally grown as a multi-stemmed specimen as is often done with certain species such as birch, a single stem should be maintained for approximately half of the eventual mature height of the tree. On large maturing species, such as ash or maple, that can eventually reach 20-25 metres in height, a single stem should be maintained for at least 10-12.5 metres before it is allowed to develop multiple leaders of approximately equal size. On smaller maturing trees, a single stem should be maintained for approximately 3 metres. Trees with decurrent branching habits, such as elm and honeylocust will need a greater emphasis on structural pruning to develop a single central leader than trees with excurrent habits such as most oak species and conifers. Opposite branched species such as maple and ash also have a greater tendency to develop codominant stems (double leaders) at a young age. In some cases, competing leaders can be removed entirely to maintain one central stem.

Maintain Branch/Leader Size The diameter of all branches and leaders, especially those developing in the lower portion of the crown, should never be larger than 50% of the diameter of stem at the point of attachment. Branches that exceed this guideline, or are growing at a more rapid rate than the primary stem, should be thinned and/or reduced to slow their growth rate relative to the growth rate of the primary stem . This is referred to as subordination.

Maintain Foliage Distribution A live crown ratio of 66% should be maintained along the stem and along each permanent branch or leader. This means that foliage should cover at least two-thirds of the stem and each permanent branch. Delay removing lower branches in order to maintain this ratio.

Branch distances/distribution Thin out closely spaced branches as the crown develops. Prune so that at maturity branches are approximately 30-45 cm apart on large tree species and 15-20 cm apart on small trees.

When to Prune Structural pruning is best done in winter when leaves do not obscure branches. Pruning should begin as soon as trees establish and resume normal growth rates following planting. This generally occurs two years after planting but may be longer on large transplants. Inspect trees on an annual basis for the first ten years after they becomes established and prune as needed to provide desirable structure. On small maturing species, the first ten years after establishment is the critical period for structural pruning but on large maturing species, pruning for structure should continue for up to 25 years following planting. Pruning cycles generally can be extended to every 2-4 years during the 11-25 year period following establishment. ■

TREE FOCUS: CRABAPPLE

Crabapples (Malus, spp.) are a versatile and popular small tree for urban and suburban landscapes. More than 400 species of crabapple represent a diversity of flowering and fruiting characteristics, growth forms and pest resistance.

Flowers, produced in early spring are white, pink or red. Fruit varies in size and colour and may cling to twigs in winter to provide interest and food for wildlife. Crown shape may be rounded, upright, spreading or weeping depending on variety. Dwarf crabapples which remain under ten feet in height are popular in containers where space is limited.

Crabapples grow in moderately fertile, moist, but well drained soil in full sun, although partial shade is tolerated. Purple-leaved crabapples forms colour best in full sun. Crabapples are host to many insect and disease pests. Common leaf chewing insects include caterpillars. Aphids, scale insects and spider mites damage leaves or branches by removing sap with their sucking mouthparts.

Fireblight is a problematic disease of crabapple. Caused by a bacterium which infects through blooms, fireblight causes branch dieback and even death of susceptible varieties. Foliage diseases such as apple scab, rust and mildew can cause defoliation. While crabapple tends to tolerate these diseases, defoliation detracts from their appearance and vitality. Disease resistant varieties are available and should be used to help avoid these diseases.

RECOMMENDED MONITORING FOR CRABAPPLE

Winter: Corrective prune crowns on trees where flower production is not a primary consideration. Otherwise delay pruning until after the flowers have bloomed. A spray oil wash can be applied to suppress scale and aphid populations the following year. This is recommended when these pests have been exceptionally damaging. Sample soil for nutrient and pH levels especially if deficiency symptoms are present and adjust or add mulch as necessary.

Spring: Apply a fungicide spray treatment to suppress apple scab, powdery mildew and rust on susceptible varieties. Repeat every 14 days until the young fruiting apples can be seen. Monitor for caterpillars and aphids. Treat as necessary with spray oil or soap. Prune out and destroy shoots with fireblight symptoms. Add a fertiliser if nutrient deficiency symptoms (pale leaves) are observed.

Summer: Corrective prune crown if this operation was not completed during winter. Water trees if required. Inspect for aphids, scale and mites and apply soap or oil if necessary.

Autumn: Remove fallen leaves and compost unless heavy fungal infection is observed. In this case burn the leaves or remove from site to prevent re-infection of the tree next year. Apply additional mulch and fertiliser if not already done so. Autumn is an excellent time to apply fertilisers to apples. ■

ASK DR. GLYNN

Question: During the winter, I had rabbit damage on a number of small trees. The bark has been chewed off in parts of the base or the complete base of the trees. Can I save these trees? Someone recommended I spray the bare areas with a wound coating that you can buy from garden centres.

Mrs E. Smithfield, Tockwith, York

Answer: Unfortunately, I doubt wound coating will help in this instance. In general all you can do is wait and see if any of your trees recover. Where the bark has been stripped all the way around the stem, the prognosis is not good at all. These trees will probably die. In the future you might consider protecting your trees with wire mesh or some form of tree guard. To aid tree recovery from rabbit damage I also recommend appropriate fertilisation, irrigation and mulching around the tree base.

Question: With the recent storms is there anyway I can prevent or reduce storm damage to my trees?

Mrs L Tucker, Hallow, Worcester

Answer: The following are a few steps you can take to minimize this storm damage risk to your trees:

- Keep your trees healthy with regular mulching, fertilisation and periodic deep watering during dry periods.
- Provide plenty of space and protection for the roots. Remember root spread can be 2–4 times the diameter of the crown and 90% of tree roots are generally found in the top 60cm of soil. Consequently even a small 30cm deep trench near or around a tree can cause severe stability problems if the root system is cut.
- Avoid injuries to the trunk, such as damage from the lawn mower or strimmer.
- Remove dead branches using proper pruning methods, but use caution since excessive pruning can weaken trees.
- Call in a Bartlett Tree Expert to assess large trees for risk. This will save you the expense and disappointment of removing a healthy tree, and prevent potential property damage and personal injury caused by the fall of a weak or unhealthy tree.

***Dr Glynn Percival** is the plant physiologist and technical support specialist at the Bartlett Tree Research Laboratory located at the University of Reading. He is also responsible for running the disease diagnostic laboratory and analysis service. The Bartlett laboratory provides intense technical training to the Bartlett Tree Experts technicians and workers who care for our clients trees and shrubs.*

THINKING OF BUILDING?

Spring is often the time when house owners if they feel they are bursting at the seams, start thinking about extending the house or adding a conservatory. Many older clients find that now the kids have left the nest, and cutting the lawn takes longer every time, the possibility of using part of the garden to build a second house and raise some funds for retirement is a pleasing reality.

Frequently, larger gardens have large trees which appear to thwart the plans, or the trees are protected by preservation orders, or worse suddenly become protected, when advice is sought from the local planning department. Our team at Bartlett Consulting usually get called in at this time.

Since 2005 the planning rules regarding building near trees have been made clearer but more rigorous. Most problems occur when trees are an afterthought in the design process. An early survey before plans are finalised, will allow us to calculate tree root areas, assess the quality and longevity of your trees, and give you and your architect a clear plan of where building is possible, what trees could be lost without harm to the local landscape, and where new planting would enhance the design and the chances of local council approval.

Our consultants operate across the country and are very aware of local landscape requirements and planning conditions. Our involvement with you and the design can sometimes lead to exciting innovative solutions to tree problems. Recently a difficult densely wooded site has led to our team working with architects to include trees within the structure of a groundbreaking new house, (we'll keep you posted on this one in later *Tree Tips*.)

Sometimes building can take place close to trees using special foundations. Our advice can assure councils that trees will not be harmed. Once the main building is finalised there is the matter of driveways, paths and patios, usually problematic even if the building avoids tree root areas. Non-damaging surfaces are nowadays available, with the right advice; you will be able to get the car to the new garage, or the barbecue to its place on the patio!

Although extending or building a new house seems daunting particularly when trees are close by, Bartlett Consulting can make a difference to your plans, their approval and success in retaining good trees on the local landscape. If you are expanding please call we are sure we can help. ■

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