

# *Lettuce Aphid on Late Season Produce*

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## Lettuce Aphid *Nasonovia ribisnigri*

### **Description and Seasonal Development**

Very little information on the LA biology under desert conditions has been reported. However, LA appears to be most reproductively active when temperatures average above 55-60 °F. They have a very short lifecycle (~8-10 days) and populations can build up rapidly. Under mild-winter temperatures, LA can be present on lettuce throughout the winter and spring crops. The nymphs are comparatively large and can take on different color forms, ranging from red to pink to brown. Adults, both apterous and alate are usually brown with a dark head and thorax. Extensive black markings can be found on adult, often including dark cornicles, dark bands across the abdomen, and dark bands on the legs. The antennae and cornicles are long in LA, and the legs are quit spindly giving it a spider-like appearance. A pictorial key for identification of LA is shown in Plates 1 and 2.

**Economic Damage:** LA are only found on lettuce crops (iceberg, romaine, butter, leaf ), and unlike other aphid species in lettuce, the adults tend to deposit live nymphs near the growing point of plants. They continue to feed and reproduce deep within the plant on young newly developing leaves. In head lettuce and romaine, LA is found almost exclusively in developing heads and heart, often well protected under several layers of leaves. They economically damage lettuce as a contaminant, often rendering whole fields unmarketable.

### **Insecticidal Control**

Fields not planted with imidacloprid or thiamethoxam are routinely treated with foliar insecticides upon detection of aphid colonization. Foliar sprays should be applied for aphid control based on a simple action threshold; when an average of 10% of plants has aphid colonies (4 or more immature apterous aphids) present. Plants should be sampled 5-7 days following sprays and retreated if the threshold is exceeded again.

Older products such as Orthene (acephate), endosulfan, Metasystox-R, dimethoate, malathion and pyrethroids can provide suppression of aphid populations on lettuce and cole crops with limited residual. Metasystox-R is particularly effective against cabbage aphids and lettuce aphids. Repeated applications will probably be necessary, depending on time to harvest and aphid pressure. Provado (foliar formulation of imidacloprid) also provides a foliar alternative to Admire. None of these products provides a quick, rapid knockdown of established aphid colonies and their reentry intervals and pre harvest intervals vary, depending on rates and crops. After years of extensive use, many of these compounds only provide marginal efficacy against green peach aphid, and it is now common for PCAs to tank-mix the older products together or with a pyrethroid to achieve adequate economic control.

The newer products overall offer good residual control of most aphids species in leafy vegetables and cole crops. Assail has contact and translaminar activity via foliar applications. Beleaf, another translaminar insecticide, is a quick acting compound that immediately suppresses the feeding of aphids and is non-toxic to beneficial insects. These compounds can be slow acting during cooler weather conditions (3-7 days) and are not capable of controlling heavy lettuce aphid infestations within heads and other protected leaf areas on leafy vegetable crops. Movento is an excellent insecticide for aphid control that provides systemic activity against aphids as a foliar spray. Like the other new compounds it is slow acting (7 d) under cooler weather and has shown excellent activity against lettuce and foxglove aphids when applied during early colonization.

Relative Efficacy Index For Aphids in Desert

Product	IRAC MOA	Green Peach aphid	Potato aphid	A. <i>lactucae</i>	Foxglove aphid	Lettuce aphid	Cabbage aphid
Lannate	1A	•	••	•••	•	•	•
Dimethoate	1B	••	•••	•••	••	•	••
MSR	1B	••	•••	•••	•••	•••	•••
Orthene	1B	••	•••	•••	•••	••	•••
Malathion	1B	•	•••	•••	•••	•	••
Endosulfan	2A	••	•••	•••	•••	•	••
Bifenthrin	3	•	•••	•••	•••	•	•
Imidacloprid	4A	•••	•••	•••	••	•	•••
Platinum	4A	•••	•••	•••	••	•	•••
Assail	4A	•••	•••	•••	••	•	•••
Voliam Flexi	4A+28	•••	•••	•••	••	•	•••
Fulfill	9B	••	•••	•••	••	•	••
Beleaf	9C	•••	•••	•••	•••	•	•••
Movento	23	•••	•••	•••	•••	•••	•••

•••	Good residual control (7-14 d)
••	Marginal residual control (4-6 d)
•	Poor residual control (1-3 d)



A) Lettuce Aphid (FGA) mature alate, B) Mature LA apterous nymph, B) LA Alate; note the dark thorax and cornicles, D) FGA apterous immature forms; note the red color of abdomen and thorax

# Winged (alatae) Aphids on Desert Lettuce

Dark abdominal dorsal markings

No abdominal dorsal markings

Abdominal Dorsal Patch

Dark patch on upper abdomen  
Antennae Tubercle Convergent  
Cornicles dark and swollen



Green Peach aphid

Abdominal Dorsal Stripes

Tips of cornicles dark, thorax light  
Abdomen usually green in color



Foxglove aphid

Cornicles and thorax dark  
Abdomen brown - red in color



Lettuce aphid

Pear shaped with red eyes,  
Abdomen green with white, waxy stripes  
Legs and cornicles light



*Acyrthosiphum lactucae*

Body elongate, large, no markings  
Legs segments dark, tips of cornicles dark  
Cauda and cornicles are long  
Thorax light, abdomen green



Potato aphid



Plate 1. Pictorial Key for the Five major aphid species found in lettuce (alate forms)



## Wingless (apterous) Aphids on Desert Lettuce

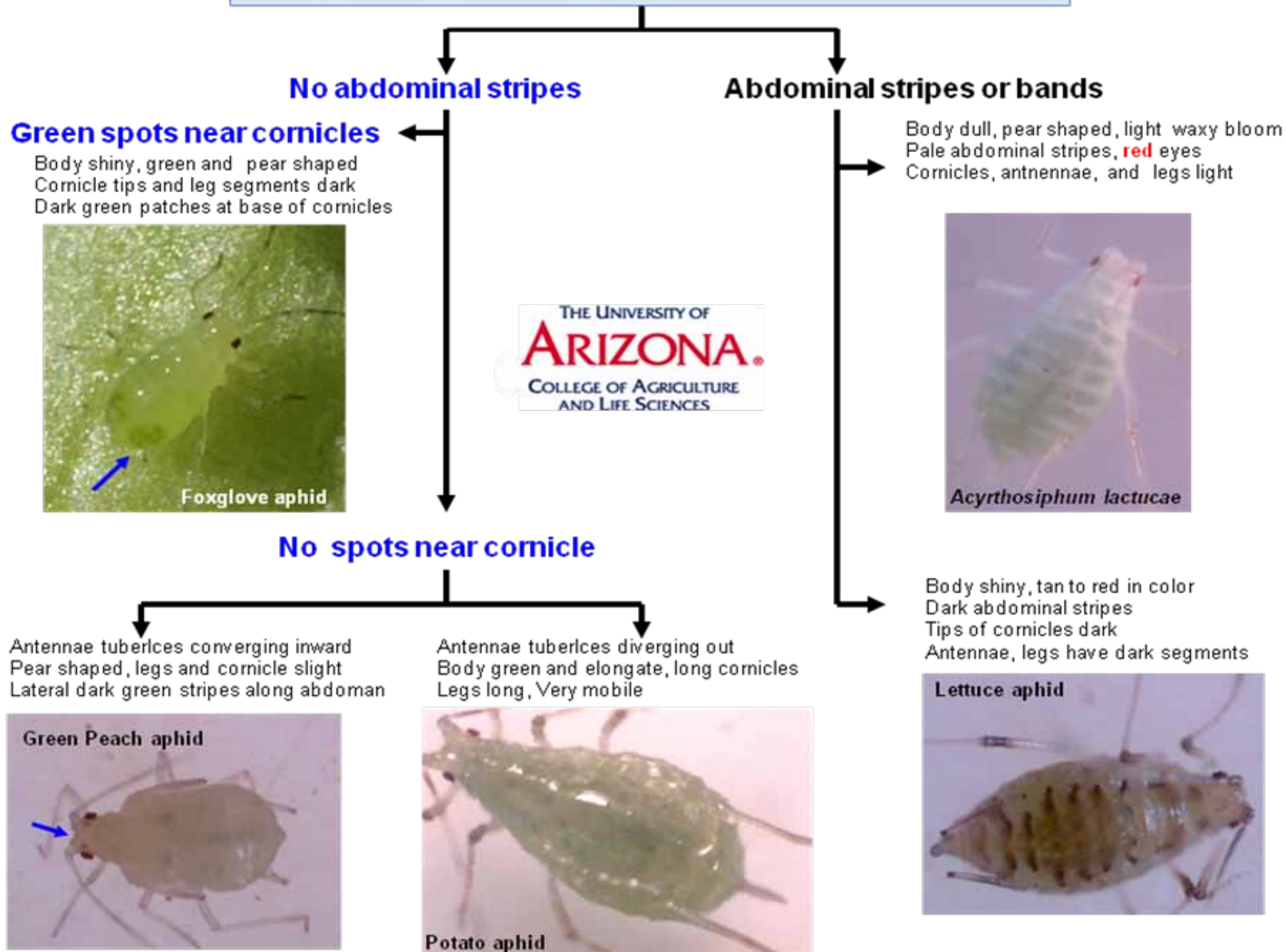


Plate 2. Pictorial Key for the Five major aphid species found in lettuce (apterous forms)