SGGA NEWS

January 2023

SGGA PRESIDENT'S MESSAGE

"Often when you think you're at the end of something, you're at the beginning of something else."

– Anne Bradstreet

2022 was a challenging year for my business. Stock levels were depleted of everything it seemed. Minimum orders weren't even acknowledged, as my orders were counted in semi loads, not pallets. When the smoke cleared, the sales were down slightly. I have owned a greenhouse for 6 years (7 seasons) and this was the first year our sales didn't grow. Being down sales 10% means my kids don't get new shoes. But they did get shoes. Being down 10% sales means I have had the bank call a meeting, but the bills got paid. Everything in the end has worked out, even if that 10% put a pinch on my household.

The paradox of being a positive living person benefiting from negative things going on in the world has never suited me. Our industry thriving during history making worldwide struggles is bitter sweet to me. But the line is not that black and white. A lettuce crop failure three thousand miles away increases my vegetable sales. There is gaps in life when there is change. Someone will always fill it. My wish for you all is that the 10% be an increase in your sales this year, and that our industry thrives without a negative force driving it. I wish you happy endings and new beginnings.

– Tammy Lauinger
President SGGA

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Saskatchewan Greenhouse Growers Association
Box 68, Middle Lake, SK S0K 2X0
Phone: 306-367-2012 Fax: 306-367-2403
Email: saskgga@gmail.com Website: www.saskgreenhouses.com

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www.saskgreenhouses.com

Email: saskgga@gmail.com

Phone: (306) 367-2012
Fax: (306) 367-2403

Saskatchewan Greenhouse Growers Association
Box 68, Middle Lake, SK S0K 2X0

SGGA 2022/23 BOARD OF DIRECTORS

TAMMY LAUINGER
President
Box 1792, Unity SK S0K 4I0
PH: 306-228-2202
rblwelding@hotmail.com

LOUISE D. FILARCZUK
Vice President
Box 243, Ituna, SK S0A 1N0
PH: 306-795-7930
ldfil@hotmail.com

GAIL MEDERNACH
Past President
Gail's Greenhouse
Box 118, Cudworth, SK S0K 1B0
Ph: 306-256-3605
rgmedernach@badoux.ca

BRAD BARTKO
Board of Director
Box 1522
North Battleford, SK S9A 3W1
PH: 306-441-0729
cobalt0966@gmail.com

HEATHER DRYSDALE
Board of Director
City of Saskatoon Parks Greenhouse
1101, Ave P North
Saskatoon, SK S7L 7K6
PH: 306-975-2546
Heather.Drysdale@Saskatoon.ca

SANDRA KOTZER
Board of Director
Box 728, Langenburg, SK, S0A 2A0
PH: 306-743-9119
wineandrosessk@gmail.com

PRISCILLA MAH
Board of Director
310 Valley Road, Saskatoon, SK
P/O Box 114 R.R.3
Saskatoon, SK S7K 3J6
PH: 306-384-0038
priscilla@cbgrowers.ca

TOM WRIGHT
Associate Director
Business / Tradeshow Representative
Professional Gardener Co. Ltd.
Box 15, Beatty, SK S0J 0C0
PH: 306-752-4150
Fax: 306-752-5842
t.wright@sasktel.net

GLEN SWEETMAN
Ministry of Agriculture
Sask Ministry of AG Representative
Greenhouse & Nursery Specialist
3085 Albert Street
Regina, SK S4S 0B1
PH: 306-787-6606
Fax: 306-787-0428
glen.sweetman@gov.sk.ca

JACKIE BANTLE
Education Advisor
Education Representative
University of Saskatchewan
51 Campus Drive
Saskatoon, SK S7N 5A8
PH: 306-966-5864
Jackie.bantle@usask.ca

AUDRA COOPER
Early's Farm and Garden Centre
Ag Advisor / Technical Support Representative
2615 Lorne Ave
Saskatoon, SK S7J 0S5
306-931-1982
acooper@earlysgarden.com

GUENETTE BAUTZ
Managing Director
Box 68, Middle Lake, SK S0K 2X0
PH: 306-367-2012
Fax: 306-367-2403
saskgga@gmail.com

2023 MEMBERSHIPS NOW DUE

Saskatchewan Greenhouse Growers Association

- Access to Tag Discount Program
- Access to Tray and Box Discount Program
- Subscription to SGGA's Newsletter
- 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

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.

Box 68, Middle Lake, SK S0K 2X0
Fax: 306-367-2403 • Email: saskgga@gmail.com

306-367-2012

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 2023 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

2023 DISTRIBUTION DATES

Content Deadline	Distribution Deadline
July 14, 2023	July 25, 2023
December 8, 2023	December 19, 2023

Contact the SGGA OFFICE to book your advertising space!

SGGA TENTATIVE SCHEDULE 2023

DETAILS WILL BE SHARED BY EMAIL

January 2023 MEMBERSHIPS DUE VIRTUAL BIOSECURITY WORKSHOP VIRTUAL COFFEE TALKS	February 8TH 1:00 – 5:00 IN-PERSON KICK-START THE SEASON MINI-CONFERENCE @ CENTRAL BOTANICALS VIRTUAL COFFEE TALKS	March SGGA @ GARDENSCAPE MARCH 24-26 VIRTUAL COFFEE TALKS
April GREENHOUSE SEASON	May GREENHOUSE SEASON	June GREENHOUSE SEASON
July 8TH NEW BLOOMS & SUPPLIERS SHOWCASE	August FALL NEWSLETTER – INDUSTRY SUPPLIES FEATURE	September VIRTUAL COFFEE TALKS
October VIRTUAL COFFEE TALKS	November VIRTUAL COFFEE TALKS	December VIRTUAL COFFEE TALKS MEMBERSHIP RENEWALS

In-Person Kick-Start the Season

MINI CONFERENCE

February 8, 2023 - 1:00-5:00 pm | @ Central Botanicals

Central Botanicals: *Kickstart of the Greenhouse Season-Seedlings to Pots*

Jackie Bantle: *Seed Germination*

Coffee Break/Walk about of the facility

SGGA AGM

Speaker TBD: *Cleaning and Sanitation of the Greenhouse*
This topic will be applicable for Continuing Education Credits (CEC)

Contact the SGGA Office to register: saskgga@gmail.com or 306-367-2012

REGISTRATION DEADLINE: FEBRUARY 7, 2023

Save the Date

Saskatchewan new Blooms
for canadian nurseries and retailers

SATURDAY AFTERNOON , JULY 8TH

2023

Plant Breeding: What's the Difference Between Seedlings, Clones and Cultivars?

By Jackie Bantle

Seedlings, varieties and cultivars are terms that are often used interchangeably. However, they are not synonymous. Seedlings result from sexual reproduction (this sexual reproduction can occur in nature or through deliberate human intervention): any plant grown from a seed is called a seedling. Seedlings are genetically unique: they have an exclusive combination of genetics from their male and female parent.

'Varieties' or 'Selections' are naturally occurring plants that are found in the wild and have desirable traits that humans want to reproduce. In order to replicate these naturally occurring plants exactly as they have been discovered into hundreds or thousands of plants, they must be reproduced asexually (i.e. through cuttings, layering, grafting, etc). All of the Saskatoon berry selections that are familiar to us (ex. 'Thiessen', 'Northline', 'Smoky' or 'Honeywood') were found in nature and propagated through cuttings (asexually) to produce the thousands of named Saskatoon berry plants available today.

Cloned perennial shrub ready to be shipped from the nursery to the garden centers.

Unlike varieties, 'cultivars' are named plants that have been produced by human intervention (whether through traditional breeding methods or genetically modified breeding techniques). The U of S Haskap plants (ex. 'Aurora', 'Borealis', 'Tundra', 'Indigo Treat', 'Indigo Gem', etc.) are examples of cultivars. These haskap cultivars were developed by deliberately cross pollinating specific haskap plants with each other. Some of the resulting seedlings from thousands of man-made cross pollinations had desirable traits: these desirable man-made seedlings were then given cultivar names. The cultivars are reproduced through asexual reproduction or cloning. Seedlings can become cultivars or varieties if we want if they have desirable characteristics that we want to replicate.

Cloning is not a new technique. The Inca people of Peru cloned potatoes in the 1400's by taking the underground tubers that they harvested and replanting them for the next season. The potatoes that we plant today are clones of a varieties that have been

developed over the last century. A particular variety with desirable characteristics is cloned to produce the same potato for every gardener. The Oxford Dictionary of Botany defines a clone as "a group of genetically identical cells or individuals, derived from a common ancestor by asexual…. reproduction". When you plant a Norland or Russet Burbank potato tuber, you know exactly what type of potato to expect underground at the end of the season. Garlic cloves, lily and gladiola bulbs, Jerusalem artichoke tubers and strawberry runners are all examples of plants that are reproduced as clones. When you purchase cuttings or liners of a specific cultivar of flower, you are buying clones. Each selected plant part, whether it is a cutting, tuber, runner or bulb, is capable of producing a new plant that is genetically identical to the original individual.

There are not many vegetables that are reproduced as clones. Most vegetable plants and many flowers are reproduced using seeds. Seeds are formed after successful pollination: the male parts of a flower fertilize the female parts of a flower. Plants can be self-pollinating or may require cross pollination to produce viable seeds. **Cross pollination** occurs when pollen grains (male part) from one plant fertilize the ovary (female part) of a different plant of the same species. For example, the male pollen of a beefsteak tomato pollinating the female parts of a roma tomato will result in many seeds inside the roma tomato. Each seed in that roma tomato will have its own unique combination of genetics of the parents and no two seeds will result in the same plant (kind of like human brothers and sisters of the same parents). Seed, and the resulting seedlings, are important as they increase genetic diversity and allow plants to evolve and adapt to changing environmental conditions. For example, research has shown that trees and shrubs that are suited for zone 3 or 4 can sometimes be hardy at zone 2 if seed is harvested from areas along the northern edge of zone 3 or 4 or in areas of higher altitudes within these zones. Cloned plants have limited ability to adapt to changing environments.

Fifty year old walnut trees grafted onto disease resistant walnut rootstock.

Harvested acorn seeds from a self-pollinating Northern Pin Oak tree.

Contrary to cross-pollinated plants, **self-pollinating** plants, like peppers, transfer pollen from the anther (male part) to the stigma (female part) within the same plant. The seeds that result from a self-pollinating plant will be nearly identical to the plant from which they came. Self-pollinating plants adapt to changing environments more slowly than cross-pollinating plants. Self-pollinating plants

… continued …

Lemon Boy tomato cultivar produced from open pollinated seeds.

can experience cross pollination if the male and female parts of the plant are isolated from each other. Breeders often remove either the male or female parts of the plant before they are mature to prevent self-pollination and then physically bring pollen from a different plant to cross pollinate and introduce genetic diversity.

Hybrid seed vs open-pollinated seed: what is the difference? Hybrid seed results when two vastly different cultivars are cross pollinated to create seeds. The genes of each parent are very pure so that when the genetics of each parent combine, there is little (if any) variety between offspring (seeds). The seeds that result are hybrid seeds that exhibit desirable traits from each parent and produce seedlings that are nearly genetically identical. If you save seed from a hybrid, and grow it out, it will not produce a plant that is true to type, ie. you will get a plant similar to one of the parents, unlike the hybrid plant that produced the seed.

Primo Red tomato produced from hybrid tomato seed.

Open pollinated seeds can result from cross pollination or self-pollination. Open pollinated parents are not genetically pure, but the genetics are stable. Open pollinated seeds are produced from plants of the same variety that have been selected for many years and produce seed that is genetically stable and will produce plants similar to the parents. Seeds from open-pollinated plants can be saved from year to year.

Although seedlings produced **from** hybrid seed are more uniform and usually outperform open pollinated seedlings it is important to remember that the seeds produced **by** hybrid plants will NOT be true-to-type, unlike open-pollinated seeds. All heirloom varieties are open-pollinated seeds but not all open-pollinated seeds are heirloom seeds.

In ornamental plant and fruit production, seedlings and clones both play a vital part in the breeding process. A fruit breeder will take pollen from the flower of one tree that has certain promising characteristics and place that pollen on the stigma in a flower of another fruit tree of the same species with different promising characteristics. For example, an apple tree with good yields is crossed with an apple tree that produces apples with excellent flavour and texture. The hope is that the one of the seedlings from this cross will produce a tree that produces good yields of apples with excellent flavour and texture. The resulting seeds from the cross pollination (found in the core of the apple) will be planted out the following spring. It will take 6 or 7 years before those seedlings will produce fruit. In the meantime, one or two of the seedlings may be killed by cold winter weather, another seedling may not

produce many fruit, another seedling may have horrible flavour, etc: if the breeder is lucky, there may be one of the seedlings from that cross pollination that may have better flavour and good yields. The cross pollination continues year after year. During this time, many seedlings will be eliminated due to poor winter hardiness or growth habit. Seedlings that remain will be judged on their fruit quality. Color, texture, flavour and even storability will be some of the basic qualities that will be tested. Finding a new apple variety is a long and arduous process. Thousands of seedlings will be planted over many years to find a cultivar worth selling to the public.

Once a fruit or ornamental seedling has been shown to have promise within a particular seedling orchard or test site, it is time to clone that plant for further testing. Clones (cuttings, tubers, grafts) are studied at various locations under various environmental conditions to determine whether or not they are worthy of mass production. The flowers, trees and shrubs that you sell at your greenhouse, which are named, are clones of one special seedling that was deemed to have superior traits at several locations.

It is estimated that if an apple breeder finds 2 or 3 good apple varieties during his or her entire breeding career (40 years), he or she has been extremely successful. The University of Saskatchewan has been breeding apples since the 1920's. During that time, it is estimated that over 35,000 seedlings have been grown. The dwarf sour cherries released by the University of Saskatchewan were 60 years in the breeding process before any cultivar was released. In fact, the sour cherries would have been lost entirely, if it hadn't been for the 'behind the scenes work' and deathbed confession of Dr. Les Kerr (Saskatoon Forestry Farm) to Dr. Cecil Stushnoff (U of S). The current U of S haskap releases have been 20 years in the making. The U of S haskap breeding program is still a toddler.

Both seedlings and clones play a significant part in food production in the world. Whereas the bananas that are exported out of Latin America all come from a single clone, it is the evolving seed market of field crops and vegetables that enable farmers to feed an ever-growing global population with high yielding, nutritious food. Traditional methods of cloning such as plant cuttings and budding and grafting have given way to more high-tech methods of cloning such as tissue culture. Similarly, traditional methods of manual crossing to produce seeds have evolved into molecular genetics, DNA marking and gene recombination. Whether modern or traditional methods are used, plant breeding is a process that requires careful observation, organized record keeping, diligence and long-term, stable funding.

SGGA MEMBERSHIP FORM

PLEASE COMPLETE THE FORM BELOW AND SUBMIT IT, ALONG WITH PAYMENT, TO THE SGGA OFFICE

Membership Year: Company Name:

Applicant Name:

Mailing Address: City/Town:

Prov: Postal Code:

Business Telephone #: Alt Phone #:

Fax Number: E-mail:

May the SGGA use your Business Name for promotional purposes? _____Yes _____ No

And to promote on SGGA Facebook Page: Flowers & Gardens - Sask Connection for Backyard Enthusiasts? _____Yes _____ No

I give SGGA permission to share my contact info with other growers and suppliers. _____ (SIGNATURE)

I give SGGA permission to share my location publicly. _____ (SIGNATURE)

Active Membership Information (check all that apply)

Greenhouse Vegetables: ☐ Cucumbers ☐ Tomatoes ☐ Peppers ☐ Herbs ☐ Various Other Starter Vegetables ☐ Other: _____

☐ Garden Seed ☐ Bedding Plants ☐ Potted Plants ☐ Perennials ☐ Cut Flowers ☐ Poinsettias
☐ Trees/Shrubs ☐ Succulents ☐ Water Plants ☐ Tropicals/House Plants ☐ Garden Center
☐ Wholesale ☐ Retail ☐ Broker ☐ Other: _____

Please select your size* of operation to help the SGGA identify programs and benefits that fit our member's needs:

☐ Under 5,000 ☐ 5,001 - 15,000 ☐ 15,001 – 25,000 ☐ Over 1 acre

** Size is determined by the square footage you have that is covered by a structure and you have the capacity to control the heating & / or cooling environment.*

Membership Type

☐ Active Member / Grower – Basic Membership $125.00 $_____

☐ Add $0.01 per square foot over 10,000 to a maximum of $325.00

# of square feet _____ x $0.01 = $_____

☐ Associate Member / Trade Membership $175.00 $_____
includes listing in suppliers list on website

☐ Educator / Government Membership $125.00 $_____

☐ Student Membership $ 25.00 $_____

+ 5% GST $_____

Total Enclosed = $_____

FAX OR MAIL THIS FORM TO:
Saskatchewan Greenhouse Growers Association
BOX 68, MIDDLE LAKE, SK S0K 2X0
Telephone: 306-367-2012
Email: saskgga@gmail.com

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