Lettuce Aphid on Desert Lettuce -2022

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Lettuce Aphid *Nasonovia ribisnigri*

Description and Seasonal Development
Very little information on the Lettuce Aphids (LA) biology under desert conditions has been reported. However, LA appears to be most reproductively active when average temperatures are above 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 quite spindly giving it a spider-like appearance. A pictorial key for identification of LA is shown in Plates 1 and 2.

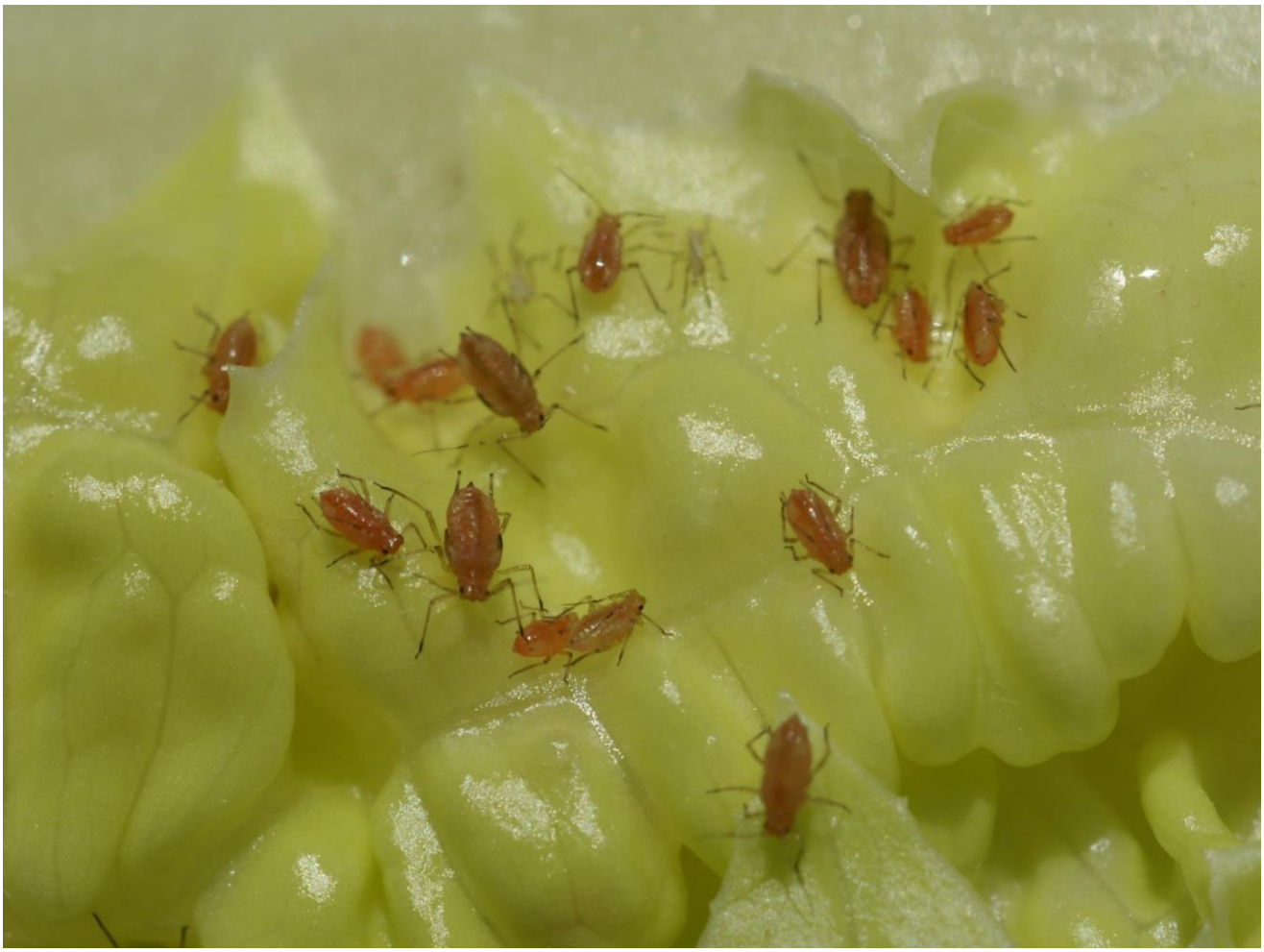
Economic Damage: LA are only found on lettuce crops (iceberg, romaine, butter, leaf), and unlike other aphid species in lettuce, the adults tend to deposit live nymphs near the growing point of plants. They continue to feed and reproduce deep within the plant on young newly developing leaves. In head 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

In general, soil applied neonicotinoids are poor against lettuce aphid. Fields not planted with imidacloprid or thiamethoxam are routinely treated with foliar insecticides upon detection of aphid colonization. For most aphid species, 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. With lettuce aphid, the threshold is much lower. Because lettuce aphids can rapidly reproduce, sprays should be applied upon detecting colonized nymphs in terminal growth.

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 lettuce aphids but has a restrictive REI and PHI. Repeated applications will probably be necessary, depending on time to harvest and aphid pressure. 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. Most older products have poor contact activity against lettuce aphids.

Several of the newer products overall offer good residual control of most aphid's species in leafy vegetables and cole crops, but most are weak against lettuce aphid including Beleaf, Fulfill, Assail and the other foliar neonicotinoids. Sequoia and Sivanto are translaminar insecticides that immediately suppresses the aphid activity and is non-toxic to beneficial insects. They are effective if applied to exposed colonies but are not generally capable of controlling heavy lettuce aphid infestations within heads, hearts, and other protected leaf areas on leafy vegetable crops. Similarly, Versys and PQZ, two new insecticides have good aphid activity, but are not capable of controlling lettuce aphid within heads. Movento is the only aphicide that can consistently control lettuce aphids in lettuce. It is an excellent insecticide for aphid control that provides systemic activity against aphids as a foliar spray. Because of its systemic activity and IGR-like mode of action, t is slow acting under cool, cloudy weather, but has shown excellent activity against lettuce and foxglove aphids, particularly in warm sunny weather.



Aphid Management in Desert Produce Crops - 2022

THE UNIVERSITY OF ARIZONA | COLLEGE OF AGRICULTURE AND LIFE SCIENCES | COOPERATIVE EXTENSION | Yuma Agricultural Center

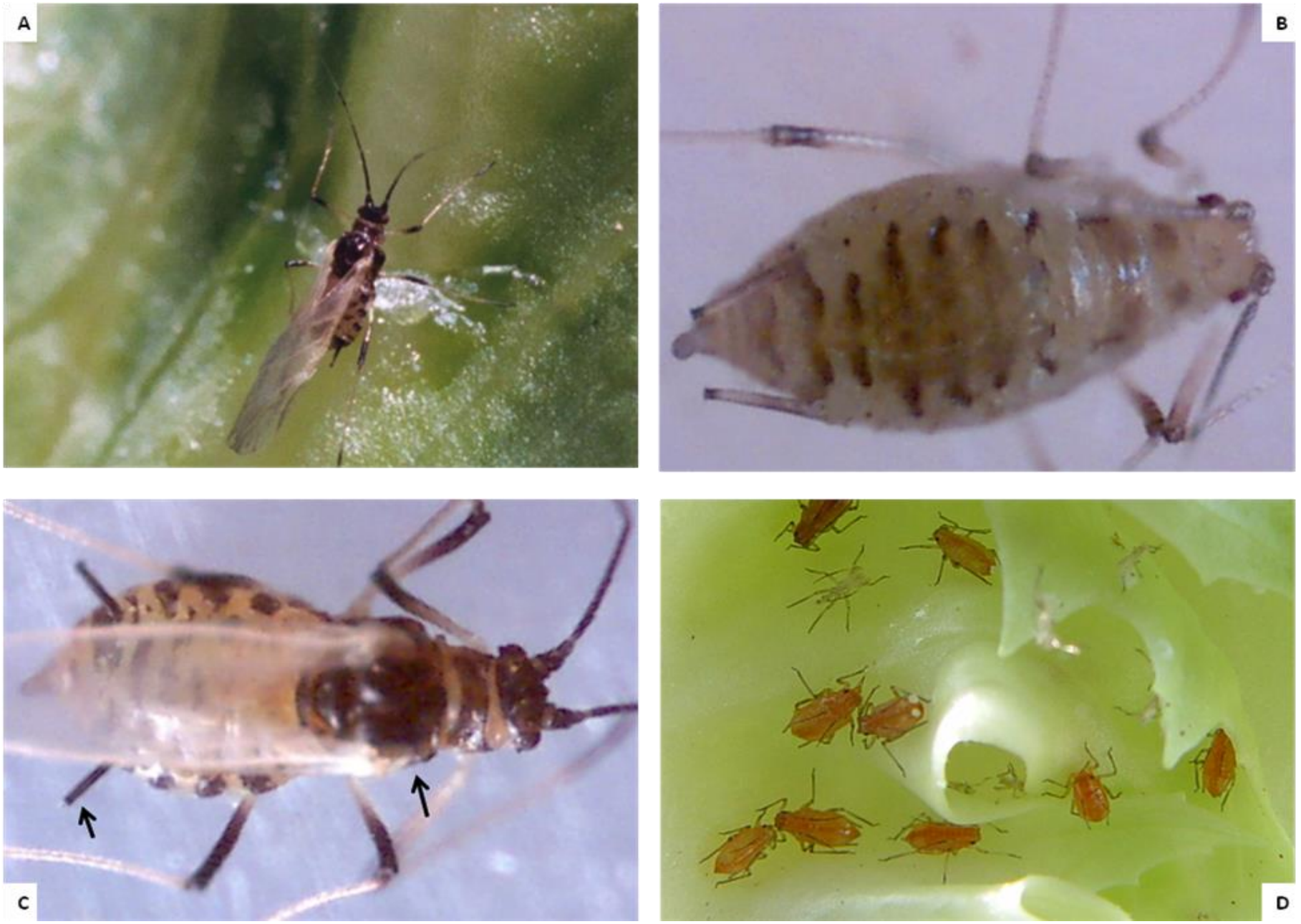
Relative Efficacy Index For Aphids in Desert

Product	IRAC MOA	Green peach	Potato aphid	*A. lactuca* [1]	Foxglove aphid	Lettuce aphid[2]	Cabbage aphid	Comments*
Lannate	1A							Tank mix with another product ; provides thrips control; PHI: 10 d on lettuce;.
Dimethoate	1B							Tank mix with another product ; has some thrips activity; PHI: 7 d on broccoli, cauliflower; 14 d on leaf lettuce
Orthene	1B							Tank mix with another product ; provides thrips control; PHI: 21 d for head lettuce and celery ; 7 d on cauliflower
Bifenthrin	3							Numerous generics available; tank mix with another product at >4 oz for best control; PHI:
Imidacloprid	4A							Admire Pro and generics; Soil: use top of label rate for higher best residual aphid control; PHI: 21 d on all crops
Platinum/ Durivo/Actara	4A							Soil: use highest rate for residual aphid control; PHI: 30d on all crops; effective as post-plant side dress . Foliar: use high label rate, PHI: 7 d
Assail	4A							Use at high rates (4 oz for Assail 30G); PHI: 7 d on leafy vegetables and Cole crops
Sequoia	4C					**		Use at higher rates (3.0 oz) when lettuce aphid present; PHI: 3 d on leafy vegetables
Sivanto	4D					**		Use at high rates (>10 oz) when lettuce aphid present; PHI: 1 d on leafy vegetables and Cole crops;
Versys	9D				**	**		Use at higher rates (>1.5 oz) when foxglove and lettuce aphid present; PHI: 0 d on leafy vegetables
PQZ	9B				**	**		Use at higher rates (3.2 oz) when foxglove and lettuce aphid present; PHI: 1 d on leafy vegetables
Fulfill	9B							Tank mix with another product for green peach aphid, foxglove aphids; Initiate sprays at first signs of aphids, PHI: 7 d
Beleaf	29							Use at high rates (2.8 oz); PHI: 0 d on leafy vegetables and cole crops
Movento	23							Use a penetrating adjuvant at 0.25%v/v or higher; PHI: 1 d for Cole crops, 3 d for leafy vegetables

Good residual control
Marginal control; suppression
Poor control

[1] *Acyrthosiphon lactucae* ; no common name
[2] *Nasonovia ribisnigri;* aka "red aphid"

*** Always consult the label before applying any of these products on leafy vegetables or cole crops.**
**** Has activity, but best control achieved on smaller, open plants when aphids are exposed to direct sprays.**



A) Lettuce Aphid mature alate, B) Mature apterous adult, C) Alate; note the dark thorax and cornicles, D) Apterous nymphs; note the red color of abdomen and thorax