FOREST PEST SPECIES PROFILE

November 2007

Cinara cupressivora Watson & Voegtlin, 1999

Other scientific names:
Order and Family: Hemiptera: Aphididae
Common names: giant cypress aphid; cypress aphid

Cinara cupressivora is a significant pest of Cupressaceae species and has caused serious damage to naturally regenerating and planted forests in Africa, Europe, Latin America and the Caribbean and the Near East. It is believed to have originated on *Cupressus sempervirens* from eastern Greece to just south of the Caspian Sea (Watson *et al.*, 1999). This pest has been recognized as a separate species for only a short time (Watson *et al.*, 1999) and much of the information on its biology and ecology has been reported under the name *Cinara cupressi*.

Cypress aphids (Photos: Bugwood.org – W.M. Ciesla, Forest Health Management International (left, centre); J.D. Ward, USDA Forest Service (right))

DISTRIBUTION

Native: eastern Greece to just south of the Caspian Sea

Introduced:
Africa: Burundi (1988), Democratic Republic of Congo, Ethiopia (2004), Kenya (1990), Malawi (1986), Mauritius (1999), Morocco, Rwanda (1989), South Africa (1993), Uganda (1989), United Republic of Tanzania (1988), Zambia (1985), Zimbabwe (1989)

Europe: France, Italy, Spain, United Kingdom

Latin America and Caribbean: Chile (2003), Colombia

Near East: Jordan, Syria, Turkey, Yemen

IDENTIFICATION

Giant conifer aphid adults are typically 2-5 mm in length, dark brown in colour with long legs (Ciesla, 2003a). Their bodies are sometimes covered with a powdery wax. They typically occur in colonies of 20-80 adults and nymphs on the branches of host trees (Ciesla, 1991). Winged and non-winged adults can be found in the same colony.

Detailed descriptions of female adults are provided by Watson *et al.* (1999).

HOSTS

Austrocedrus chilensis; Callitris spp.; *Chamaecyparis* spp.; *Cupressus* spp.; *C. lusitanica; Juniperus* spp. – *J. bermudiana*; *Thuja* spp.; *Cupressocyparis* spp.; *Widdringtonia* spp. – *W. nodiflora*

Cinara cupressivora has a broad host range and would probably find any Cupressaceae species to be suitable host material (Ciesla, 2003a).

BIOLOGY

Cinara cupressivora has a high reproductive potential. Only females are present during the summer months which reproduce parthenogenetically and give birth to live young (Ciesla, 2003a). As cool weather approaches, 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 they overwinter. Several generations are produced in a year and the life span of a single generation is about 25 days during the peak of the summer season (Ciesla, 2003a).

Damage caused by the cypress aphid, Kenya (Photos: Bugwood.org - J.D. Ward, USDA Forest Service (left, top right); W.M. Ciesla, Forest Health Management International (bottom right))

SYMPTOMS AND DAMAGE

Adults and nymphs suck the plant sap on terminal growth of young and old trees (Ciesla, 1991). Feeding retards new growth and causes desiccation of the stems and a progressive dieback on heavily infested trees. Damage to host trees includes browning and defoliation which, in some cases, causes dieback and death of trees. A secondary problem caused by aphid feeding is the copious quantities of honeydew which encourages the growth of sooty mould (Ciesla, 1991). The mould causes foliage discolouration and interferes with photosynthesis and gas exchange.

The occurrence of ladybird beetle adults and larvae (Coleoptera: Coccinelidae) is often an indicator of aphid infestation as is the presence of ants, which tend the aphids and feed on the honeydew.

CONTROL MEASURES

Chemical, cultural and biological control tactics are available for management of damaging populations of *Cinara cupressivora*. Short-term protection of cypress hedges and small ornamental trees can be achieved with ground applications of chemical pesticides but this is impractical in forests. In Africa, observations indicate that cypress plantations established on good soils are more tolerant of aphid infestations than those established on shallow, rocky soils and young, fast-growing plantations are less susceptible to damage than mature plantations (Ciesla, 2003a). Based on these observations, proper site selection and timely harvesting of plantations should reduce losses.

Release of *Pauesia* parasitoids for biocontrol of cypress aphid, western Kenya (Photo: W.M. Ciesla, Forest Health Management International, Bugwood.org)

Biological control agents have been used successfully against several species of *Cinara*. The introduction of *Pauesia* spp. in Kenya and Malawi has significantly reduced the impact and spread of *C. cupressivora* (Day *et al.*, 2003). Larvae and adults of ladybird beetles and larvae of several species of syrphid flies (Diptera: Syrphidae) are natural control agents of the cypress aphid but they are not considered capable of controlling high populations (Ciesla, 2003a).

References

Ciesla, W.M. 1991. Cypress aphid: A new threat to Africa's forests. *Unasylva*, 167(42).

Ciesla, W.M. 2003a. *Cinara cupressivora*. NAFC-ExFor Pest Report. (available at: www.spfnic.fs.fed.us/exfor/data/pestreports.cfm?pestidval=161&langdisplay=english)

Day, R.K., Kairo, M.T.K., Abraham, Y.J., Kfir, R., Murphy, S.T., Mutitu, K.E. & Chilima, C.Z. 2003. Biological control of homopteran pests of conifers in Africa. *In* Neuenschwander, P., Borgemeister, C. & Langewald, J., eds., *Biological control in IPM systems in Africa*. CAB International, pp. 101-112.

Watson, G.W., Voegtlin, D.J., Murphy, S.T. & Foottit, R.G. 1999. Biogeography of the *Cinara cupressi* complex (Hemiptera: Aphididae) on cupressaceae, with description of a pest species introduced into Africa. *Bulletin of Entomological Research*, 89(3): 271-283.