Prunus serotina (American bird-cherry) as a host plant of Aphididae in the Netherlands

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*Prunus serotina*, American bird-cherry, or in America: black cherry, native in Central and Eastern North America, has in Europe sometimes been used as an ornamental, or as a lane tree. Its main use, however, was in forestry. Millions have been planted between rows of *Pseudotsuga douglasii* and *Larix leptolepis*, the idea being that the Conifer’s litter would be better converted if mixed with that of this Prunus, and that later the Conifer would overgrow *Prunus serotina*. Policy has changed, however, and the tree is now considered a weed, and control has begun. In the meanwhile birds have further spread the tree, and it occurs everywhere on light, sandy soil in uncounted millions.

In its native country *Prunus serotina* has a few comparatively rare native aphids, and species of economic importance, like *Myzus cerasi* (F.), the black cherry aphid, and *Hyalopterus pruni* (Geoffr.), the mealy plum aphid, have occasionally been found on it. The latter 2 species are common pests in Europe, but are mostly only found as stray autumn migrants on the host in the Netherlands. Of the other aphid species infesting *Prunus serotina* in the Netherlands none has been reported from this host plant in North America.

1. *Myzus persicae* (Sulzer). In 1946 the green peach aphid, undoubtedly our most noxious aphid species, was found overwintering successfully as eggs on *Prunus serotina* near Kootwijk. Further investigations showed that only certain tree specimens are regularly infested, others never or rarely. Old trees with spurs and suckers growing from the trunk appeared more suitable as host plants than young trees. Healthy trees were found with an estimated 3000 primary colonies, more than we ever observed on *Prunus persica*. The over-all picture is, that of the overwintering eggs laid on *Prunus serotina* less than 0.01% gives rise to a colony in spring.

Yet, from an agricultural point of view, *Prunus serotina* is very dangerous. *Myzus persicae* is already in its spring flight active as a virus vector in such crops as potatoes and beets. And though peach is nearly absent near the areas where seed potato growing is successful, there are now millions of *Prunus serotina* nearby.

The behaviour of *Myzus persicae* on *Prunus serotina* in spring is less pliable than it is on peach. The fundatrix develops on 1 or 2 of the leaves of a short spur on the trunk or a thick branch. The infested leaf is slightly curved, turns yellowish and drops early. Therefore early infestations are usually overlooked. The progeny, mostly as
larvae, walk along trunk and branches to the periphery of the canopy and cause conspicuous leaf curl. Peripheral leaf curls holding fundatrices were never found. Alatae are not very common in the second generation, but dominate in the third generation. Recolonization of *Prunus serotina* by alatae developed on the host or on peach has not been observed.

2. *Rhopalosiphum insertum* (Wlk.). This well known pest of apple and pear is, according to the literature restricted to Pomoideae (*Pyrus malus, Crataegus, Amelanchier, Mespilus, Sorbus*) as winter hosts. However, we found that this aphid in nature can successfully overwinter on some *Prunus* species, best of all on *Prunus serotina*. Fundatrices cause leaf curl in a curious way. Young leaves of *P. serotina*, in contrast to those of apple, are sharply folded along the mid vein. The young fundatrix, feeding on the morphological underside of the young leaf, first curves the mid vein sideways, then, when the leaves unfold, downwards. The result is a leaf curl very much resembling that caused by *Myzus persicae*, and often both species are found together on the same curled peripheral leaves.

On *Prunus serotina* only 2 generations develop, the second consisting of alatae which found colonies, usually attended by ants, on underground parts of Gramineae. Because spring alatae of *Rhopalosiphum insertum* rather strongly resemble those of *R. padi* (L.) from *Prunus padus* and *P. tenella*, we repeatedly transferred alatae from curled leaves of *Prunus serotina* to caged, potted *Poa annua* and always obtained the easily recognizable root forms of *R. insertum*.

This aphid is known as a pest in horticulture, but not on its secondary hosts, Gramineae.

3. *Phorodon humuli* (Schrank). The summer form of this species, which overwinters as eggs on wild and cultivated *Prunus* species, is one of the most serious pests of hops (*Humulus lupulus*). It is, incidentally, also the aphid in which host alternation was first discovered, by Walker (1849), who in his overlooked publication of a few lines gave the advice to hop growers to prune sloe (*Prunus spinosa*)-hedges in order to destroy the overwintering eggs. Perhaps the earliest advice to biological, or integrated, insect control.

On *Prunus serotina* its infestation, lasting for at least 3 generations, can easily be recognized by the way the leaves are rolled. Both edges are rolled downwards and inwards but the mid vein is hardly curved, the result resembling a cigarette.

This species is on *Prunus serotina* less common than the 2 preceding ones, and mostly only 1 fundatrix per tree was found.

4. *Aphis pomi* de Geer. The species is generally recorded only from Pomoideae and *Spiraea* spp., with one record from *Sedum kamtschaticum*. However, healthy colonies, attended by *Lasius alienus*, were twice observed on the apices of twigs of a vigorously growing *Prunus serotina* in early summer. Colonizing alatae were frequently observed on sucker growth of trees that had been cut, but the larvae died. Oviposition on *Prunus serotina* has never been observed. The aphid is known as a serious pest in nurseries, on vigorously growing apple trees, and on some ornamental shrubs, notably *Cotoneaster* spp.

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