

# Arboriculture Research Note

## Issued by the D O E Arboricultural Advisory & Information Service

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SUMMER BRANCH DROP, by K D Rushforth, amended by D Patch, Arboriculture Advisory and Information Officer

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### Abstract

Summer branch shedding by apparently healthy mature trees has not been investigated and definitive information is not available. This note outlines some theories about 'Summer branch drop'.

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1. Occasionally, apparently healthy and stable trees shed large limbs during the summer for no obvious reason. This phenomenon, known as 'Summer branch drop', appears to be associated with certain weather patterns but the inter-relationship of factors is not fully understood.
2. 'Summer branch drop' has been reported occurring on oak (*Quercus* spp), Sweet chestnut (*Castanea sativa*), beech (*Fagus sylvatica*), ash (*Fraxinus excelsior*), poplar (*Populus* spp), willow (*Salix* spp) and Horse chestnut (*Aesculus hippocastanum*). Until recently 'Summer branch drop' was frequently reported on English elm (*Ulmus procera*), reflecting a locally large elm population relative to other common hardwoods. Records for this phenomenon in other trees are extremely rare. Young and vigorous maturing trees of susceptible species appear less prone to 'Summer branch drop' while over-mature and senescent specimens may shed branches repeatedly.
3. Branches that drop are frequently long and drawn out, at least 10 cm (4") in diameter, and they usually extend to or beyond the edge of the crown of the tree. Frequently, but not invariably, the break occurs some distance from a fork. The wood at the point of fracture may appear sound but for part of the branch diameter the break is often short, that is at right angles to the axis of the branch cutting across the wood fibres. A short fracture is often associated with decay but where the wood appears sound an internal defect or earlier weakening, not visible on the exterior of the tree, may exist.
4. Many explanations for 'Summer branch drop' have been formulated but conclusive evidence is lacking. Furthermore, as reports are often based on casual observations their subjectivity must be borne in mind.
5. 'Summer branch drop' may be the result of an internal weakening of the branch and stress factor triggering the break. The initial weakening may result from winter storm damage or snow accumulation producing internal cracks and stresses.
6. As 'Summer branch drop' is believed to be associated with calm weather conditions following a heavy rain shower which terminates a period of increasing soil dryness, the trigger may be water stress; this is known to cause cracks in conifer stems and may be responsible for producing an analogous condition in broadleaved trees. During the early Summer the weight of fresh foliage and new shoots, combined with the weight of developing fruits, may be increased so much by surface water following a rain shower that a turning moment develops resulting in branch fracture. Alternatively, incipient decay may also reduce the strength of the wood and could account for the short fracture sometimes recorded.

## **Conclusion**

7. The phenomenon of 'Summer branch drop' is potentially damaging to people and property. Until detailed recommendations are possible, tree owners are advised to maintain vigilance by routinely inspecting their trees and making thorough examinations of externally visible defects, especially those illustrated in "*The Recognition of Hazardous Trees*"\* and those listed in *Arboricultural Leaflet No. 1 - External Signs of Decay in Trees*\*. Defects should be noted and steps taken to remedy them at the earliest opportunity.

\* Out of print.

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Arboricultural Advisory and Information Officer  
Alice Holt Lodge  
Wrecclesham  
Farnham  
Surrey  
GU10 4LH

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