



Attracting and Sustaining Aphid Natural Enemies in High Tunnels **Update**

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Aphids are the #1 pest of vegetables in Northeastern high tunnels. They stunt plant growth, secrete sticky honeydew, transmit virus diseases and cost growers considerable time and resources to manage. To combat aphids, some growers spray chemical insecticides, which pose a threat to human health and the environment. Organic growers either do nothing, or spend a lot of money on frequent releases of natural enemies.



Potato aphids infesting tomato.

Plant-mediated IPM systems (e.g., indicator, banker, and habitat plants) offer innovative, plant-based tools to manage aphids and other pests in high tunnels at low inputs. We have multi-year projects to evaluate these IPM systems for



Habitat plants in tomatoes.

high tunnel vegetables across ME, NH, VT and PA. We are testing habitat plantings in the summer on tomatoes and in winter on leafy greens. Alyssum, beans, marigolds, borage, calendula, viola and dill are being tested as habitat plants for the summer season and alyssum, beans, marigolds, calendula and viola for the winter season. These plants provide pollen and nectar in the absence of the prey or act as indicator plants for pests and natural enemies. We are determining if these systems support and enhance populations of commercially available and naturally occurring beneficial insects.

To date, over 2,500 natural enemy individuals were encountered on habitat plantings. An average of 4 (summer) and 6 (winter) natural enemies were observed on habitat plantings over the experiment duration. Common visitors were parasitic wasps and their mummies *Orius* adults and nymphs and syrphid adults. Lacewings, assassin bugs, spiders and various lady beetle life stages were also observed (see back page for commonly encountered natural enemies). The greatest abundance and diversity of natural enemies were on alyssum, borage, calendula and dill. Alyssum had the greatest tolerance to high heat and cold, flowered throughout most of the growing season, was non-invasive and easy to care for, easy to grow and least attractive to aphids. Borage and calendula, although attractive to natural enemies, were susceptible to aphid infestations. In addition, borage tended to become overbearing and volunteered after removal and calendula took a long time to flower. These results suggest alyssum may be a beneficial habitat plant for attracting and sustaining natural enemies for year round high tunnel production.

For more information on these projects, please view the following files on our website:

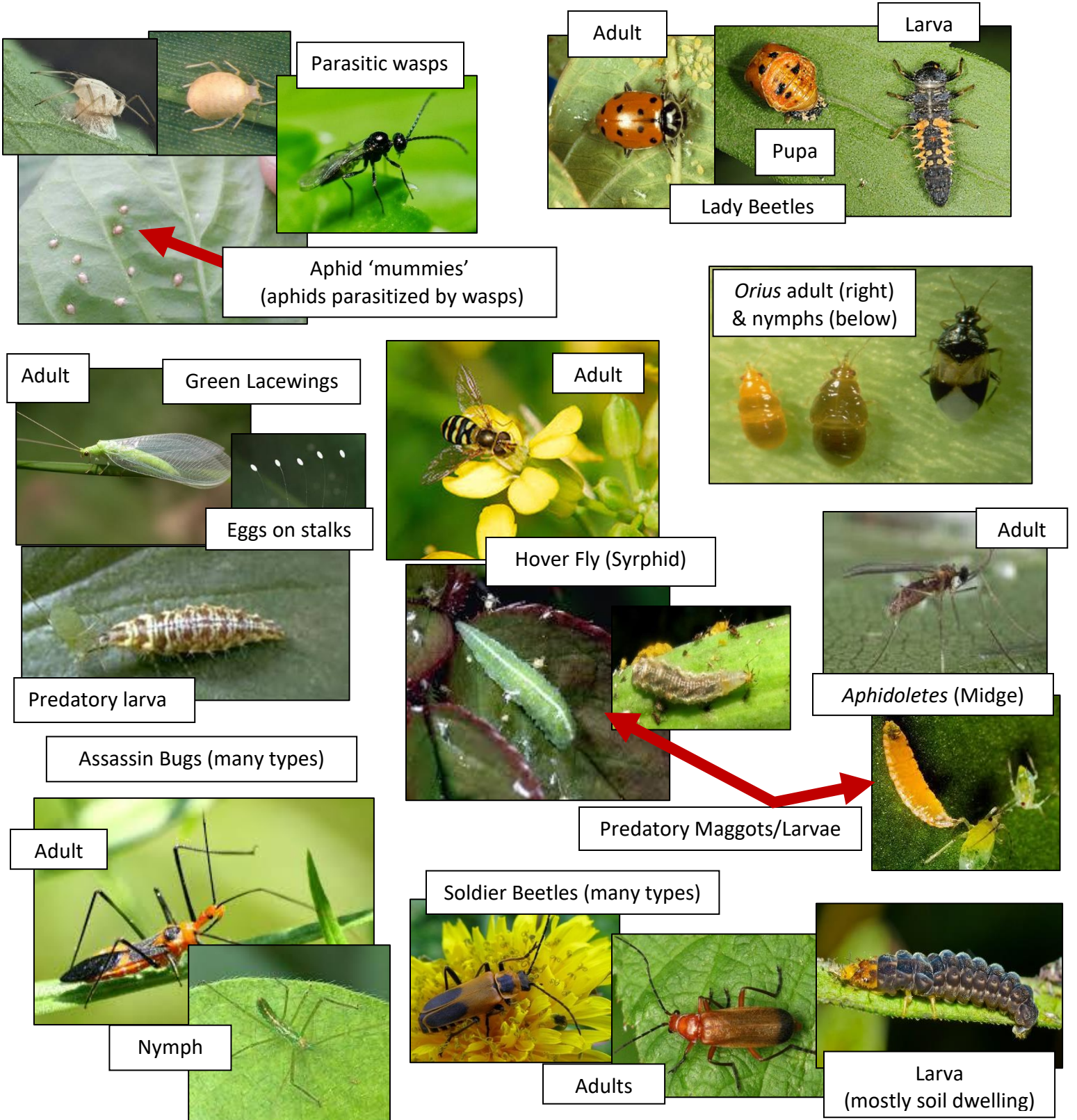
<https://www.uvm.edu/~entlab/High%20Tunnel%20IPM/HighTunnelIPM.html>

Bringing In The Other Good Guys (review wild natural enemies pests & strategies for attracting them).

High Tunnel Pests & Their Natural Enemies (review key pests & their natural enemies).

Aphid ID Webinet: A short picture based learning tool.

Commonly Encountered Aphid Natural Enemies



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