# SGGA NEWS

July 2017

# 2017 Scholarship

Applications are now open for the 2017 SGGA Educational Scholarship. **Closing date is September 30, 2017,** with recipients to be announced at the SGGA Annual General Meeting during the Saskatchewan Green Trades Conference. To apply simply send a letter to saskgga@gmail.com explaining why you should be considered. Eligibility criteria is located on the SGGA website www.saskgreenhouses.com under the announcements tab.

## LET'S HAVE SOME FUN!!!!

**After all the hustle and bustle of the season, let's have a little fun.**

*SGGA Board Members would like to invite you to:*

## HOT DOG/HAMBURGER BBQ

Wednesday, August 16th

4:00 – 9:00 pm

Kinsmen-Wellesley Pavilion, Wakamow Valley, Moose Jaw

**No charge to SGGA Members & their families**

Wieners, hamburgers, buns, salads, condiments and games provided.

Please RSVP to Marj Haubrich @ 306-741-6464
or Louise Filarczuk @ 306-795-7930
by Friday, August 11th

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## SAVE THE DATES

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Green Trades
Conference & Tradeshow

**November 7th, 8th & 9th, 2017**


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# SGGA **PRESIDENT'S** MESSAGE

# Welcome to summer

**by Fred Gittings**

As I sit down to write this the days have turned sunny and the days are heating up. Many of you are undoubtedly thinking about your favourite lake to cool off. In the greenhouse vegetable business I'm sure many of my tomato and cucumber plants would love to join you but they have to stay here, drink plenty of water and look for shade to hide under.

For the first time Marj Haubrich and Louise Filarczuk of the SGGA board are organizing a barbeque for the membership at a park near Moose Jaw on August 16th. It should be a good excuse to get away from the daily routine and visit with some friends and fellow growers. I am looking forward to it but my tomato plants aren't invited. (I will bring a few to top off the burgers though.)

Glen Sweetman has been putting together an interesting list of speakers for our conference in November. It will be one of our best speaker line ups in a while; educational and practical. Meanwhile enjoy your summer and we'll see you at the barbeque.

## 2017 SGGA Membership

### MEMBERSHIP BENEFITS OVERVIEW:

- ✓ Access to Tag Discount Program
- ✓ Access to Tray and Box Discount Program
- ✓ Subscription to SGGA's Quarterly Newsletter
- ✓ SGGA's Website: http://saskgreenhouses.com/
- ✓ Member Discount to Annual Conference and Other Association Programs
- ✓ Industry Updates and Networking Opportunities
- ✓ Marketing Programs:
  - Select Saskatchewan Branding Program
  - Greenhouse Vegetable Branding Program
- ✓ Extension Programs:
  - On Farm Food Safety Seminars
  - On Farm Food Safety Manuals Available

***Download the …***

**2017 SGGA MEMBERSHIP FORM**

http://www.saskgreenhouses.com/resources/SGGA-Membership_form.pdf

## SGGA 2017 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 |
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| Deadline to Submit Print Ready Ads | Deadline to Submit Ad Content | Publication Distribution |
|---|---|---|
| January 11, 2017 | January 6, 2017 | January 25, 2017 |
| March 22, 2017 | March 17, 2017 | March 29, 2017 |
| July 5, 2017 | July 1, 2017 | July 12, 2017 |
| September 27, 2017 | September 22, 2017 | October 7, 2017 |

**Contact the SGGA OFFICE to book your advertising space!**

# Upcoming Fruit Events *at the University of Saskatchewan*

## Haskap Days Extravaganza

**July 19, 20, 21, 22 2017**

FOUR DAYS OF HASKAP!!! Attend part or all. Locations will be at various places at the U of SK campus. Registration is being handled by Haskap Canada at www.haskap.ca/haskap-days-2017/

## Cherry Field Day Tour

**Thursday, August 10, 2017**

**from 10:00am – 2:00pm**

Cost $25 + $5 for Pizza lunch

Location: U of S Horticulture Research Facility, 2909 14th Street East, Saskatoon

## Tree Grafting Workshop

**Friday, August 11, 2017**

**10AM - 3PM**

Grafting Workshop

Cost $50

Location: U of SK Hort Research Fields. 2909 14th Street East, Saskatoon

*(For detailed information, check the 'Upcoming Events' at: **www.fruit.usask.ca**)*


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# Sprayers and Spray Application Techniques

The most important goal in the application of agricultural pesticides is to get uniform distribution of the chemicals throughout the crop foliage. Underdosing may not give the desired coverage and control needed. Overdosing is expensive as it wastes pesticide and increases the potential for groundwater contamination.

Two general types of sprayers are available for greenhouse application of pesticides: hydraulic and low-volume. There are many variations of these that fit particular crops or growing methods.

In the hydraulic sprayer, a pump supplies energy that carries spray material to the target (plant foliage). Water is the carrier and the pump creates the pressure at 40-1000 psi. Spray material is usually applied to "wet" or "drip." Nozzles on the boom or handheld gun break the spray into small droplets and direct it to the foliage.

In a low-volume (LV) sprayer, spray material in a water or oil carrier is injected into a high-speed air stream developed by a fan, blower or compressor. In most LV sprayers, a small pump is used to inject a concentrate pesticide solution into the air stream. The speed of the air stream may be as high as 200 mph. To get sufficient coverage, the air within the foliage canopy must be replaced with air that contains the pesticide. As the droplet size is much smaller, good coverage can be achieved with less chemical.

## Sprayer Differences

One way to distinguish between a hydraulic sprayer and low-volume sprayer is by droplet size. Hydraulic sprayers produce a spray with most droplets in the 200-400 micron diameter range (thickness of the human hair is about 100 microns). Low-volume sprayers develop a mist (50-100 microns) or fog (0.05-50 microns). Small droplets from a mist or fog applicator can result in more uniform coverage and greater likelihood of contact with the insect or disease. In contrast to the hydraulic sprayer, spray material is usually applied to "glisten" as it is difficult to see the individual droplets on the leaf.

One disadvantage to smaller droplets is that they evaporate quicker when the humidity is low and may not reach the target. Another is that the tiny droplets tend to bounce or skip on the leaf surface. This can be overcome somewhat by adding a spreader and sticker.

## Types of Hydraulic Sprayers

A hydraulic sprayer contains the following components: tank, pump with agitator, pressure gauge, regulating valve, relief valve, control valves, piping and nozzles, power source and support frame.

- COMPRESSED AIR SPRAYER. The smallest sprayers are hand-carried, compressed air sprayers. They contain a 1- to 5-gallon tank with an air pump in the top and a wand with a nozzle for directing the spray. Their best use is for spot treatment of small areas. In operation, the tank has to be pumped up frequently to maintain pressure, and the tank must be shaken to agitate the chemical.

- BACKPACK SPRAYER. The tank in this sprayer holds about four gallons of material. A hand-operated pump pressurizes the spray material as the operator walks along, and the wand with nozzle directs the spray to the target. Its use is limited to small areas that can be reached from a walkway.

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- SKID-MOUNTED SPRAYER. With a tank size up to 200 gallons, these sprayers will fit onto an ATV or electric cart. They can also be mounted on wheels and pulled by hand or with a compact tractor. A small electric or gas engine powers the pump. The unit may contain a hose reel and gun or a boom with nozzles.

- IRRIGATION BOOM SPRAYER. With increasing production in plug and cell trays, the use of the boom sprayer has become an important tool for getting uniform watering. By installing three-way turrets with nozzles for irrigation, misting and pesticide application, one piece of equipment serves multi-purposes. An alternate method is to add a pesticide application boom to the same transport cart. An independent mixing tank, pump, filter and valves are needed.

- CENTRAL PESTICIDE APPLICATION SYSTEM. In gutter-connected ranges, it is possible to install a piping system that will deliver pesticides to any part of the greenhouse. Pesticide preparation and filtration are done in a mixing area. A single pump and piping that will handle the pressure developed are required. A hose can be easily attached to one or more outlets in each bay to apply the pesticide. The disadvantage is that the entire system must be drained and cleaned before changing to a new chemical.

## Low-volume Sprayers

- BACKPACK MIST BLOWER. A small gas engine and integral fan creates an air stream with a velocity of 100-200 mph. Concentrate spray injected into the air stream by a special nozzle is carried to the foliage by the air. The spraying technique is more complicated than with a hydraulic sprayer. The nozzle should be directed into the plant canopy to get good penetration and coverage, but it should be kept at least six feet away from the plants to avoid blast damage. The operator should visualize that all the air within the canopy must be replaced by the air from the mist blower.

- ELECTROSTATIC SPRAYER. Compressed air, given a negative electric charge as it travels through the nozzle, forms spray droplets and carries them to the plants. This helps to create more uniformly sized particles that disperse well because they repel each other. Charged particles are attracted to leaves, metal and some plastics; when they strike a surface, these particles create a momentary overcharge that repels other particles. These other particles land elsewhere on the leaf, so there is more uniform coverage. The simplest electrostatic sprayer is backpack-carried and contains a tank and spray gun. It requires an independent air supply to charge the tank. Other units are cart-mounted with an integral compressor powered by a gas engine or electric motor. Electrostatic sprayers work best if the spray distance is less than 15 feet.

- ROTARY DISK SPRAYER. The spinning disk is used to impact and break a stream of water into droplets that are 60-80 microns in diameter. A variety of sizes are available for greenhouse use.

- THERMAL FOGGER. This machine requires a specially formulated carrier that is mixed with the pesticide to improve uniformity of droplet size and distribution of the spray material. The carrier also decreases molecular weight, allowing the particles to float in the air for up to six hours, a disadvantage if you have to get into the greenhouse to care for the plants.

  In the operation of a thermal fogger, the pesticide is injected into an extremely hot, fast-moving air stream that vaporizes it into fog particles. Moving from one end of a greenhouse to the other, a thermal fogger can cover in as little as 15 minutes. Air circulation from an HAF system will give more uniform coverage and better foliage penetration.

  Temperature and humidity also affect the spray droplets. Because of the noise associated with the jet engine, hearing protection is recommended.

- MECHANICAL FOGGER. Also called a cold fogger, this device uses a high-pressure pump (1,000-3,000 psi) and atomizing nozzles to produce fog-size particles. Distribution of the spray material is through a hand-held gun or external fan unit. With the fan unit, the distance and amount of area that can be covered depends on the capacity of the fan. Multiple units or settings may be needed to cover large areas. As with other foggers, penetration and coverage may not be as good as with a mist or hydraulic sprayer. Droplets in the 30-micron size drop out of the air fairly quickly but droplets in the 5-micron size may evaporate or float in the air currents for hours. Small particles don't have the mass or velocity to move into heavy foliate; however, in most studies, good insect control has been achieved.

Safety is important when using spray equipment employing a high-pressure pump. Keep hands and arms away from the nozzle because at high pressure, spray particles can penetrate the skin very easily.

## Calibration and Operation

Before selecting the sprayer to use, check the label and the IPM guidelines for the particular pesticide that will be applied. These give the recommended application rate, the type of equipment best suited for the application, the style of nozzle and other information for best results. Based on the type of crop and its size, select the sprayer that will give a good balance between droplet size and coverage.

Calibrating sprayers is important to get good control without applying excess material. Low-volume sprayers can provide more uniform coverage with less spray material. Where applicable, most labels have recommendations for low-volume equipment.

When making a tank mix, both the dosage and water requirement need to be considered. The dosage, the amount of chemical that should be applied to a given area, is listed on the label. With most pesticides, a range such as 4-12 oz. per 100 gal. is given. Selection of the rate should be made based on

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the level of infestation, type and maturity of the crop, past experience and other variables. If this is the first time that the pesticide is being used, a dosage in the middle of the range is a good starting point.

The amount of water needed to cover the growing area depends on the type of equipment used. With hydraulic sprayers, a rate of 25-50 gal. per 10,000 sq. ft. is common. Low-volume sprayers use only 1/4-2 gal. per 10,000 sq. ft.

Most chemical labels state the amount of pesticide to be diluted in 100 gallons of water and not the amount of spray concentrate that is to be applied to a given area. Some labels now list the amount of chemical that should be applied per acre. The instruction manual that comes with each sprayer contains charts or tables that help determine how much spray material to mix with the water. This is usually based on a 10,000-sq. ft. area, so you will need to adjust the rate to fit the growing area to be sprayed.

## Spraying technique

The technique you use to spray crops is very important to get good coverage. It should be developed to fit the type of equipment that is to be used. With a handheld gun, a sweeping motion over the foliage will allow the spray material to penetrate and get to the underside of the leaves.

With fixed-fan type units, an airflow pattern needs to be established so that all the plant canopy receives the pesticide; location of the unit contributes to good air flow. Using an air circulation system, such as HAF, will enhance the movement and distribution of the fog and mist particles.

The fans should continue to operate for 30-60 minutes after the spraying operation is completed.

Observation should be made to ensure that the sprayer is operating correctly and that sufficient coverage is obtained. A good way to monitor coverage with a hydraulic or mist sprayer is to use strips of water-sensitive paper from a local spraying equipment supplier. The paper is attached to representative leaves in the plant canopy. When exposed to spray droplets, stains will appear indicating the size and number of particles that were received by the leaf.

For fog applications, evaluation of coverage can be made using a fluorescent dye in the water. Placing representative leaves under an ultraviolet or black light will show droplet size and distribution.

Another tool that can help promote better technique and coverage is to keep a log of the spraying operations and the results that were obtained. This should include the date, time and location of application; crop and pest; pesticide used; tank mix; and an evaluation of the results obtained.

Adjustments should be made in subsequent applications to try to improve the results.

Proper selection, calibration and operation of spray equipment is important in achieving optimal pest control, as well as in meeting environment and safety requirements.

Learn more about the advantages and disadvantages of low-and high-volume sprayers to help you choose the best one for your greenhouse.

*John W. Bartok, Jr., Agricultural engineer and extension professor-emeritus in the Natural Resource Management & Engineering Department at the University of Connecticut.* **Fact sheet taken from University of Massachusetts (Amherst) Centre for Agriculture, Food and the Environment**

# Meet SGGA Board Member

## MARJ HAUBRICH

After 27 years as a school administrative assistant, I decided it was time for a career change. Even with my love of plants, running a greenhouse operation was a very sharp learning curve! But after 4 years, I still love it and enjoy being in the greenhouse with the smell of dirt, green plants and warmth. Nothing is better than being in there when it is snowing outside or listening to the birds singing outside. I am very fortunate to have a neighbor and friend involved with the greenhouse sharing her expertise.

I've been on the SGGA board since the first year I started the greenhouse. The Board of Directors are an invaluable source of information for me as a new grower. I've met a lot of other growers through the SGGA and the Green Trades Conference. We share info and talk about plant problems, solutions and different ideas. I find the Green Trades Conference in November great for meeting growers, learning about new products, and meeting suppliers.

My husband and I live on a farm south of Hodgeville. We have an insurance agency and liquor franchise in town. We also have a few cattle and my husband drives school bus.

# SAVE THE DATES

## 2017 Saskatchewan Green Trades Conference & Tradeshow

**November 7th, 8th & 9th, 2017**

SASKATCHEWAN
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*Farm & Food Care launches Photo Contest*

# Up to $4,000 in cash prizes

June 1, 2017 - (Guelph) - Farm & Food Care is launching a nation-wide farm photo contest with $4,000 in cash prizes available for winners in six categories.

Winning photos will be used in the updated 2017 edition of The Real Dirt on Farming, a publication that answers common questions about food and farming practices in Canada. For more information on this publication and to view the 2014 edition, visit **www.RealDirtonFarming.org**. Photos may also be used in other Farm & Food Care initiatives.

## CATEGORIES

1. **Canadian Farm Scenes** – Capture the beauty of Canada's rural landscape;
2. **Farm Faces** – Unique farm family photos, farm friends or a photo of farmers at work;
3. **All about Animals** – Farm animals in the barn or field;
4. **Farm Innovation** – Technology at work on Canadian farms;
5. **Crazy about Crops** – Photos of crops being grown in fields, orchards or greenhouses across Canada;
6. **Farm Fun** – Be creative! We're looking for photos of people having fun while farming;

## PRIZES

- $350 first prize in each category
- $200 second prize in each category
- $100 third prize in each category

* *Non-winning entries used in The Real Dirt on Farming booklet will receive $50 per photo.*

## ELIGIBILITY

- All entries must be photographs taken in Canada.
- Entrants must own the rights to the photos they submit.
- The contest is open to all residents of Canada.

## PUBLICATION

- Winners' names and photographs will be published on **www.FarmFoodCare.org** and may be used in the 2017 edition of *The Real Dirt on Farming* or in other Farm & Food Care initiatives.
- Farm & Food Care reserves the non-exclusive right to publish any entry and/or use any entry in promotional and advertising materials. Photos published will be credited to the photographer where possible.
- By participating in this contest, each entrant agrees to provide Farm & Food Care with the non-exclusive rights to use their images. Participants agree to the terms and conditions outlined within.

## FORMAT

- Entries are to be digital photographs and submitted electronically as jpeg files to **contests@farmfoodcare.org** (Emails must be no more than 10 MB in size)
- Cropping of photos is permitted, tonal or colour corrections are acceptable.
- Winners will be required to submit a high-resolution file suitable for print reproduction (at least 300 dpi at 6 x 9 inches.)

## ENTRIES

- Photographs that have won any other contests or have been published in a magazine or newspaper (except online) are not eligible.
- Individuals can only win once per category, but may win in multiple categories.
- Limit of two entries per category per entrant.

****FARM SAFETY REMINDER – When taking photos for submission, please keep in mind the safety of those involved.*

## IDENTIFICATION

When submitting photos, the following contact information must be included:

- full name
- phone number
- email address
- province where the photo was taken
- category to be entered in

## DEADLINE

All entries must be received by email by end of day on July 14, 2017.

## JUDGING

The winners will be selected by a national panel of judges. Judges' decisions are final.

Farm & Food Care is a coalition of farmers, agriculture and food partners proactively working together to earn public trust and confidence in food and farming. Find out more at **www.FarmFoodCare.org**.

# SGTC Keynote Speakers

SASKATCHEWAN GREEN TRADES CONFERENCE

The SGGA is pleased to have two KEYNOTE SPEAKERS confirmed to present at the **2017 SGTC Conference** – Mr. Neil Mattson & Mr. Roberto Lopez.

Additional details on the line of speakers and presentation topics will be shared in the upcoming month. Watch for further details and remember to save the dates!

**Neil Mattson**

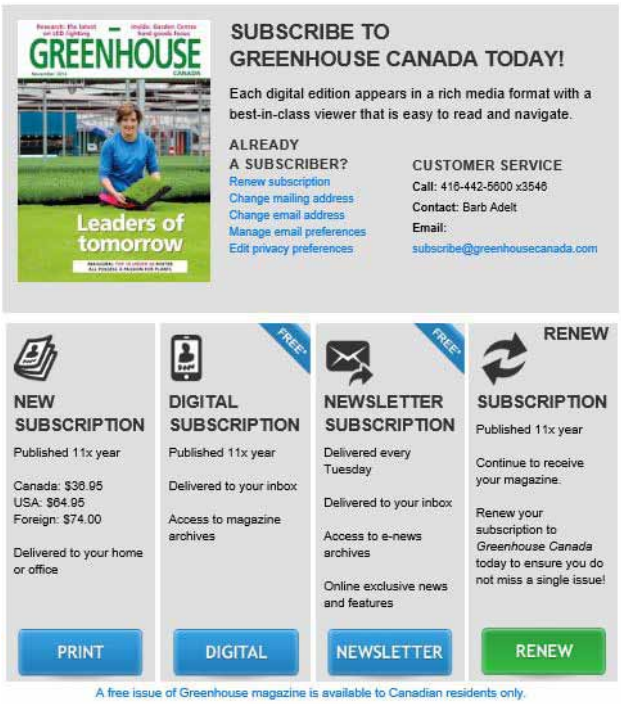
Neil Mattson, PhD is an Associate Professor and Greenhouse Extension Specialist in the School of Plant Science at Cornell University. Neil serves the greenhouse industry by conducting applied research and outreach related to increasing greenhouse production efficiency while decreasing energy, water, and fertilizer consumption. Recent research areas include: use of granular slow release fertilizer in bedding plant and vegetable transplant production, greenhouse supplemental lighting for vegetable crops, finishing bedding plants in unheated high tunnels, and practices to enhance the retail shelf life of bedding plants. Neil is the director of Cornell's Controlled Environment Agriculture Group.

**Roberto Lopez**

Our research focuses on propagation and production of young and finish plants (floriculture, leafy green, and culinary herb crops) in greenhouses, growth rooms/containers, warehouse-based plant factories, and vertical farms. Our primary emphasis is on how light (quantity, quality, and duration), substrate and air temperature, and carbon dioxide in controlled-environment agriculture (CEA) production influences crop timing, rooting, yield, quality, flavor, nutrition, and subsequent performance.

## ATTENTION SGGA members:

If you are interested in receiving an electronic copy of the **Greenhouse Canada Publication for FREE**, please sign up at **https://www.greenhousecanada.com/subscribe/**



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