SGGA NEWS

April 2021

SGGA PRESIDENT'S MESSAGE

"Life is a marathon, not a sprint; pace yourself accordingly."

– Amby Burfoot

Growing up, I was anything but athletic. Yep you guessed it –picked last for every team. But as an adult I have always exercised for my mental health. About 8 years ago I started running half marathons. Slow as turtle – but I completed 5 races. Running taught me how to persevere, and dig deep. So when I moved from greenhouse employee to owner, it felt similar – digging deep, running up hill.

Every spring I equate the turning on of the furnaces and the sprouting of the first seeds as having a new born. I get little sleep, both from stress and excitement. I don't venture too far away from my "baby" and I definitely make all the decisions. As the weeks go on, the plugs and liners come in by the thousands. The plants get stronger, and pretty soon I am able to let go a bit, delegate work, and catch up on paperwork. Some weeks my hands don't even touch dirt.

I have learned the rhythm – we make premade meals for the freezer, get ahead of other commitments and then the doors open. Like at the starting line, fresh- full of nervous energy. As the weeks of the season go on, all reserves are depleted, we start to tire, but we stick with it, put a smile on our faces, and welcome the next customer. We ride the waves of the trends, take suggestions, write impossible requests down, never to be fulfilled. We push and push, then it is over, The end of June comes and we cross the finish line, exhausted. We wonder why we put ourselves through all the work, then start planning for next year....

My hope for your season is to be "covid busy" without all of the "covid stress". But in the end, just keep pushing through, and when you need, take a pit stop for your mental health.

– Tammy Lauinger
President SGGA

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2021 MEMBERSHIPS NOW DUE

Saskatchewan Greenhouse Growers Association

- Access to Tag Discount Program
- Access to Tray and Box Discount Program
- Subscription to SGGA's Newsletter
- Scholarship Funding
- Industry support through other mentors and Board of Directors
- Member Discount to Annual Conference and Learning Opportunities
- Industry Updates and Networking Opportunities
  - Industry Liaison to Government
  - Covid Support for your Business
- Member on Facebook forum

NEW MEMBERSHIP PERKS

- Covid Support for your Business
- Promotion of your business on New Facebook Group – Flowers & Gardens – Sask Connection for Backyard Enthusiasts
- Copy of the Industry Suppliers Guide
- Access to winter 2020-2021 virtual learning events and coffee talks (member exclusive)
- SGGA members tour maps (the SGGA will be creating and sharing with the public, tour maps to guide garden enthusiasts on where to go for local flowers and produce)

On your behalf the SGGA is pleased to represent the greenhouse industry, addressing topics important to your business at the industry and government level. Your membership is important and entitles you to share your opinion and concerns with the board.

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www.saskgreenhouses.com

SGGA verified members will receive SGGA member rates on tag orders placed with:

Horta-Craft

Horta-Craft Limited
www.horta-craft.ca

Qualifying members must provide verification of 2020-21 SGGA membership when submitting orders to Horta-Craft Limited for group pricing.

SGGA 2021 Newsletter Advertising

Advertising Option	Member Fee	Non-Member Fee
Full Page 7.25″ x 9.75″	$110.00	$165.00
Half Page 7.25″ x 4.8″ (horizontal) 3.5″ x 9.75″ (vertical)	$ 85.00	$127.00
Quarter Page 3.5″ x 4.8″	$ 60.00	$ 90.00
Business Card (1/8 Page) 3.5″ x 2.3″	$ 35.00	$ 52.00
Full Page Insert	$ 75.00 you print $ 125.00 we print	$ 125.00 you print $ 200.00 we print

2021 DISTRIBUTION DATES

Content Deadline	Distribution Deadline
January 6, 2021	January 15, 2021
March 24, 2021	April 1, 2021
July 28, 2021	August 6, 2021
October 6, 2021	October 15, 2021

Contact the SGGA OFFICE to book your advertising space!

Insect Control in the Greenhouse Using Biologicals

By Jackie Bantle

Many greenhouse growers are looking for ways to reduce pesticide use in their greenhouse: both for their own safety and the safety of their customers. Using biologicals (or beneficial insects) along with 'soft' chemicals that will not harm biologicals can help to make your greenhouse a healthier place for everyone.

One of the most important starting points with insect control in your greenhouse is to identify your insects correctly. Not only is it important to know the difference between an aphid, thrip, white fly, spider mite, fungus gnat or shore fly but one must recognize that there are even different species of each of those pests. For example, a green peach aphid will not necessarily be parasitized by the same biological predator as a potato aphid. Few biological predators are generalists. To help you identify your pest, make sure you have a good magnifying glass: ideally it should be able to magnify from 5 to 20x. A dissecting microscope is not necessary but is an excellent piece of equipment to have on hand if you can afford it. Erect or hang yellow sticky traps throughout your greenhouse crop to help you monitor the bugs (good or bad) that are in your greenhouse.

Yellow sticky cards monitoring insects in greenhouse

Good reference materials are also necessary to correctly identify greenhouse insects. I recommend the book, 'Knowing and Recognizing' by M.H. Malais and W.J. Ravensberg (ISBN 90 5439 126 X) or websites such as: Common Greenhouse Insects and Mites – Identification and Management **https://webdoc.agsci.colostate.edu/bspm/InsectInformation/Talks2018/Greenhouse.pdf** from Colorado State University and Koppert's retail website which thoroughly describes insect pests and provides excellent insect descriptions and photos **https://retail.koppert.ca/pages/pests**.

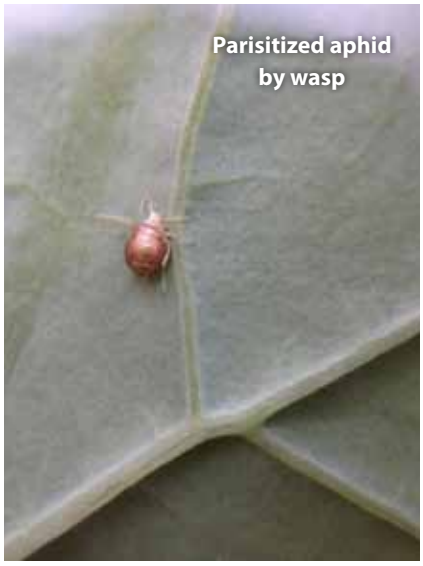
Following is a list of the most common greenhouse pests and recommended biological controls for these pests.

Aphids

The green peach aphid *(Myzus persicae)* is the most common aphid pest of greenhouses in western Canada. Other aphid species that can be of concern include: the melon aphid *(Aphis gossypii)*, the potato aphid *(Macrosiphum euphorbiae)* and the foxglove aphid *(Aulacorthum solani)*. All of these species can develop winged forms, especially when aphids are

Black Aphids on barley plant in greenhouse

exposed to cooler temperatures. The potato aphid is yellowish-green to pink in color and is the largest of these aphids. Potato aphids quickly drop off the leaves when disturbed. Green peach aphids are usually light green in color, although the winged forms of this aphid can have black or brown coloured heads. Melon aphid adults are black or olive


Parisitized aphid by wasp

green to yellowish green, depending on how overcrowded they are on a plant. Foxglove aphids are midway in size between the potato and green peach aphids. Foxglove aphids are shiny light yellowish green to dark green in color with a pear-shaped body. Other aphids are oval in shape. All aphids produce live young and can reproduce quickly.

Biological controls recommended for aphids include: parasitic wasp - *Aphidius colemanii* for small aphids like the green peach aphid and the melon aphid. *Aphidius ervi* and *Aphelinus abdominals* are recommended for the larger potato aphid. *Aphidius matricariae* is a parasitic wasp that will attack several different aphid species. Some growers have had success with *Chrysopa carnea* (lacewings) whose larvae will feed on aphids however, I have found native lacewings to perform better outdoors than purchased lacewings in a greenhouse.

Lady beetles are also highly recommended for aphid control in the greenhouse but it has been my experience that introducing adult lady beetles into the greenhouse does not provide much aphid control. The lady beetles are often in the life cycle stage where they tend to disperse from the large group to lay their eggs. Most of the time, the ladybeetles are found dead up against the greenhouse glass or plasic as they try to fly out of the greenhouse to brither light to lay their eggs. Furthermore, the lady beetles that we receive as beneficial insects for our greenhouse are a different species than the native lady beetle: this has the potential to have a future negative impact on our native lady beetle population.

Thrips

Controlling thrips in the greenhouse in one of the biggest challenges of western Canadian greenhouse growers. Although thrips are one of the tiniest insect pests, they can easily destroy growing points and damage blossoms and leaves with their rasping mouthparts thereby decreasing yields and making bedding plants unsaleable. Greenhouse thrips have developed resistance to most of the chemicals used for their control. Luckily, there are several beneficial insects that can make a big difference in thrip control in the greenhouse. Western Flower Thrips *(Frankliniella occidentalis)* and onion thrips *(Thrips tabaci)* are the most common species in western Canadian greenhouses. A standard beneficial insect that we constantly use in the U of S agriculture greehouse against thrips is *Amblyseius swirskii*. *Amblysius swirskii* are predatory mites which are delivered in a breeding sachet that is hung on the plant or placed on the soil. The predatory mites eat thrips larvae as well as whitefly eggs and larvae. Other preditory mites that have been know to parisitize thrips larvae include: *Amblyseius degenerans*, *Hypoaspis* mites and *Neoseiulus cucumeris*

… continued …

Amblyseius swirskii sachet in pea pot

(formerly known as *Amblyseius cucumeris*). *Transeius montdorensis* is a predatory mite that eat the first and second larval stage of thrips as well as eggs and larvae of the greenhouse whitefly however, this predatory mite should be used as a preventative measure. *Transeius montdorensis* will not be able to bring a large established infestation of thrips or whitefly under control.

Whitefly

Although whitefly is not a common insect pest in bedding plant production, they can be a major pest in tomato, pepper, eggplant and poinsettia production. The most common whitefly species in western Canadian greenhouses are the greenhouse whitefly *(Trialeurodes vaporariorum)* and the silverleaf whitefly *(Bemisia argentifolii* and *Bemisia tabaci)*. The most common beneficial insect control for whitefly has been the black parasitic wasp, *Encarsia formosa*. *Encarsia formosa* eggs are suspended on a cardboard card which is then hung on greenhouse plants. As the *encarsia* eggs hatch, the wasps prey on whitefly eggs and larvae. *Eretmocerus eremicus* (a lemon yellow parasitic wasp) is also recommended for greenhouse whitefly control. Both wasps attack the larvae and eggs of the greenhouse whitefly. *Delphastus pusillus* is a small predatory beetle found in the ladybug family. *Delphastus* works well in whitefly hotspots and are capable of attacking adult whiteflies: when used with *Encarsia*, the two predators provide excellent whitefly control in the greenhouse.

Spider Mite

Certain plants coupled with dry conditions provide a perfect environment for the development of spider mite infestations. Other than misting infected plants several times/day to disrupt the spider mite life cycle or moving a mullein banker plant full of *Dicyphus hesperus* (see the discussion further down on 'Banker Plants'), I have had limited success with beneficial insect controls for spider mites in the greenhouse. Most of the time, a lack of success in having beneficial insect survive in the greenhouse has nothing to do with the beneficial insects themselves but rather with the conditions in the greenhouse. The most commonly recommended beneficial insect predator for spider mites is the predatory mite, *Neoseiulus californicus* (formerly known as *Amblyseius californicus*). *Neoseiulus califonicus* works against several types of greenhouse spider mites by piercing their prey and sucking out their insides. *Phytoseiulus persimilis* are voracious predatory mites that will actually venture

Dicyphus hesperus on mullein leaf

into the webs of the spider mites to attack their prey. The key to *Phytoseiulus persimilis* survival in the greenhouse is 60% humidity or higher. The larvae of the gall midge, *Feltiella acarisuga*, also prey on spider mites.

Fungus Gnats and Shore Flies

Moist greenhouse media is a perfect breeding ground for fungus gnats and shore flies. Although fungus gnats will not cause significant damage to above ground plant parts, if the infestation is severe enough, fungus gnats can negatively impact the root system of any plant. Drier soil conditions and yellow sticky cards can help to control fungus gnats, one of the best control methods for fungus gnats in the greenhouse is *Steinernema feltiae*. *Steinernema fletiae* are nematodes (very small worms) that are applied using a soil drench. The nematodes live in the media, preying on fungus gnat larvae as well as adult thrips and their pupae. *Hypoaspis* mites (which can be used to control thrips larvae) are also known to prey on fungus gnat and shore fly larvae.

Banker Plants

Sometimes, it takes a while for a beneficial insect to become established in a greenhouse before it can be useful as a predator. In these cases, it is important to have the beneficial insect established in the greenhouse prior to establishement of the crop. This is where banker plants become important. Banker plants are plants that are different from the primary crop being grown. Banker plants provide a home and food (pollen or other plant part or possibly a host pest) for the desired predatory insect.

Orius insidius, also known as Minute Pirate Bug, is an excellent predator for thrips in the greenhouse. However, it takes up to 10 weeks for *Orius* to become established in the greenhouse crop: meanwhile, a thrips population could completely decimate a crop within 10 weeks. 'Purple Flash' pepper plants have been found to be excellent host plants for *Orius insidius*. Releasing *Orius insidius* onto 4-6 week old 'Purple Flash' pepper plants just as a regular crop of peppers are being seeded allows the *Orius* to be ready to prey on any emerging thrips.

Another example of a banker plant/predator relationship is *Dicyphus hesperus* being established on mullein *(Verbascum thapsis)* plants. *Dicyphus* is a generalist predator that will attack white fly, aphids and two spotted spider mites. *Dicyphus* survive very well on mullein banker plants and will be ready to attack any spider mite or whitefly infestation at a moment's notice.

Summary

The recommendations that I have provided in this article are based on information that I have read along with my personal experience with beneficial insects in the Agriculture Greenhouse at the University of Saskatchewan. I am not an expert on the subject. Using biological controls in your greenhouse can seem expensive in the beginning. It is important to work with experts in the field. For some basic information, check out the BioBest website (**https://www.biobestgroup.com/**), the Koppert Canada website (**https://www.koppert.ca/pests-and-diseases/solution-finder/control/**) and Natural Insect Control (**https://naturalinsectcontrol.com/index.php**). Contact the company directly and have one of their sales people help you out. Your sales person should have tons of knowledge and all sorts of advice to help you use beneficial insects in the most cost effective manner.

Remember that once you are using beneficial insects, many of the chemicals that you may have used in the past are no longer an option as they will also kill your beneficial insects. The sales people in the company will be able to help you transition over to this more environmentally friendly method of dealing with pests. We have been using beneficial insects in the U of S Agriculture Greenhouse for over 10 years and we are still learning. There are new products and innovations happening all the time. It's an exciting area of development, it's doable and it's safer for us, our staff and our students (our customers): that's why we continue to use beneficial insects in our greenhouse.

AVAILABLE FOR SGGA MEMBERS COVID-19 SIGNS

The SGGA has created all the required signs you will need to implement the legislated policies. These are available to SGGA members – contact the SGGA office to attain electronic PDF files for self-printing: **saskgga@gmail.com**.

Thank you for becoming a 2021 SGGA member!

Whether you are a renewing member or a new member, we are glad you have registered as an official 2021 producer with the Saskatchewan Greenhouse Growers Association.

On your behalf the SGGA is pleased to represent you, the grower and the greenhouse industry as a whole, addressing topics important to your business at the industry and government level. Your membership is important and entitles you to share your opinion and concerns with the board and also, provides you with support and access to many SGGA membership perks…

- Sign Up for a 2021 SGGA membership prior to February 15th and receive a **$25 EARLY'S Farm and Garden Centre gift card** to use towards the purchase of any products they carry. (Thank you **https://www.earlysgarden.com/** for your support of the SGGA & our members) Consider discussing with the staff at Early's the possibility of bulk purchasing discounts of products you need for your operation available for Saskatchewan Greenhouse Growers.
- A **Greenhouse Canada Magazine Subscription** (retail value $39 + tax)
- **Access to virtual training sessions & members coffee talks which are being offered throughout the 2021 winter months**, see more details on our website at **https://saskgreenhouses.com/** - for members only
- Access to the **Tag Discount Program** offered to our members by Horta-Craft Ltd.
- Access to the **Tray and Box Group Purchase Discount**
- **Subscription to SGGA's quarterly Newsletter**
- **Scholarship Funding** Access for those entering post-secondary education
- **Industry support** through peer-to-peer mentorship and the opportunity to connect with the elected Board of Directors
- **Member Discount** to the Annual Conference and Learning Opportunities
- Regular and Direct **Communication** Update with Information on Industry Updates, Networking Opportunities and information of interest to our members
- **Support for your business** during times of challenges like during the Covid Crisis
- **Promotion of your business** on our Public Facebook Group "Flowers & Gardens – Sask Connection for Backyard Enthusiasts"
- A Copy of the SGGA **Industry Suppliers Guide**
- **Advertising your Operation** to the general public : SGGA Members Tour Maps (the SGGA will be creating and sharing with the public, tour maps to guide garden enthusiasts on where to go for local flowers and produce)
- **SGGA Members Facebook Page**

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SASKATCHEWAN GREENHOUSES

COVID-19 REGULATIONS

UPDATED APRIL 19, 2021

Visit the Greenhouse guidelines in the Reopen Saskatchewan Plan here:

https://www.saskatchewan.ca/government/health-care-administration-and-provider-resources/treatment-procedures-and-guidelines/emerging-public-health-issues/2019-novel-coronavirus/re-open-saskatchewan-plan/guidelines/greenhouse-and-landscaping-guidelines

RE: number of customers in your greenhouse, the government has advised …

"The maximum capacity would depend on the size of your business, if it is 20,000 Sq Ft or more it is based on 30% of your allowed capacity, if it is under then the maximum you can have in the greenhouse at once it based on you being able to distance the customers as per the requirements. The same rules would apply for a greenhouse. I have include the section of the Public Health Order that speaks to capacity below:

(s) For the purposes of this subsection, the following definitions apply: "large retail store" is defined as a retail store that occupies 1,858 square metres (20,000 square feet) of floor space or more in a building, or portion of a building. The capacity within all retail establishments is limited as follows:
  (i) Owners or operators shall ensure that the number of individuals located within a large retail store at any one time shall not exceed the lesser of the following: i. 25 percent of the occupant load as determined in accordance with the National Fire Code 2015 Division B, Clause 2.7.1.3.(1)(a).
  (ii) Owners or operators shall ensure that the number of individuals located within a retail store that is not a large retail store at any one time shall not exceed the lesser of the following:
    i. 50 percent of the occupant load as determined in accordance with the National Fire Code 2015 Division B, Clause 2.7.1.3.(1)(a), or
    ii. ensure that 2 metres of physical distance is maintained between non-household members at all times. For clarity, owners and staff members are not included in the occupant load calculation. Visitors to Special-Care Homes (t) Visitors to special-care homes designated

The capacity limits are based upon National Fire Code numbers. If you do not have that, ensure that patrons can maintain physical distance. Always try to manage lines and choke points.

The large retail restrictions likely apply to some of our members. Owners should use good judgement in determining whether people are able to physically distance and that staff are able to manage crowds. "

The Public Health Order can be found here:

https://www.saskatchewan.ca/government/health-care-administration-and-provider-resources/treatment-procedures-and-guidelines/emerging-public-health-issues/2019-novel-coronavirus/public-health-measures/public-health-orders

SGGA UPDATE

The SGGA group order of tropicals and box trays was a great success! Producers who order box trays and tropicals will be receiving their products in early April! Thank you for supporting the efforts of the association to help our members access products for their operations!

Virtual Workshop Recordings

SGGA held a series of 12 virtual workshops from October 2020 to March 2021.
Recordings of the following sessions are available to view for the cost of $25 / session or $200 for access to all sessions. Contact the office if you missed the learning workshops but would like to access the library of information!

Recordings Available:

- How to be #1: developing your niche/services to be the first choice for garden center in your area and attracting your target customer with Debbie Foisy
- SGGA Virtual Session: Tropical Plant Rage: What to Sell, Where to Get It and how to Grow It with Jackie Bantle
- SGGA Virtual Learning Event - Cuttings 101 with Michiel Verheul, High Q Greenhouse
- SGGA Tropicals Discussion
- Growing Tips and Advice to Share With Customers: They Won't Find That at Big Box Stores with Jackie Bantle
- SGGA Virtual Learning Session -Soil Mixes, What & How to Use Them with Michiel Verheul, High Q Greenhouse
- SGGA Virtual Learning Session - NEW YEAR, NEW FERTILIZER
- SGGA Fall Connect - Friday, November 6, 2020 (includes social media training)