





## Root Invigoration™ by Thomas Smiley, PhD

One of the most effective ways to treat soil compaction and tree decline is with Root Invigoration™. This is a treatment that was developed and patented by the Bartlett Tree Research Laboratories. The treatment programme begins with an evaluation of the tree and its site. If the tree is thought to be capable of responding to treatment, soil samples may be collected to determine the exact needs of the tree. A Bartlett Arborist Representative will determine the size of the treatment area and which soil amendments are needed.

When the crew arrives, they will remove any turf that remains in the treatment area. Soil will be tilled using high pressure air with a tool called an AirSpade™. The beauty of this tool is

that it tills the soil without damaging roots. Once the area is tilled, organic amendments including biochar and fertiliser will be applied and then incorporated into the soil. Next, mulch is applied over the root-invigorated soil. This reduces the soil temperature, reduces water evaporation, and provides a future source of organic matter. All that is left to do is to water the area a few times a week if there is no rain to activate the full potential of the treatment.

Root Invigoration is one of the unique services provided by Bartlett Tree Experts. Contact your Bartlett Arborist Representative to find out if your trees are suitable candidates for the Root Invigoration process.

## Powdery mildew *(Continued from page 1)*

the surface of host tissue, producing a mat of white mycelium. It feeds by producing specialised peg-like projections called “haustoria”, which puncture host cells and absorb its contents. Spores produced on the mycelium impart the powdery appearance to infected plant parts and are responsible for secondary infections by other fungi.

### Control

Incidence and severity of powdery mildew can be reduced through various cultural practices. Extremely susceptible tree, shrub or plant species should be planted in at least partial sun and pruned periodically to increase air circulation. Fertilisation in the dormant season will prevent excessive late-summer growth, which is most susceptible to damage by powdery mildew. Good sanitation practices including the removal of fallen infected leaves will reduce the amount of powdery mildew available the following year. Fungicide sprays will effectively control powdery mildew if applied at 2- to 3-week intervals from when infection is first observed.

Powdery mildew incidences can be reduced by fertilisation in the dormant season.



## Fun with trees

### Ladybird beetle rocks – Add some fun under a tree or in your garden!

This easy project requires smooth oval rocks, outdoor craft paint, a few small paint brushes, and enough patience to wait for the paint to dry between each step.

First, make sure your rock is clean and dry, and use red to paint all but the bottom where the “beetle” will rest on the ground. Second, paint a black head and a line down the middle. Third, use the end of a paintbrush handle to dot on black spots and white eyes. Fourth, add smaller black dots onto the white eyes. Finally, if desired, paint your creation with a coat of clear craft outdoor sealer. If you have more paint colours, standard red and black ladybirds may be only the beginning!





# TREE FOCUS:

## English oak (*Quercus robur*)

### History

The English oak is a large deciduous tree with a rounded, broad crown; branching is upright and spreading, growing to a height of 30 -40 m. The growth rate of this species, though very slow, is very long lived; some trees reach 1,000 years in age although the “norm” is 200 years. *Quercus robur* has an extremely high ecological value because it supports numerous insect and wildlife species. The timber is highly prized for furniture and building purposes.

### Culture

- Grows best in deep, fertile, well-drained soil in sun or partial shade
- Tolerant of city conditions and high pH
- Susceptible to frost and cold winds

### Concerns

- Fungal diseases including acute oak decline, honey fungus and powdery mildew
- Insect pests such as oak processionary moth (OPM), aphids and gall wasps
- Wood decay may be caused by various bracket fungi
- Deer and rabbits can prove problematic

### Bartlett Management Practices

- Sample soils for nutrient and pH levels, especially if deficiency symptoms are evident during the growing season
- Root Invigoration™ to maintain health, thereby reducing susceptibility to diseases and pests
- Air-spading to alleviate soil compaction and control honey fungus combined with soil applications of biochar, appropriate fertilisers, phosphites and mulch
- Provide specialists in OPM control if an outbreak of OPM is suspected/confirmed



## WONDERS OF NATURE

### A plant that can grow up to 91 centimetres a day!?

Yes! There is a species of bamboo which has been found to grow up to 91 cm per day. Bamboo produces new canes (culms) in the spring. For 60 days these new shoots grow in height and diameter, and produce limbs and leaves. After the 60-day growth period, a bamboo cane never grows in height or diameter again. It will put out new foliage each year, however; bamboo is a colony plant, so it uses energy from an existing plant to produce more plants and to expand the root system.

For more about the anatomy and growth of this fascinating plant, visit [www.lewisbamboo.com/how-bamboo-grows](http://www.lewisbamboo.com/how-bamboo-grows).



## Why fertilise your trees?

Perhaps one of the most under-rated and overlooked tasks within the garden is providing your trees with a spring fertilisation. Trees require certain essential nutrients to function and grow. For trees growing on a forest site, these nutrients are normally present in sufficient quantities in the soil. Garden or landscape trees, however, may be growing in soils that do not contain sufficient available nutrients for satisfactory growth and development. Leaves and other plant parts are removed in landscape maintenance, disrupting nutrient cycling and the return of organic matter to the soil. It may be necessary therefore to fertilise or to adjust the soil pH to increase nutrient availability. For example, annual raking and removal of leaves typically removes



Fertilisation can make a big difference – this is the same tree one year later.

0.5-1.5 kg nitrogen per 100 square metres out of a garden.

### Benefits

The benefits of spring fertilisation can be quick and dramatic. Trees rapidly green up and overall vigour is improved; flower and fruit production is markedly increased. In many instances, pest and disease resistance can be improved and recovery from

environmental damage such as drought or salt damage enhanced. Importantly, spring fertilisation provides a proactive approach to tree care. Nutrient deficiencies are identified prior to visible signs of tree decline such as leaf yellowing and branch dieback. Ultimately, trees remain healthier and of greater longevity, reducing labour and future replacement costs.

## Continuing education is important

In January, a group of Bartlett Arborist Representatives, Consultants, Regional Inventory Arborists and Laboratory Staff took the official International Society of Arboriculture (ISA) Tree Risk Assessment Qualification (TRAQ) course at Kew Botanical Gardens. It was taught by Dr. Thomas Smiley, one of the developers of this ISA program and a credentialed instructor. He is also a senior scientist at Bartlett Research Laboratories in the United States. The course test was administered by an independent outside proctor, Guy Watson.

Participants were: **Jason Hasaka**, Principal Consultant – Bristol Consulting; **James Percy-Lancaster**, Senior Consultant, and **Bruce Hauxwell**, Assistant Consultant – Radlett Consulting; Arborist Representatives **Rob Cosgrove** and **Matt Levett** – Sevenoaks, **Mark Davis** – Chelmsford, **Alex Evans** – Beaconsfield, **Gary Hill** and **Pat Neech** – Manchester, **Carl Pedley** – Bristol, **Mark Reed** – Radlett, **Tim Brown** – Bedford; also, **Luke Hailey**, Research Assistant – Reading Laboratory; **Tom Adamson**, PHC Tech – Beaconsfield; **Chris Watson**, Crew Leader – Bristol.



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