

Biology/Phenology

Apple Aphid and Spirea Aphid

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This study was conducted to determine if spirea aphid was present in apple orchards in south central Washington.

Apple and spirea aphid are closely related and it is very difficult to separate the species by looking at them. Only winged forms can be identified to species. Usually the veins in the forewings of the apple aphid are bordered with darker pigmentation, though sometimes this is difficult to see even under a microscope. The best separation method is to measure the ultimate rostral segment of the mouth parts. This segment is 0.12 mm long in apple aphids and 0.09 to 0.10 mm long in spirea.

Although difficult to separate morphologically, apple and spirea aphid differ in biology. Apple aphid overwinters as an egg on apple, while spirea overwinters on spirea and infests apple trees and other plants during the summer. In practical terms, dormant and delayed dormant sprays do not affect spirea aphid. Also, some work in the eastern USA suggests the two species differ in susceptibility to insecticides.

During late August and early September we collected winged adult aphids from 33 different orchards at Moxee, Parker Heights and Prosser, WA. The aphids were put in alcohol and then under a microscope at 30x and identified as apple or spirea aphid.

**Results**

Based on wing vein pigmentation, most of the orchards had a mixed population of apple and spirea aphid (Table 1). Most of the aphids, 74% out of the 762 examined, were apple aphid.

Susan Halbert (University of Idaho) provided us with the counts of apple and spirea aphid from suction traps located in Washington (Table 2). Most of the winged aphids in the traps were spirea.

**Table 1.** The number of apple aphid (AA) and spirea aphid (SA) collected from different orchards and identified to species based on wing vein pigmentation, Washington, 1994.

Orchard	AA	SA	Orchard	AA	SA	Orchard	AA	SA
1	11	2	14	26	5	25	26	5
2	9	1	15	18	1	26	21	6
3	16	5	16	20	2	27	12	2
4	4	4	17	24	1	28	37	7
5	1	0	18	18	9	29	29	1
6	8	15	19	27	7	30	22	15
7	15	7	20	10	15	31	18	0
8	19	9	21	13	10	32	4	6
9	4	3	22	8	15	33	0	0
10	33	13	23	10	5			
11	32	3	24	26	4			
12	24	7						
13	19	11						

Total apple aphid = 564; total spirea aphid = 198.

**Table 2.** Aphid suction trap counts from 3 locations in Washington.

Aphid	Location	1 Aug	16 Aug	23 Aug	30 Aug	6 Sep
Apple aphid	Moxee	0	1	0	0	1
Spirea aphid	Moxee	5	16	26	0	4
Apple aphid	Ephrata	ND	0	0	0	0
Spirea aphid	Ephrata	ND	5	5	7	2
Apple aphid	Quincy	9	0	0	2	0
Spirea aphid	Quincy	138	89	109	173	11