

RUSSIAN WHEAT APHIDS - POTENTIAL OVERSUMMERING HOST PLANTS

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RUSSIAN WHEAT APHID (*Diuraphis noxia*) POTENTIAL OVERSUMMERING HOST PLANTS - Grass species that were green during the period between wheat harvest and the emergence of the new crop in the fall were sampled weekly at two sites to determine potential oversummering Russian wheat aphid host plants. The sites were as follows:

Site #1 - is a cultivated wheat and barley area termed a Loamy Plains Range site with a draw running through it. The location was two miles south and two miles west of Arriba, Colorado in Lincoln County.

Site #2 - is characterized as a Sandy Plains Range site on the edge of a cultivated wheat area with native grasses. The location is four miles northwest of Akron, Colorado in Washington County.

Samples were taken by clipping the plant at ground level, taking enough plant material to fill a one gallon Ziploc bag. Samples were chilled, carried to the laboratory and then placed in Berlese funnels for 24 hours to extract any live aphids. Extracted Russian wheat aphids were counted as wingless (apterae), winged (alatae) or in the process of forming wings.

Results of these studies are presented in Figures 1 through 6. Canada wildrye was the largest source of Russian wheat aphids at the Arriba site, while, crested wheatgrass appeared to be the better host from the Akron location. Barnyard grass, Canada wildrye and Western wheatgrass were three grass species that served as oversummering hosts at both location. Blue grama and Cheatgrass were abundant hosts at Arriba and were not at the Akron location. Crested wheatgrass, Green foxtail, and Prairie sandreed were abundant hosts at Akron and not at Arriba. This study indicates the importance of annual grasses (Green foxtail, Barnyard grass, Cheat grass) that are often present in wheat stubble between harvest and the establishment of the new wheat crop.

This survey shows that there are annual and perennial grasses that obviously helped "oversummer" the RWA. Whether Russian wheat aphids can reproduce on these plants is still unanswered. Control of volunteer wheat and barley in areas where RWA exists is a must for wheat production.

Number of Aphids

7-25
 17
 MEAN**
 WIND VECTOR
 117
 115
 198
 225
 67
 211
 148
 284
 180-270=SW,

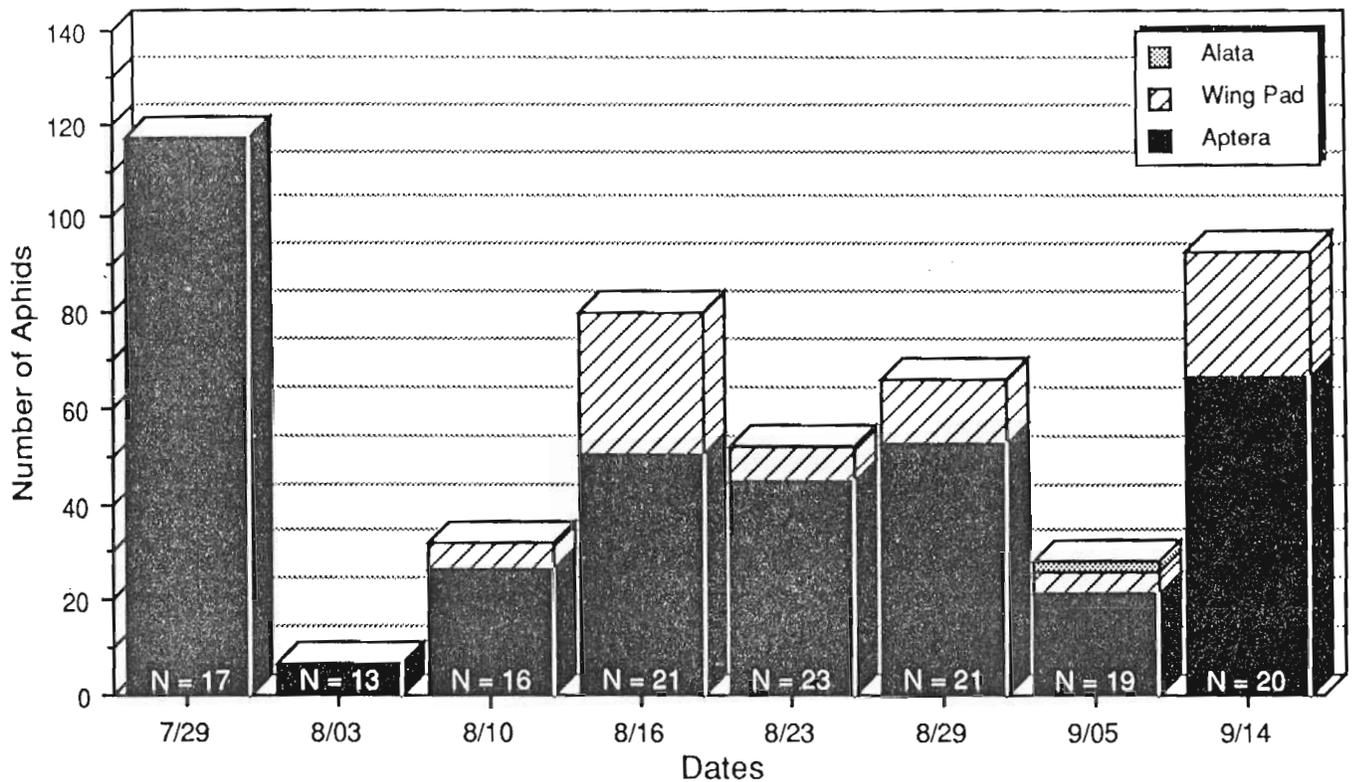


Figure 1. Total number of aphids extracted by Berlese funnel from grass samples at Arriba. N = number of grass species comprising the sample.

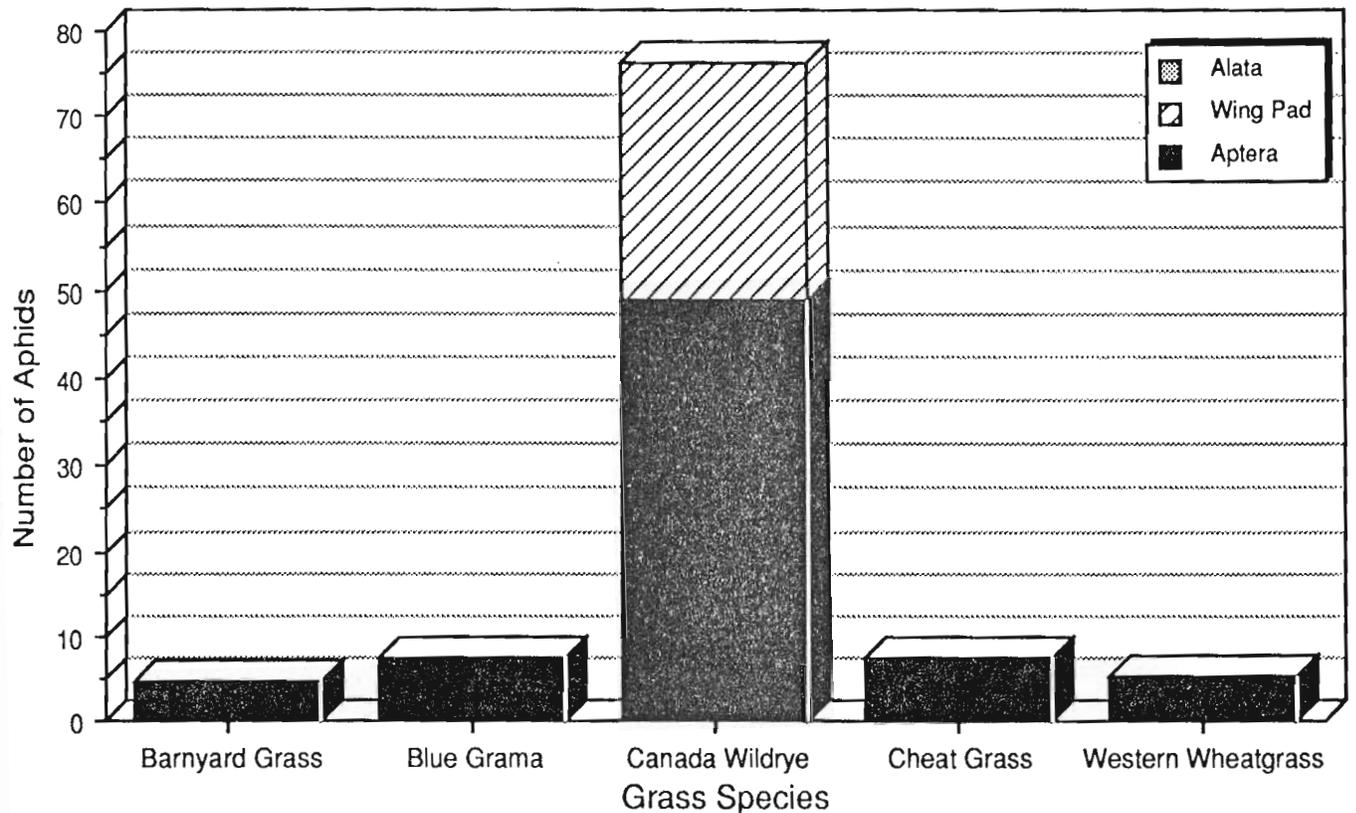


Figure 2. Grasses yielding more than 5 Russian wheat aphids during the overwintering period at Arriba.

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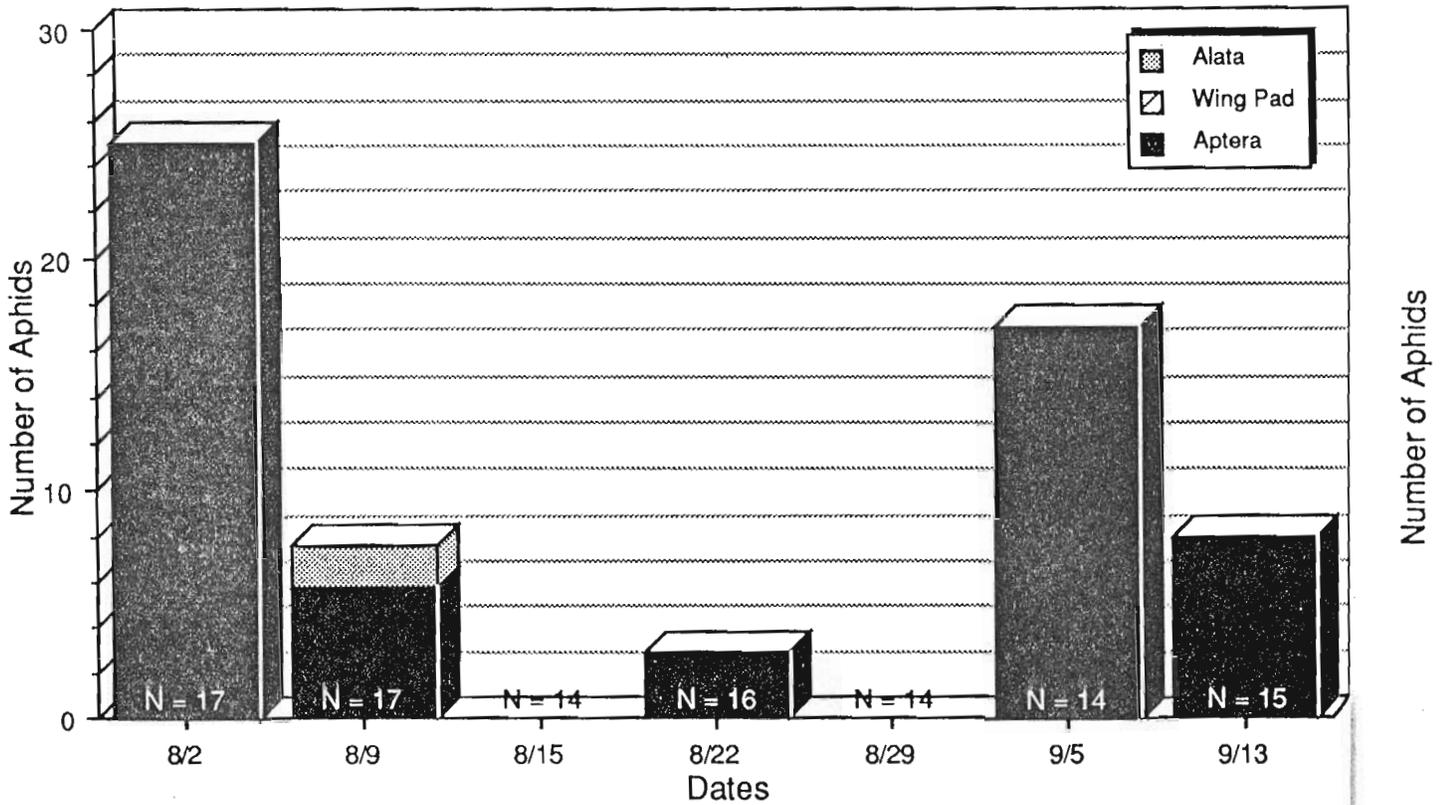


Figure 3. Total number of aphids extracted by Berlese funnel from grass samples at Akron.
 N = number of grass species comprising the sample.

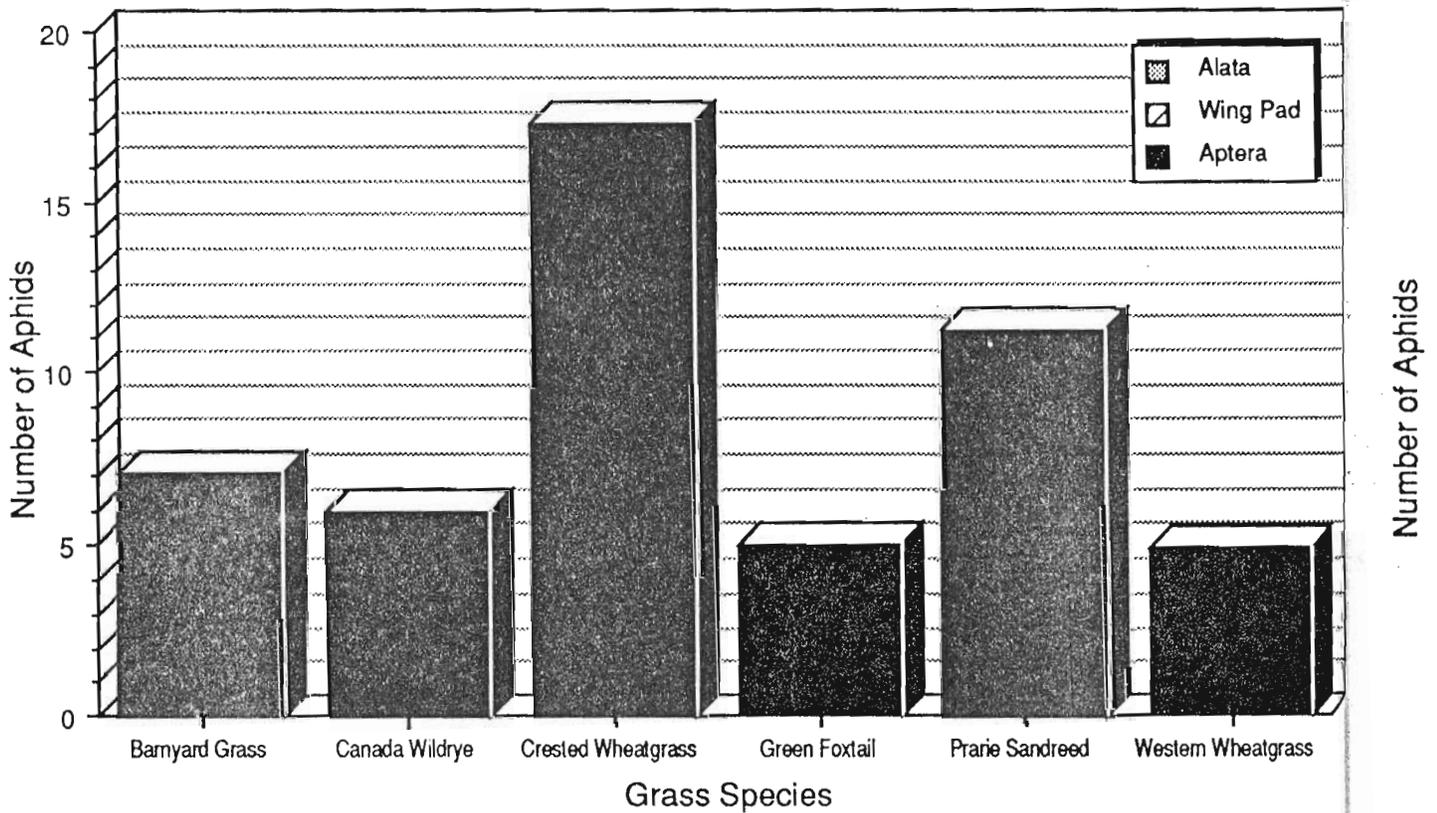


Figure 4. Grasses yielding more than 5 Russian wheat aphids during the oversummering period at Akron.

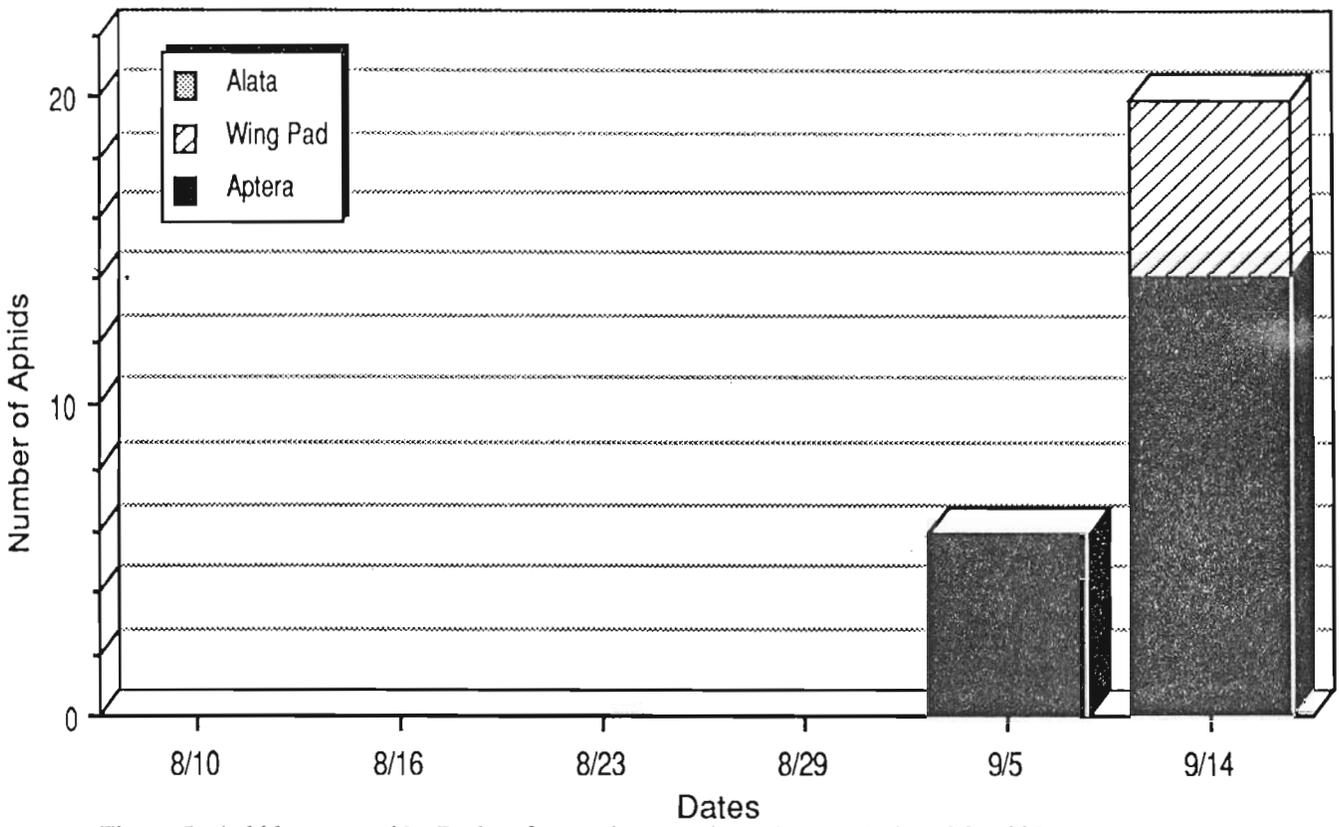


Figure 5. Aphids extracted by Berlese from volunteer wheat plants at Arriba, CO, 1988.

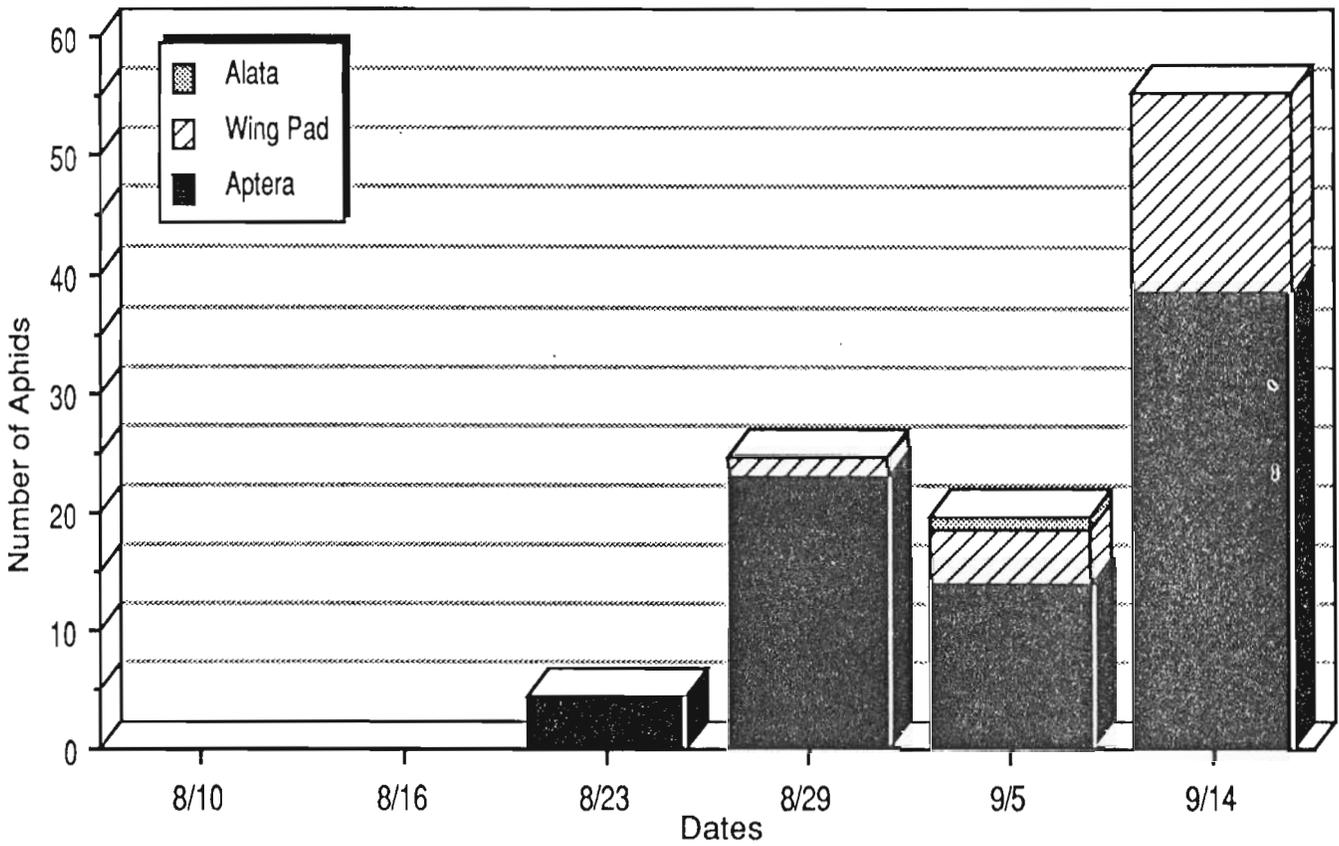


Figure 6. Aphids extracted by Berlese from volunteer barley plants at Arriba, CO, 1988.