

CANADA'S LEGAL CANNABIS CULTURE MAGAZINE

HONOURING ELIAS THEODOROU

A WARRIOR - AN ATHLETE - A FRIEND - A TRUE LEGEND



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to help us maintain the editorial excellence and integrity of our publication, we have assembled a qualified Council of dedicated experts and innovators and natural health and cannabis to serve on HCM's Editorial Advisory Board:

With the help of these industry authorities, HCM offers fresh timely and accurate information about natural health and wellness as it applies to cannabis. The board members lend their expertise to our process of developing and commissioning or editorial lineup, and they're postpublication review of each issue is an invaluable in maintaining our more than six year reputation as Canada's most trusted cannabis health and wellness resource.

Every effort is made to ensure that the majority of advertised products will be available for sale in Canada.

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ISSUE 76

Driven by a balanced approach to ensuring responsible cannabis choices and creating positive cannabis experiences for Canadians, HCM strives to inform and educate our readers. HCM is not responsible for the actions, services or quality of the products and services represented within or reported on.

All material presented is intended for a mature 19+ audience and is intended for entertainment, educational and informational purposes only.

For more information on medicinal cannabis, please speak to your family Doctor.

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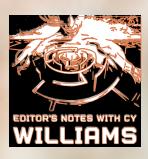
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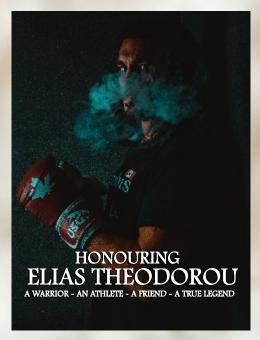
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CROPTOBER IS BACK AND THE SEASONS CHANGE AGAIN

October is here and with the shift in seasons comes the reality of harvest, the hard work involved and in most homes across the land - we give thanks for family, for friends and loved ones and express gratitude for all we have accomplished.

This issue is bitter sweet for me and for the entire HCM crew as we mourn the loss of a friend and on the evening of the very same day we found out about the loss to our community - the unexpected death of Elias Theodorou - we were also honoured by that same community by taking home a "Online Cultivation News Source of the Year" Award at the recent Growup Cannabis Industry Awards.

As I mentioned - the win and acknowledgment is bittersweet.

I cannot thank you enough for this and I promise we will continue to deliver the best of the best when it comes to content on all aspects of the wonderful and amazing plant that is cannabis.



This issue features an in-depth look at another award winning group - Segra - who are leading the charge when it comes to tissue culture science and cannabis.

Thank you to our cover photographer Shawn Ryit for providing some of the most stunning covers - this special one of our dear departed friend and warrior - Elias Theodorou included. Check out Ryit Photography for more on this incredibly talented photographer.

Stay Lifted!

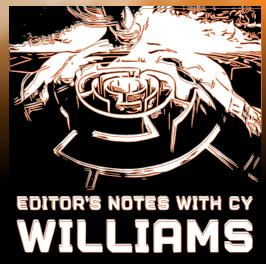
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Cannabis Council of Canada

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Cannabis Council of Canada President & CEO, George Smitherman, will be holding a press conference with several cannabis sector CEOs on Parliament Hill to discuss urgent action needed in the cannabis industry, on the 4th anniversary since legalization in Canada. Cannabis CEO's are in Ottawa as part of the Cannabis Council's Grass on the Hill initiative to participate in a series of meetings with key decision makers focused on the urgent challenges of financial viability of the industry, amongst several urgently required changes. Make your voice heard and call on Governments across Canada to take action. #betheinfluencer Licensed producers are on the brink. Without urgent regulatory change, thousands of well-paying jobs in the cannabis sector are disappearing each year, especially in small and rural communities. Government inaction has put the social and economic gains since legalization at risk. An entire industry is threatened.

How did it get to this in the 4 short years following legalization?

- Excessively high excise taxes
- High fees and supply chain failures from provincial distributor monopolies
- Entrenched illicit market

The Cannabis Council of Canada to discuss urgent action needed for the Cannabis industry.

Without immediate intervention from government:

- Canadian companies will continue to fail
- Rural communities across Canada lose innovative agricultural jobs
- The illicit market will continue to thrive while public health objectives are lost
- Lost opportunity to become global leader in rapidly growing \$100B + industry

Take immediate action, alongside sector peers and send an SOS to government.

For right now head over to www.cannabis-council.ca

and pay particular attention to the upcoming Grass on the Hill being held in Ottawa on October 17th and 18th...







Grass on the Hill

Cannabis Leaders Summit and Industry Lobby Day

Day 1 (Oct 17) - Cannabis Leaders Summit

7:30am-5:30pm, Andaz Byward Market

7:30am Registration Open

9:30am Introduction, Land Acknowledgment, and Agenda

Rick Savone (Aurora), George Smitherman (C3), Ika Washington (Diversity Talks)

9:40am Remarks from the Cannabis Caucus

Scott Reid, MP for Lanark-Frontenac-Kingston and Patrick Weiler, MP for West

Vancouver—Sunshine Coast—Sea to Sky Country

10:35am Current Political and Public Opinion Context

David Coletto (Abacus Data)

10:55-11:20am Break

11:20am Briefing on C3 Constitutional Case and QA

Adam Goldenberg (McCarthy Tetreault)

11:45am Update on Excise, Mark-Ups and Fees Report and QA

Fred O'Riordan (EY)

12:10-1:30pm Networking lunch at the Andaz

1:30pm Morning Recap

Ika Washington (Diversity Talks) and George Smitherman (C3)

1:45pm Expanding Patient Access to Medical Cannabis

Carole Chan (High Hopes/Vivo Harm Reduction), Joanne Di Nardo (Arthritis Society), Daphnée

Elisma (Aube : la voix des patients), Rahim Dhalla (Hybrid Pharm)

2:45pm Preparatory Session for Delegation Meetings

Pierre Killeen and George Smitherman (C3)

3:00-3:30pm Break

3:30pm Cannabis Strategy Table and QA

Eric Costen (Innovation, Science and Economic Development Canada)

4:15pm Operational Plan for Delegations

Pierre Killeen and George Smitherman (C3)

4:45pm Closing Remarks

Ika Washington (Diversity Talks)

5-6:15pm C3 Annual General Meeting

4th Anniversary Social, Lowertown Brewery (73 York St.), 7:30-11:30pm





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Emergency call to action for the Canadian Cannabis sector.

Make your voice heard and call on Governments across Canada to take action.

#betheinfluencer

How to participate

Download one of our #CannabisSOS images off the cannabis-council.ca website or make your own. Share your story on social media with the hashtag #CannabisSOS

All politics is local. Tag your local MP to let them know it's an issue in their riding.

Don't know your MP? Find out at elections.ca.

Next steps

Keep up the momentum! Here are a few other ways to build on your advocacy work.

Schedule a meeting with your MP and submit an Advocacy Report

Join us in Ottawa Oct 17 & 18 for Grass on the Hill Fall Edition

Hashtags - #CannabisSOS #CannabisActNow #CannabisJobKillers #UrgentActionRequired #SaveOurSector





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HONOURING ELIAS THEODOROU

A WARRIOR ~ AN ATHLETE ~ A FRIEND ~ A TRUE LEGEND



SPECIAL FEATURE 'THE LOSS OF A LEGEND'

lias Theodorou, a charismatic, widely respected and talented mixed martial artist who campaigned successfully for the right to use medical marijuana as an athlete, has died. He was 34.

The former UFC fighter and passionate spokesperson for cannabis died in September in Toronto of liver cancer. Elias was proudly from Mississauga, Ontario, and was an athlete, actor, model, stuntman, dancer, TV pitchman, Harlequin romance cover model and cannabis advocate.heodorou took up MMA in 2009 after his first year at Humber College, where he studied creative advertising.

He made his pro debut in June 2011 and was 8-0-0 in 2013 when he joined the cast of The Ultimate Fighter Nations: Canada vs. Australia, an edition of the UFC's reality TV show featuring teams of aspiring Canadian and Australian MMA fighters.

Theodorou earned his UFC contract in April 2014 when he stopped fellow Canadian Sheldon Westcott via second-round TKO in the TUF Nations finale in Quebec City. He went on to win eight of 11 fights as a middleweight in the UFC but was cut after a May 2019 loss to Derek Brunson in Ottawa. While Theodorou had a winning record, his grinding style lacked the fireworks the promotion looks for. Nine of his 11 UFC bouts went to a decision.

His last professional fight was a win over Bryan Baker last December on a Colorado Combat Club card. His pro record was 19 wins and three losses, with six wins in his last seven outings.

Theodorou campaigned for years to use medical marijuana in the sport, eventually securing a therapeutic use exemption for the marijuana he had been prescribed for bilateral neuropathic pain in his hands, wrists and elbows.

Elias, who said cannabis allowed him "to even the playing field and fight at a baseline level," got the exemption in February 2020 from the B.C. Athletic Commission. He became the first professional athlete in North America fighter to receive a Therapeutic Use Exemption for cannabis use.

Elias launched himself onto the world stage in 2014,



defeating Sheldon Westcott by TKO to win his season of "The Ultimate Fighter." The Canadian middleweight would go on to compile an 8-3 record in the Octagon, never losing back-to-back fights and only suffering defeats to longtime contenders Thiago Santos, Brad Tavares and Derek Brunson.

After the Brunson loss in May 2019, the UFC released Elias from his contract. He would fight three more times outside the promotion, winning all three bouts. His final fight came in December 2021 when he defeated former WEC and Bellator fighter Bryan Baker.

Elias was an outspoken advocate for medical cannabis use, especially the use of cannabis for fighters. Countless pro athletes are said to use marijuana — for pain, for anxiety, to focus — but most sports prohibit or heavily regulate its use. In 2019 the PGA Tour suspended the golfer Matt

Every for three months after he tested positive for THC, the active ingredient in marijuana, and in 2021 the American sprinter Sha'Carri



Richardson was effectively disqualified from the Tokyo Olympics after THC was found in her bloodstream.

Elias was suffering from bilateral neuropathy, which caused tingling pain in his hands and arms, didn't want to be next. Known for his thoughtful, deliberative fighting style, he applied that same approach to his campaign to win permission to use marijuana during training and preparation for a fight. He built his case meticulously, collecting research and statements from doctors and lawyers and documenting his own fruitless efforts to find an already permitted alternative, like opioids.

He was the first professional athlete in North America to

receive such an exemption, and very likely the first in the world.

It is important to remember that Elias was already a widely admired sports figure when he took up the cause of medical marijuana.

In 2015, Theodorou was a part of the cast for The Amazing Race Canada 3.

Elias was also known for several activities out of the cage. He served as a "ring boy" for Invicta FC, carrying ring cards in the style of "ring girls" who have been a staple of combat sports for nearly six decades.

Elias had been battling stage 4 liver cancer, though he had not

HIGH! CANADA MAGAZINE SPECIAL FEATURE 'THE LOSS OF A LEGEND'

anoab18

revealed that information publicly. He had been on our cover twice before and at Lift&Co Expo in May we conducted a video interview and discussed this third cover appearance. We spoke for the last time at O'Cannabiz in June, at the Awards Gala and we talked about his third cover and about dropping the video interview we did around the same time too. "Lets tie it all in together" he had told me. We smiled and we hugged and we went our own ways and I did not know it would be the last time I ever saw him. I remember thinking at the Awards Gala that my friend looked tired. Tired but happy and busy and enjoying his role at Leafythings very much and he never stopped smiling or

pouring good energy into the room around him.

I found out about Elias passing a way on the morning of September 11th as I walked over to the Niagara Convention Centre for the Growup Conference. I remember the overwhelming sadness I felt and that I saw for the rest of the conference - we spoke about him in length and honoured his memory as best we could - acknowledging that almost every person in attendance had lost a friend, a warrior who fought for the plant like few do or are even capable of doing.

He was a friend and a legend and we will miss him.



I think allowing cannabis and allowing CBD, now opening up the

channels to research it and make up ground that 70 years of prohibition has removed from medicine, helps break a bit of that stigma that, I would imagine, a majority of doctors still have today. I'm one of the lucký onés who's had a family physician my whole life that has understood the power of cannabis. I've taken my approach to fight as hard as I can, inside of the cage and out, to not only protect my right as a medical cannabis patient and athlete-but, hopefully, knock down that door and knock cannabis out of that prohibited list for all athletes so they don't have to have these hurdles and obstacles along the way. I think the first step, in regards to my therapeutic use exemption, is that it set precedence for all athletes in boxing and MMA, whether amateur or professional, in BC. I'm really excited because I think the next door will be the U.S., to open up that aspect and those opportunities that other athletes don't necessarily have. One thing to clarify is that it was recognized by the commission, which is run by the government, so it's another step in medical cannabis rights and not just in sports. It's the first time that cannabis has been considered a medicine in sports so I think that different jurisdictions, moving forward in Canada, will also recognize it. Now? I'm looking to win in the ring and win outside of the cage- not just for myself, but for all.



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ABOUT GRANT

Segra

Company Spotlight

Segra International Corp. is a cannabis tissue culture nursery and the trusted source for clean genetics domestically and internationally.

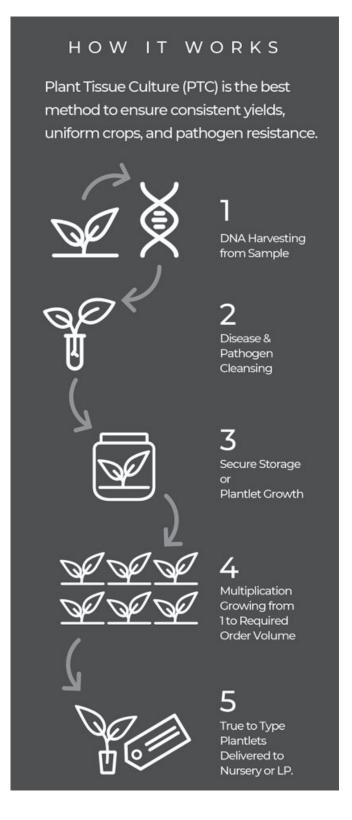
We got to visit their facility recently and we were nothing but impressed!

Segra can help you improve your output and reduce risk with some of the most advanced ag-tech for cannabis currently available.

With Segra, you can pretty much guarantee that you have the plant you want, when you want it, performing at its absolute best.

This is truly the future of cannabis cultivation. From plantlets to diagnostics, Segra's specialized services drive unprecedented growth for their partners and that list is constantly growing.

Opportunities present themselves, problems arise, and solutions are found. The story of cannabis plant tissue culture follows that same cadence.



What exactly is plant tissue culture?

How was it developed?

Why is it crucial to the rapidly expanding cannabis industry?

The early adopters of this biotechnology have

performance, pathogen management, and mitigation of operational risks through genetic banking.

The use of plant tissue culture technologies will continue to proliferate as the cannabis industry enters the most competitive time it has seen since the inception of commercial production.

Plant tissue culture is a broad term that refers to the in vitro growth of plant cells under defined physical and chemical conditions. It can be applied to a range of technologies and biological processes performed in vitro. The in vitro growth of plant cells can originate from a singular cell, a piece of leaf or stem tissue, or a seed placed in growth media. Some of the more common tissue culture plant technologies are listed below:

Anther Culture
Callus Culture
Meristem Culture
Organ Culture
Organogenesis
Protoplast Culture
Somatic Embryogenesis
Seed Culture
Suspension Culture

These technologies categorize a series of different specializations and techniques used to research and produce clean, individual plantlets and are often used in combination with one another depending on the crop or product. To produce our clean-stock cannabis plantlets, Segra utilizes organ culture,



meristem culture, and organogenesis.

(PTC) "Stage III plantlets"—tiny, laboratoryproduced young plants—are created using a technological process proven to offer superior pathogen-resistance and greater crop uniformity than conventional vegetative propagation.

They are ready to plant and shipped around the world, eliminating the complication and expense of young plant propagation.

Plants reproduced through traditional vegetative propagation naturally see diminished performance over time. Segra's proprietary regeneration process removes disease and restores vigor, then securely stores your clean specimens. They are ready for your exclusive use for future plantlet production, research or breeding.

Successful initiation into tissue culture takes between 5 and 10 months, after which cultivars can be preserved and maintained indefinitely.

Your valuable cultivars are protected and available whenever you need them, ensuring continuity of your business, no matter what.

Portions of Segra's unparalleled cultivar library are now available for test drive. Whether you are looking to quickly satisfy the latest demand, want to add a new dimension



to your portfolio or are looking to respond to a specific growing need, collaborate with our team to try one of Segra's genetics for a low-risk introduction to PTC technology.

Mother stock faces natural diminishment over time, but growers don't have to settle for diminished results. With our mother stock provision plan, choose from the full selection of Segra's public collections or draw from your own genetics for a program that will provide continual refreshment of your inhouse mother plant production programs. Focus your resources on productive plants, not on nursing mother plants.

Leave mother plants and cloning production behind and step into the future of cannabis propagation with a fully PTC-based model, available to licensed producers globally on a recurring schedule.

Use your own genetics, or sample from Segra's library—either way, you get disease-free, vigorous plantlets ready at scale, when you need them. Free up time and canopy space that is typically dedicated to mother plant propagation and move into Segra's highest level of service.

By implementing plant tissue culture technology that removes pathogens, prolongs storage capabilities, and augments plant performance, the industry will see a trend of improved finished product quality that will drive consumer demand in a positive direction.

As plant tissue culture proves essential in the mass cultivation of cannabis, we can expect efficiencies to improve across the industry.

Plant tissue culture service providers are emerging every day in new markets around the world, allowing the supply chain to mature in a manner that reflects what commercial agricultural companies of other established crops have done for decades.

Cultivars are mass produced at a plant tissue culture laboratory, plantlets of those cultivars are sent to nurseries for hardening and initial vegetative growth, the matured plants are then sent to cultivators for final stages of growth and harvesting.

This allows each member of the supply chain to hone their operational performance by allowing them to focus on what they do best.

Whether you're a nursery, a cultivator, or a consumer – if you start with clean and healthy inputs you can expect the highest of quality outputs.



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Plant Tissue Culture is a four-stage process (initiation, multiplication, rooting, and acclimation.)

"Stage III plantlets" are tiny laboratory produced young plants that have roots, but still require some acclimation prior to planting. Stage III Plantlets are well established in horticulture as a superior product over conventional vegetative propagation, offering better control of pathogens and greater crop uniformity.

Many years of dedicated research and development has led to the release of Segra's industry-first cannabis plantlet product in 2020. Segra's Stage III Plantlets are available in a variety of sizes and packaging formats for both Canadian and international shipping.

SEGRA'S DNA FINGERPRINTING CREATES A POWERFUL NEW TOOL.

Segra's industry-first DNA fingerprinting test is useful for cannabis farmers, distributors, regulators, brands, distributors, and breeders.

This has two general purposes of use. First, this test represents a low-cost high-throughput solution for the verification of cultivar genetic identity associated with supply chain management. Additionally, the test represents a powerful tool to help guide a plant breeders decision making matrix by prescreening large volumes of genotypes for relational phylogenic grouping purposes prior to more detailed (expensive) genomic analysis.



We had the opportunity to spend some time with some key members of the Segra team and they were super happy to answer all our questions. Being huge science-nerds - we were excited to find out about the entire process and hear more about the amazing research and development Segra has going on behind closed doors. As leaders in the industry it was a pleasure. First we spoke to Dr. Sma Zobayed, Ph.D., Segra's Chief Tissue Culture Officer and absolutely the smartest man in most rooms.

Dr. Sma Zobayed is a leading specialist in tissue culturing with extensive international experience. He holds two patents relating to tissue culture and has published over 50 scientific papers related to his research in the field. He also holds a Ph.D. in Plant Tissue Culture from the Department of Biological Sciences at the University of Hull (UK), and has won awards for his tissue culture work from

the scientific community. He is a member in good standing with the International Society of Arboriculture, International Association for Plant Tissue Culture and the International Society for Horticultural Sciences.

We asked Dr. Zobayed As someone who has made the jump from Agricultural overall into exclusively cannabis cultivation, what makes cannabis so different from other plants, that you would totally devote your career and knowledge into such ground breaking strides in research, development and implementation of new science to further this particular industry's growth?

Cannabis is a complex plant with over 400 chemical entities of which more than 60 of them are cannabinoid compounds Cannabis is the most widely used illicit drug in the world and has been used to treat a variety of

mental health issues. Although cannabis has been consumed and grown by humans for at least 6000 years, we know very little about tissue culture propagation of Cannabis plants and how it affects plant morphology, physiology, or even genetic stability because this plant was prohibited from being grown for a long period of time.

I appreciate conducting research to uncover these mysteries because the field of study for this plant was quite broad.

What is Segra doing to bridge the gap between academic publications and the farmer?

To advance technology and plant health, Segra made significant investments in the company's research and development division. Our research team is continuously looking for fresh academic research being undertaken as well as starting our own. Segra serves as a link between scholarly publications and farmers or growers.

How a big a role do you feel tissue culture science and development is going to play in cannabis cultivation overall?

Although plant tissue culture technology has been used extensively in commercial agriculture and horticulture for decades, the cannabis business only recently realized how important it may be for improving plant health, increasing production, and ensuring pathogen-free plants.

Tissue culture will be crucial for growers to stay up with the ever-increasing rules as demand for cannabis products rises.

Only a small number of cells from the ideal genetic mother plant are required to create thousands of identical, high-



quality plants that can outperform expectations, potentially lower production costs, and still resolve many frequent problems.

Next we got to speak with Segra CEO-Jamie Blundell and we got to ask him what led to the creation of such a forward-thinking company?

When the company was founded in April 2017, the basic premise of Segra was to introduce new agricultural technologies to support the growing cannabis industry. It was becoming evident at the time that as the industry scaled into large format cultivation facilities, proper agricultural technologies (ag tech) would need to be deployed to support a healthy, growing After a lengthy review of industry. similar crops in mainstream agriculture, it became clear that desirable, clean genetics and starting material would be an important service to support the industry. The result was Segra International, a leading cannabis tissue culture lab with a supporting molecular biology lab built to ensure that our genetics and plantlets are free from common pathogens and pests that plague the industry. The labs were anchored with a strong team of scientists with expertise in the fields of plant tissue culture and molecular biology.

In the early days of the industry, companies where more focused-on vertical integration and expansion than working with specialists deploying sound best practices in cultivation. Prior to tissue culture companies and testing labs, genetics where being passed around from facility to facility with little to no bio security measures in place.

To make matters worse, some cultivators believed that starting from seed

would remove this risk, but some soon learnt that pathogens like Hop Latent Viroid (HLVd) can pass through seeds as well. The result was widespread dissemination of serious pathogens throughout the industry, impacting crop performance and ultimately the operating and financial performance of the Canadian licensed producers. The lack of consistent crop performance (e.g. uniformity, yield & cannabinoid content) and the lack of unique and diverse genetics for the industry, have created undo strain on the industry ... and still does today. Segra was built to be a solution provider to address a number of these challenges.



Our services include the regeneration and preservation of our customers prized genetics. Storing important genetics offsite makes sense to avoid pathogen contamination and the risk of losing the genetics to disease that is present in all cultivation facilities. The service of removing pathogens and restoring plant vigor is becoming more important as crop diminishment and widespread disease is causing serious economic damage to LP's. customers need unique and better performing genetics and more consistency in crop performance. Starting every cycle with clean, stable genetics is a great way to mitigate this risk.



As our cannabis tissue culture IP advances, Segra continues to source unique and desirable genetics to improve the offerings available to Canadian and international licensed producers. At the same time, top breeders are now realizing that they need a reliable tissue culture lab to help distribute their genetics in a "clean plant" format to curb the spread of disease and strengthen their brand reputation.

agriculture industry does successfully

today.

Filling a gap in the industry where there is a need for tissue culture nurseries (mother plants and plantlets) and genetic diversity is a role Segra takes very seriously. We will continue to invest in R&D and keep a watchful eye on new pathogens that jump into this crop (which will happen) while striving genetics to serve the specific needs in the industry.

What differentiates Segra from other groups similar in nature?

Segra has pioneered tissue culture for the cannabis industry, and we work everyday to position Segra as a thought leader in the space and to educate and advocate for cannabis tissue culture. We have been developing our IP over the last five and a half years and are still learning and improving daily. When we run into challenges, we face them head on, take accountability, and race to understand root causes and find appropriate solutions. A great example of this is how we identified early on that with the cannabis crop, unlike other crops, you need to go back to the meristem to properly clean up and remove disease and intercellular bacteria. Failing this, and disease will likely not be properly remediated.

Some key Segra differentiators:

- Advanced IP backed by an industry leading tissue culture team
- A separate molecular biology lab acting as our main quality assurance department and ensuring that our plants are free from common pathogens known to impact cannabis
- Strong and growing line up of outstanding breeder partners with a desirable and diverse genetic portfolio.
- Operating in Canada where we can and do ship plants globally
- Growing nursery network in Canada, Europe and Africa
- Science, legacy, and business expertise combine to create a winning team

Segra will continue to invest in research and development in deploying both cannabis plant tissue culture and we will constantly be on the lookout for new pathogens that represent a threat to the industry.

What does 2023 look like for Segra?

Segra will continue our mission to educate and advocate for the importance of deploying best practices in cannabis cultivation. We expect continued growth throughout 2023 and will look to expand our capacity both domestically and internationally as demand increases. We will also look to scale up our sales team in Canada and abroad as required. Regarding genetics, we will continue to bolster our genetic portfolio by attracting top breeders to our growing international distribution network.

As the industry begins to consolidate, Segra will look for like minded groups to collaborate with and advance ag tech



solutions for cannabis cultivators while continuing to support our growing customer base. Segra is an important ag tech solution to the industry and as the industry scales globally and matures, we believe specialization will become more prevalent and for cultivators, it will start looking more like the mainstream agricultural industry where specialized tissue culture nurseries and seed companies support the needs of the cultivation companies.

In the meantime, Segra will remain nimble, financially disciplined and focused on helping support our customers while navigating a challenging operating environment. We are always on the look out for new strategic partners and continue building what we believe to be the building blocks of a larger ag tech company serving the industry.





Next we spoke to Jashan Deol - Segra's 'Queen Bee' and Chief Technician in the lab and again - like her associates - a pioneer and easily the smartest woman in most rooms. We asked her what a typical day is like?

Being a production manager, my typical day starts with planning, coordinating, and controlling all the steps in the production process to make sure plants transfer cycles are prompt.

My usual day as a production manager begins with organizing, coordinating, and monitoring every phase of the production cycle to guarantee that plants transfer cycles are timely. The IVS program, where I can log in and manage pretty much anything, including employee productivity, is the first stage. I typically walk through the plants in the grow room to see how they are doing, how they are growing, and to spot any problems before they become serious.

How big a role doea proper storage and shipping play in Segra's work?

My work with the sales team is the most important component. Order approval is often followed by a weekly status update, supervision of the pest inspection, and a final quality check. Segra keeps storage cultivars for clients that are different from producing cultivars, and I need to schedule their transfer into storage medium differently.

Can you briefly tell us about some of the R&D projects that Segra is currently working on?

The Segra R&D team is now researching the creation of synthetic seeds with the goal of using this method for the long-term storage of both our germplasm and that of our clients. Other research focuses on developing bioreactor cultivation for large-scale output, automating the tissue culture process, and enhancing plant health of tissue cultured plants.

Lastly we spoke with the Director of





Sales - Matthew Don-Carolis - who met us at the gate with an enthusiastic and contagious grin - like someone who was excited about blowing our minds - which of course, he went ahead and spent the next two hours doing...

Matt - tell us, how did a legacy driven grower find himself working with such a science driven program?

It's a long story with a lot of twists and turns and a few different countries in between. A friend of mine put me in front of Jamie Blundell the CEO of Segra for an international project.

I saw a great fit with baked in track and traceability of the DNA fingerprinting ensuring confidence in the supply chain and clean healthy starting material. After meeting the team, I realized that

Segra has an amazing diverse team that has all the needed skill sets required to deliver on all aspects. Segra is a Bio Tech Company, the science is fascinating and needed desperately in the global cannabis market.

I've always had a high level of curiosity and the desire to learn from the best, to increase my knowledge and ability to inform and consult my peers and clients with the most progressive and advanced information available to me. Learning from Dr. Sma Zobayed and others is truly a blessing and a once in a lifetime opportunity for me. After noticing that every commercial crop around the world, Bananas, Blueberries, ornamental flowers etc. all are derived from Tissue Culture, I came to the quick revelation that the future of the Cannabis industry would eventually follow suite with the rest of 'Big Ag' and everything grown in the global cannabis market would have to rely on a high-quality Tissue Culture companies to align with the rest of the global agriculture industry. The smart dynamic companies that already see the writing on the wall are engaged and working with Segra to ensure the highest quality plants for their business to flourish by making the starting material essentially a control in their cultivation system. Segra's ongoing initiative and goals are for this to be the

case in every company's cultivation system around the world.

Segra's rigor and testing at our in-house molecular lab are the industries gold standard, always triple verified for negative results on all the various pathogens, viruses and viroid's that are known to be economically impactful to the cannabis crops, and the team Segra is aways working on the future ones that will be up and coming.

What are some of the major lessons you learned over the course of your time with Segra?

These questions I could spend days answering TBD, however the most glaring lesson I learned coming from the west coast legacy sceneseen is that, we learnt from thewe acquired our knowledge from the OG cultivars cultivators and not all the information that was passed along was scientifically accurate to say the least. Growing on a commercial scale we would have a new cultivar come in and we would mother it and propagate to create new starts for each round.

Ongoing we would notice a decline over time inon performance. Anecdotally we were told that this was genetic drift, making copies from copies was essentially degrading the





cultivars performance. Making a photocopy of the previous copy rinse and repeat was the explanation given to me, this at the time made complete sense, so I ran with it! Learning now from Dr. Sma and the scientific team at Segra that the term 'Genetic Drift' iswas scientifically inaccurate and the decline in performance in the cultivar was probably due to a systemic pathogen, bacterial contamination, virus or viroid and potentially unstable genetics. All these issues can be solved though the process of Apical Meristematic Tissue Culture that Segra performs in our Lab.

Why is pathogen elimination and DNA Fingerprinting so important?

Crop disease is a major cause of economic loss across the agriculture industry, and cannabis is no different. Traditional clonal production relies on maintaining mother plants to supply clones for each production cycle; serial cutting of mother plants over long periods of time creates a particularly risky situation in which contamination by a wide variety of pathogens, including fungi, bacteria, viruses and viroids, is common. Non-pathogenic bacteria may also colonise the plant, and although they may not cause overt disease symptoms, can compete for nutrients and affect plant vigour and vield of flowered clones.

Many pathogens are very difficult to eliminate in the cultivation environment, especially viruses and viroids. This is compounded by the strict regulations on pesticide and fungicide use in the cannabis industry. Starting with clean plants from tissue culture is an essential step to mitigate disease in cannabis production, whether through regular re-supply of tissue culture mother plants, or full provision of tissue culture production



plants. The removal of pathogens and intra- and intercellular bacteria through apical meristem tissue culture means the cultivator can be sure that their starting material is free from these variables, allowing for consistent production outputs and avoiding the yield decline commonly associated with long term mother plant maintenance.

Segra's DNA fingerprinting is multipurpose. It makes it possible to verify cultivar identity across the supply chain, so when you purchase plantlets from Segra you can be sure that the cultivar you order is the cultivar you receive. DNA fingerprints for each individual cultivar are cross-referenced with the initial cultivar fingerprint to confirm that all plantlets shipped are true-to-type. Even dry flower on the shelf can be identified with our DNA fingerprint. It also serves as an additional safeguard to Segra's internal track and trace system and allows us to monitor for somaclonal variation (a phenomenon whereby genetic changes can occur in tissue cultured plants). This technology also has important applications in cultivation and breeding settings; mislabelled clones can be identified to the correct cultivar during production, and the interrelatedness of different genotypes in a breeding program can be viewed on a phylogenetic tree.



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As a licensed producer we understand growing and that environment is everything. Lighting is an important part of the equation, but there are several other factors to consider that can affect your lights' performance and the potency of your final product. That means cultivators are responsible for ensuring the plants are kept in ideal conditions. LED lighting technology is pushing the boundaries beyond where it was thought possible. For the best results, your lights should be fully aligned with other environmental controls in your space.

While much emphasis is still placed on THC, Terpenes are starting to get more attention. As a grower trying to stand out - it's all about the Terps. Not only do they create flavours and aroma - they contribute to the effects experienced when consuming various cannabis strains. More emphasis will be placed on Terpenes as more research is being conducted. LEDs give indoor cannabis growers unparalleled control over their crops. They can also allow growers to elicit a biological response in their cannabis crops resulting in increased Terpenes. Using high quality, full-spectrum LED lighting can boost both cannabinoid and Terpene production, resulting in richer, more potent and higher quality strains.



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The following Alberta Bud gear will be on the upcoming AGLC price sheet this coming week. Watch for it!



Uppercut Punch is one of our smoothest and terpiest strains! Featured by High Times, the 2022 Remo calendar, and winning the 2022 Edmonton Collector's Cup, it is a looker and a heavy hitter! The baseball sized purple nugs carry a delicious baked cookie taste that carries through the dry pull and into the smoke. It packs a potent indica high, so get ready to put up your dukes! Available in 3.5g format & MSRP \$35.99.



24K Gold is a sweet pheno of the tangie x kosher kush classic. The tangie lineage is extremely powerful in this cut with a strong scent of oranges. The strength of the tangie Terps is equaled by the kush's kick, a heavy indica dominant strain. Available in 3.5g format & MSRP \$35.99.



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If you have any questions or comments please contact Carrie at 780-232-3399 or email: carrie@albertabud.com



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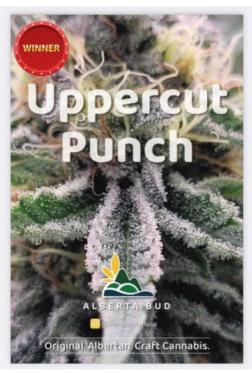
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. Thanks to @cannareps for bringing the Collectors Cup to Edmonton and Alberta Bud crowning strain Uppercut Punch as number one amongst all the great competition. Props to our Alberta Bud Grow Team . We would not be here without their dedication to growing top quality craft cannabis. It was a great event spent with great people. Hope everyone enjoyed the bud. Looking forward to next year and releasing new product soon.









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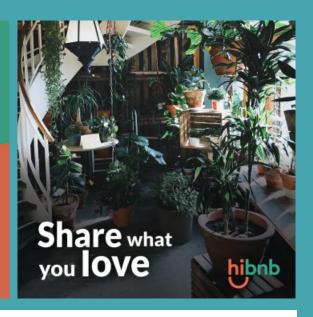


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Odessa is always a ray of sunshine and will brighten your day which is why she is the Alberta Bud Budtender of the week. If you have not been over to Smokey's Capilano you got to take the trip. Odessa and her team have a very cool store and offer some stellar insight into cannabis education. Go into @getsmokeys for all your cannabis needs.

PODCAST PROPS

We were recently on the @stonermorningshow you can have a listen by clicking the link: https://www.facebook.com/stonermorningshow/videos/335679268505504/?sfnsn=mo#







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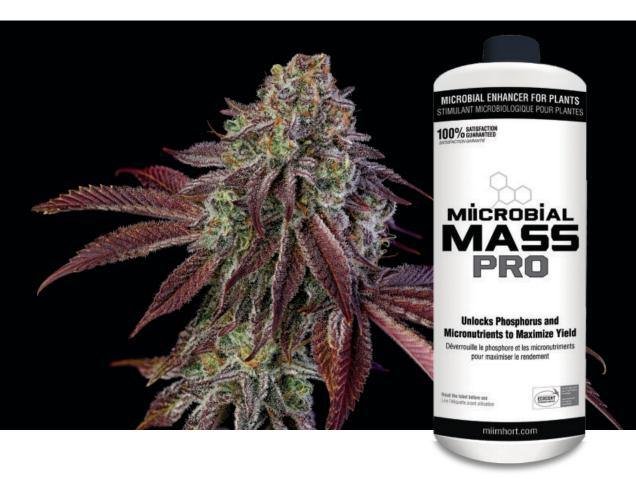
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HOMEGROWN: AN OUTPOST OF **COMMON SENSE**

BY @TFPRUDENTHEWRITER

Hello neighbor, and welcome.

On the horizon, Halloween nears as I write to you this month. While here at Pajama Flats, the non-stop indoor growing readies for a latest harvest.

What do I have to say about fall's chill? Not much! Other than I enjoy growing my own. And doing it indoors lets me ignore either season or weather.

But for those working in cannabis, a rapidly changing business climate is a far bigger deal.

Things for legal cannabis, in case you missed it, have changed since we made it legal way back in October 2018. Four years later, the country is near drowning in retail stores selling the stuff from coast-tocoast.

Despite its sales outlets, the industry remains plagued by bankruptcies, falling stock prices, and widespread layoffs. Along with what seem endless gallons of red ink.

The latest reports published, meanwhile, seem to show legal increasing in popularity.

cannabis declining in value while







Pardon my use of the term. By now, the industry has shown itself. Not only for what it is, but for what it wants to be.

Another corporate scheme, set up to line the pockets of the wealthy and privileged.

While bankrupting those who believed it a legit chance to achieve success. Though not exactly a Ponzi scheme, it closely resembles the shell game threecard Monte.

For like sidewalk hustlers, the world's stock markets once pushed the ease of making money in cannabis. But unlike small business, which runs by making profits, the new swindle is about sustaining corporate losses.

Long enough to kill off smaller competitors. While blaming industry growing pains for the carnage. And building equity based on market share and tax breaks.

The retail cannabis market is an ideal way to do that in Canada, and Big Cannabis is gaming the legal system to make it so.

By inviting small investors to enter the business of retail cannabis.

Where a saturated market, aided by a punishing tax regime and unchecked wholesale pricing, conspire to snuff their dreams of small business success.

Early this year, a study claimed there was one legal cannabis store for every ten thousand people in Canada. Despite this, the same report said the country's desire for such places was vastly under served.

According to the report, the country needs at least one legal cannabis store for every seven thousand people.

The money lost, meanwhile, continues piling up. At what seems a faster pace than they can either build stores or grow weed to sell in them.

By now, I, for one, am wondering who is smoking all the herb. I mean, don't get me wrong, because I'm not claiming to be anything but chronic. But as I've told you many times, I grow and prefer my own.

So, this time, it's sure not me.

Another thing I'm not getting from their numbers is how they can sell so much product but still lose all that money. Not only that, but no matter how many billions the corporate types claim moved at wholesale, local retail stores are still going belly-up nationwide.

Somehow, the bottom lines are not adding up. At least, not for small business. Taste for shares in big public cannabis companies, however, remains near enough to an all-time high.

Now, I'm not an accountant. Neither am I a broker, analyst, or banker. Still,



I'm sure some suit could explain, using generally accepted accounting principles, why it must be this way. Either that, or a sales guy with a slick haircut would happily ease my worries with a half hour of smooth patter over lunch in some pricey clip joint.

On my dime, of course.

When the talk is through, any of them should be delighted to take my money. After telling me how pleased they were to earn my trust. And before burning through more cash on the way to turning a profit in a whoknows-when, but surely faraway, future.

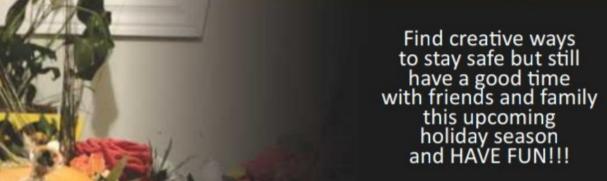
You'll have to call me old fashioned. Because, here, business is for profit. And giving someone else my hard-earned money, so they can throw it away, is plain foolish.

Until next time, smoke 'em if you got 'em, and happy growing.

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PUMPKIN BONG

What you Need

1 Large pumpkin (any shape or size as long as it sits up...get creative) 2 Bong Stems ! removable bowl piece

Instructions

Cut 1 hole out of designated front of pumpkin bong and insert 1 bong stem

Cut 1 hold out of designated back of pumpkin bong

insert 1 bong stem, leaving a little bit exposed to make room for mouth

Add bowl piece, cannabis and ENJOY!

Special Note: If there is air and you can't get a good toke, try adding duct tape or waterproof tape around the cut holes on the front and back...should seal it right up



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