Cinara cupressi 简体中文 正體中文

System: Terrestrial

Kingdom	Phylum	Class	Order	Family
Animalia	Arthropoda	Insecta	Homoptera	Aphididae

Common name Zypressen Blattlaus (German), cypress aphid (English)

Synonym

Similar species

Summary *Cinara cupressi* is a brownish soft-bodied insect classified as an aphid. It has been discovered around the world feeding on various trees from the following genus': *Cupressus*, *Juniperus*, *Thuja*, *Callitris*, *Widdringtonia*, *Chamaecyparis*, *Austrocedrus*, and the hybrid *Cupressocyparis*. *C. cupressi* sucks the sap from twigs causing yellowing to browning of the foliage on the affected twig. The overall effect on the tree ranges from partial damage to eventual death of the entire tree. This aphid has seriously damaged commercial and ornamental plantings of trees around the globe.

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Species Description
O'Neil (1998) states that, \"*C. cupressi* are brownish soft-bodied insects, often with a grey waxy coating. They are about 2.4mm long. Adults are winged or wingless. They often occur with several young (nymph), which they produce rapidly. They are commonly seen in colonies along the twigs of infested trees.\"
Because of the recent classification of *C. cupressi* as a species complex composed of two separate species, *C. cupressi* and *C. cupressivora*, identifying the geographical range of the specimen is the most accurate way to determine classification. The two species range's only overlap in the United Kingdom. Watson *et al.* (1999) states that, \"In *C. cupressivora* apterae from Britain and western Europe, 85% have two (or occasionally one) sclerite on abdomen II, whereas only 10% of *C. cupressi sensu lato* specimens from Britain possess any sclerites on abdomen II, and fewer than 1% possess paired sclerites in this position.\"

Notes
Watson *et al.* (1999) observe that, *C. cupressi* appear to belong to a species complex. They state that \"The cause of tree damage is shown to be an unnamed species, here described as *Cupressobium cupressivora* (Watson and Voegtlin) which probably originated on *Cupressus sempervirens* in a region from eastern Greece to just south of the Caspian Sea. The remainder of the complex, *Cinara cupressi* (*sensu lato*), apparently consists of three morphologically similar species (*C. sabinae* (Gillette and Palmer) and *C. cupressi* (Buckton), probably originating in North America, and an unidentified species).\" Day *et al.* (2003) state that, \"The taxonomic complexity of the group indicates that caution is required when interpreting earlier literature, particularly with respect to Western Europe and the Mediterranean region.\"

Lifecycle Stages
Panconesi (Undated) states that, \"Colonies of *Cinara cupressi* settle on the bark of young lignified twigs creating a kind of sleeve. They feed by piercing the bark and sucking the sap. The saliva they produce is phytotoxic and leads to necrosis in the phloem (conducting tissue of the sap) which subsequently results in the twig withering. Ants feed on a sugary substance produced by *Cinara cupressi* and contribute to their diffusion by transferring them from one part of the tree to another, thus creating new areas of infestation. At the beginning of the summer, when the temperature rises and the infestation is at its height, the sap cannot get to its destination (the apex of the leaves) because of the necrosis of its conducting tissues. As the weather gets hotter the aphids move down to the earth seeking protection from the summer heat. This is why at this point any form of treatment is useless, because when the first withered areas become visible the vast majority of the aphids are no longer on the foliage.\"

Habitat Description
C. cupressi has been documented feeding on *Cupressus lusitanica*, *Juniperus procera*, *Thuja occidentalis*, and *Callitris robusta* (Mwangi, 2002). *C. cupressi* also attacks species of the genera *Callitris* and *Widdringtonia* (Watson *et al.* 1999). Iriarte (Undated) states that, \" *Cinara cupressi* is already attacking *Austrocedrus chilensis*, a conifer native to Chile and Argentina.\"

Reproduction
Acording to Ciesla (1991), \"the life cycle of the aphid is complex. During summer months it reproduces parthenogenetically. The species give birth to live young. There are two forms of adults: a winged and a wingless form. As cool weather, both males and females are found and eggs are produced instead of live nymphs. Eggs are deposited in rough areas on twigs and foliage, where rthey overwinter. Several generations are produced in a year and the life span of a single generation is about 25 days during the peak of summer\".

General Impacts
C. cupressi affects the tree by sucking sap from the twigs causing yellowing to browning of the foliage on the affected twig. The overall effect on the tree ranges from partial damage to eventual death of the entire tree, depending on the severity and duration of the *C. cupressi* infestation (O'Neil, 1998). The Royal Horticultural Society (2004) lists the symptoms of *C. cupressi* infection: \"Yellowing shoots in summer; by late summer many of these will be brown and dead. On clipped hedges the dieback can be quite pronounced, with the lower parts often more severely affected than the top. A black powdery coating of sooty mould often develops on the stems and foliage.\"
Watson *et al.* (1999) report that *C. cupressi* (Buckton) have seriously damaged commercial and ornamental plantings and native stands of Cupressus, *Juniperus*, *Widdringtonia* and other Cupressaceae in Africa, Italy, Jordan, Yemen, Mauritius and Colombia. Kenya, has the largest area of industrial forest plantations of *Cupressus lusitanica* (planted on about 86,000 ha) out of this, about 5,153 ha have been infested by the aphid to variable damage levels ranging from slight to severe (Mwangi, 2002). Mwangi (2002) state that, \"Population density of *Cinara cupressi* is highest during the hot, dry season and lowest during the season of heavy rains. The decline in population density results in some recovery of damaged trees.\"

Management Info
Physical: Mwangi (2002) suggests, \"Thinning to reduce the density of trees and resultant shady conditions which the aphid seems to prefer; restricting planting of cypress to rich, deep soils in cool areas; and planting of alternative species, for example *Grevillea robusta*, which are not attacked by the aphid.\"\r\n
Chemical: Treatments containing Pirimicarb (Pyrimor), a product which has a low toxic level for humans and other insects have been identified to combat *C. cupressi*. The author states that for the treatments to succeed, the first aphid colonies that settle on the tree after hibernation (this takes place by the month of March in Italy) should be primarily targeted. Later treatments are always less successful and sometimes useless if carried out after the appearance of the withered areas. The treatment depends on the presence of the aphid which can be detected by shaking the branches so that it falls onto a white cloth placed underneath the tree. The success of the treatment also depends on spraying all the foliage, above all the internal branches. The author suggests that it is best to wait before felling as even badly damaged trees have often known to recover through the growth of adventitious buds (Panconesi, Undated). The Royal Horticultural Society (2004) suggests, \"Spraying in early summer at the first sign of an attack to prevent damage occurring. Suitable products contain imidacloprid (Bio Provado Ultimate Bug Killer Concentrate), bifenthrin (Scotts Bug Clear, Doff All-In-One Garden Pest Killer or Bio Sprayday Greenfly Killer Plus). They observe that it is often difficult to spray large hedges thoroughly and damage will occur when the aphid is abundant. Though slow damaged hedges are known to recover. Mwangi (2002) reports on testing the using of high-volume back-mounted warm fog generators. The author states that, \"Results show that fog generators reduced the man hours for spraying by two thirds. The fog, which is a carrier of active ingredients, rises to the top of the crown and drifts to cover all portions of the tree. Motorised sprayers need a lot of water and spray droplets cannot reach the tops of tall trees. The author observes that, \"Soil applications of systemic pesticides have failed to produce good results.\"\r\n
Biological: Examples of natural enemies that may be explored for use as biocontrol agents are *Pauesis cupressobii* and *P. juniperorum* (Hymenoptera: Braconidae), which have been found attacking *Cinara juniperi*. Another example is *Aphidus* sp, a parasitoid, that has been found attacking *C. cupressi* in Germany (Mwangi, 2002) .
Kamunya *et al.* (1997) conducted a study in which *Cupressus lusitanica* seedlings from open-pollinated seeds of 18 families were inoculated with day-old first instar *C. cupressi*. The authors found that some *C. lusitanica* are resistant to the aphid, and they also typically produce resistant progeny. Orondo and Day (1994) quanitifed damage to *C. lusitanica* from *C. cupressi* in Kenya. Damage for each of the 603 trees was scored on the five point scale on six occasions. The authors found that damage decreased over the period of the study. The authors conclude that, \"The data indicate the need for careful monitoring of stands before a decision to clear fell is made, particularly as some trees initially in the highest damage category were observed to recover. These observations should be repeated in younger trees and in different areas.\"

Principal source: *Cypress aphid, Cinara cupressi* (O'Neil, 1998)

Compiler: National Biological Information Infrastructure (NBII) & IUCN/SSC Invasive Species Specialist Group (ISSG)

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