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CYPRESS AND UNIPER APHIDS
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Summary

Two aphid species which have caused recent serious damage to cypresses and junipers are described and their control is discussed.

Introduction

1. In 1988 two aphid species, the Cypress aphid and the American juniper aphid, occurred widely in gardens in southern England causing damage to ornamental conifers. The Cypress aphid (*Cinara cupressi*) affects mainly Leyland cypress (*x Cupressocyparis leylandii*), with 'Castlewellan Gold' seemingly more susceptible to damage that other cultivars, but also Lawson cypress (*Chamaecyparis lawsoniana*) and very occasionally dwarf cultivars of White cedar (*Thuja occidentalis*). The American juniper aphid (*Cinara fresai*) damages exotic junipers, notably *Juniperus virginiana* 'Skyrocket' and Chinese juniper (*J. chinensis*) but is not known to damage the native juniper (*J. communis*).

CYPRESS APHID (*Cinara cupressi*)

Damage Recognition

2. The symptoms of an attack by *C. cupressi* first appear in late May or early June when patches of foliage at the base of the tree become yellow or straw coloured. This may spread upwards, and in hedges, laterally to adjacent plants. The colour change on shoots attacked by *C. cupressi* can be very rapid becoming visible within 7 to 10 days of the initial aphid infestation. Later the foliage turns brown and appears dried-up, the lower branches often dying-back. In extreme cases, the damage can extend to the whole crown of the tree. On some older and denser trimmed hedges damage first appears as a patch 1.5m above the ground.

3. Sooty moulds (saprophytic fungi) may grow on the sugar-rich honeydew excreted by the aphids giving a blackened appearance to stems and foliage where *C. cupressi* are, or have been, feeding in large numbers. This symptom is not obvious when only a few aphids are present.

The Aphid Responsible

4. *C. cupressi* is a fairly large aphid, but it can be very difficult to find. Individuals range from 1.8 – 3.9mm long and have an overall grey appearance due to patches of surface pubescence. On close examination, the body colour is orange or yellowish-brown beneath the pubescence. They are pear-shaped and have two black stripes running about one third of their length from the head.

5. The aphids, found from May to November, are mainly wingless females (apterous parthenogenetic viviparae) which give birth to live young. From June to August winged females (alate parthenogenetic vivparae) also occur (Carter & Maslen, 1982).

6. *C. cupressi* feeds through the bark on phloem sap, but as its mouth parts are relatively short, its feeding is restricted to thinner barked stems up to about 5mm diameter. However, feeding aphids favour the slightly rougher areas of bark at the base of side shoots and the colonies which develop there give the appearance of a slight thickening of the stem when seen in profile.

7. Large numbers of plant lice or psocids (Psocoptera) are often present following a serious attack by *C. cupressi*. They have long filiform antennae and winged adults are frequently seen. Psocids are more active than the Cypress aphids and may be seen scuttling rapidly about over the stems and foliage. They feed on fragments of animal and vegetable matter including fungi and are probably attracted by the sooty moulds growing on the aphid honeydew.

Distribution of the Cypress aphid

8. *C. cupressi* is widely distributed in the warmer parts of Europe where it is found on *Cupressus*. In Britain it has been known in southern England for over a century and was associated with damage to Monterey cypress (*C. macrocarpa*) in the Royal Horticultural Society's Wisley Gardens in 4 years between 1923 and 1939 (Fox Wilson, 1948). In 1987 *C. cupressi* was recorded on Leyland cypress in Cheshire, Surrey and Sussex, but in 1988 it was far more widespread and occurred from Kent to Cornwall, in south Wales and north to Shropshire, Staffordshire, Nottinghamshire and Lincolnshire. The unprecedented increase in 1988 may have resulted from aphids overwintering successfully through the mild winter of 1987/88 or was perhaps caused by immigrants arriving from Europe.

Development of Damage

9. It appears from observations made in Italy (Inserra *et al*, 1979), supported by evidence from southern Britain in 1988, that *C. cupressi* needs to feed for only a short period to initiate foliar colour change and eventual death of the affected parts of the tree. Only shoots on which *C. cupressi* are feeding are damaged. Researchers in Italy failed to isolate any fungi known to be implicated in the death of shoots or foliage.

10. This rapid plant response means that to be effective any insecticide treatment to prevent damage needs to be applied very soon after winged aphids arrive on the tree. However as small colonies of this aphid are difficult to see, the whole of an affected plant needs to be treated with a suitable insecticide (see [15] below) to prevent further damage to the crown or to adjacent plants in hedges and windbreaks.

AMERICAN JUNIPER APHID (*Cinara fresai*)

Damage Recognition

11. Symptoms indicating that *C. fresai* may be attacking a juniper are a general sickly appearance, the presence of scattered dead patches of foliage and poor growth leading eventually to death of the plant. The feeding aphids produce copious quantities of honey dew which is colonised by sooty moulds.

12. Both container-grown plants and larger junipers growing in poor soils, especially 'Skyrocket', are most susceptible to damage by this aphid. In extreme cases quite large trees can be killed.

The Aphid Responsible

13. *C. fresai* is a large pinkish-grey to dark brownish-grey aphid (2.2 – 4.2mm long) with a "V" pattern of black blotches on the anterior half of the body. The wingless females feed and reproduce in dense colonies on young stems of most exotic junipers form May to October. Where plants are growing in protected positions in nurseries aphids may be found in some quantity even later in the year. The winged form (alate viviparae) which have the "V" less clearly marked, have been found during June, July and August but neither males nor egg-laying females (oviparae) have been seen in Britain. Psocids may be apparent on plants damaged by this aphid (see [7] above).

14. *C. fresai* is a North American aphid which is now found in southern England north to Bedfordshire and Worcestershire.

PREVENTION OF DAMAGE BY CYPRESS AND AMERICAN JUNIPER APHIDS

General

15. *C. cupressi* and *C. fresai* can be controlled with pirimicarb which has little effect on beneficial insects such as ladybirds. However, great care should be taken especially when applying the insecticide to affected trees in gardens or other areas where there is free access to both people and animals.

16. Control measures for the professional
The only products based on pirimicarb approved under UK pesticide legislation may be used.

17. Control measures for the amateur

'Rapid' contains the chemical pirimicarb. It should be applied as soon as signs of attack are seen.

When using an insecticide always read carefully the manufacturers instructions on the label (including any accompanying leaflet) and apply the chemical for the use, at the rate and by the method recommended, paying particular attention to aspects of safety.

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