



## Tree Damage Alert No 138

27th May 2010

### Spring Notes

Will it? Won't it? Has it or has it not? What is the hot topic? For several years talk has been that the climate is changing and/or global warming is upon us. Then a winter with lower temperatures than we have experienced for many years and snow changing everybody's thoughts. This change in the weather has persisted notably in the east of England where in places temperatures of  $-4^{\circ}\text{C}$  were recorded during the second week in May 2010. Such a frost may occur about dawn.

What causes damage to trees? Generally it is not the absolute minimum temperature but a rapid rise in temperature that is the problem. When the sun rises causing a rapid thaw it can lead to rupturing of cell walls of frozen plant tissues. So damage is most likely where trees are exposed to the east and that is the side of a plant where damage is usually noticeable.

When shoots of plants are young, before secondary thickening has occurred they are particularly vulnerable to spring frost damage. This is because the new shoots are dependent on turgidity in the cells elongation of shoots and for leaves to point towards the sun. This means that the new shoots are particularly vulnerable to freezing and subsequent rapid temperature changes.

So what has been damaged by the spring frosts of May 2010? Beech (*Fagus sylvatica*) hedges are showing browned shoots particularly along their tops. We have also seen young Oak (*Quercus robur*) and Ash (*Fraxinus excelsior*) growing in pasture land that have had their expanding leaves killed by frost. Similar, but particularly noticeable damage has been recorded locally on individual mature trees of these species and on Alder (*Alnus glutinosa*). Spring frost damage has also been seen on foliage and flowers of Handkerchief tree (*Davidia* species), Walnut (*Juglans* species) young ivy (*Hedera helix*) shoots and on the tender young shoots of Grape vines!

Another notable feature of this spring has been the absence of rainfall.

In TDA 130, issued in February 2010, we warned of potential for damage to trees by excessive applications of de-icing salt particularly in paved areas, pedestrian walkways and in shopping precincts. We are already receiving reports of salt damage to trees in such locations and the damage may be more severe due to the recent dry weather. Quantity and timing of rainfall can be important in the development of the symptoms. If rainfall is low in the spring, symptoms may occur in May, while in a wet spring the damage does not appear until late summer or early autumn.

Salt can be removed from the rooting area of trees by flushing the soil with large volumes of water, but beware of possible waterlogging in clay and heavily compacted soils, and the leaching of nutrients. Information on amelioration of salt in the soil see Arboriculture Research Note 100/91/PATH

**Be aware leaves and shoots on trees that have started to expand and then become brown and shrivelled may be a result of late spring frost or salt damage.**

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This is one of an occasional series of Tree Damage Alerts produced for the benefit of the arboricultural profession and issued by the Arboricultural Advisory and Information Service.

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