



INVESTOR OVERVIEW

August 2021



CAUTIONARY NOTE ON FORWARD-LOOKING STATEMENTS

This presentation contains forward-looking statements concerning our business operations, and financial performance and conditions, as well as our plans, objectives, and expectations for our business operations and financial performance and conditions that are subject to risks and uncertainties. All statements other than those of historical fact are forward-looking statements.

These types of statements typically contain words such as “aim,” “anticipate,” “assume,” “believe,” “could,” “due,” “estimate,” “expect,” “goal,” “intend,” “may,” “objective,” “plan,” “potential,” “positioned,” “predict,” “should,” “target,” “will,” “would” and other similar expressions that are predictions of or indicate future events and future trends. Forward-looking statements are based on current expectations, estimates, forecasts, and projections about our business, the industry in which we operate, and our management’s beliefs and assumptions.

These statements are not guarantees of future performance or development and involve known and unknown risks, uncertainties, and other factors that are in some cases beyond our control. All forward-looking statements are subject to risks and uncertainties that could cause actual results to differ materially from those estimated. The contents of this presentation should be considered in conjunction with the risk factors, warnings, and cautionary statements contained in the Company’s annual, quarterly, and other reports filed with the U.S. Securities and Exchange Commission. We undertake no obligation to publicly update or revise any forward-looking statement as a result of new information, future events, or otherwise, except as required by law.

GROWTH PRIORITIES AND MILESTONES

22nd Century Group, Inc. is the leading plant biotechnology company accelerating the creation of disruptive new plant lines that alter the level of nicotine in tobacco plants and the level of cannabinoids in hemp/cannabis plants through genetic engineering, gene-editing and modern plant breeding.

Milestone	Tobacco: Secure MRTTP Authorization in U.S. Market	Tobacco: Launch VLN® in Select Global Markets	Hemp/Cannabis: Commence Revenue Recognition	Third Plant-Based Franchise: Announce On August 30
RECENT ACCOMPLISHMENTS	<ul style="list-style-type: none"> Fully prepared for production ramp and U.S. commercial launch upon receiving MRTTP Highly confident MRTTP is now in the documentation phase, readying for decision In regular contact with FDA and CTP through multiple channels at all levels Will continue to escalate actions until MRTTP success is achieved 	<ul style="list-style-type: none"> Initiated VLN® launch process in well-known global markets with limited regulatory hurdles Targeting international market sales by Q1 '22 MRTTP catalyzes launch in additional international countries Adding experienced growers in southern hemisphere for year-round growing of VLN® 	<ul style="list-style-type: none"> Initial revenue to commence in 2H 2021 from existing plant lines and IP portfolio License, biomass, distillate and isolate sales capabilities Readying plant lines for 2022 and 2023 revenue programs Secured world's leading breeders to create disruptive plant lines faster and support commercial scale-up 	<ul style="list-style-type: none"> Leveraging existing expertise and partnerships launch adjacent commercial opportunities Strong competitive advantages Large global market with lower regulatory barriers Will detail market opportunity, timing, path to revenue, and commercial partners at introduction
	\$714B ¹		+\$100B ²	+\$500B ³
	+\$1.3 TRILLION GLOBAL ADDRESSABLE MARKET OPPORTUNITY			

1. Foundation for a Smoke Free World; https://www.smokefreeworld.org/wp-content/uploads/2019/08/FSFW_Global-Trends-in-Nicotine_6.22.2020.pdf 2. Prohibition Partners; "The Global Cannabis Report – November 2019"
 3. Addressable market of third plant-based franchise is based on a global estimate in 2019.

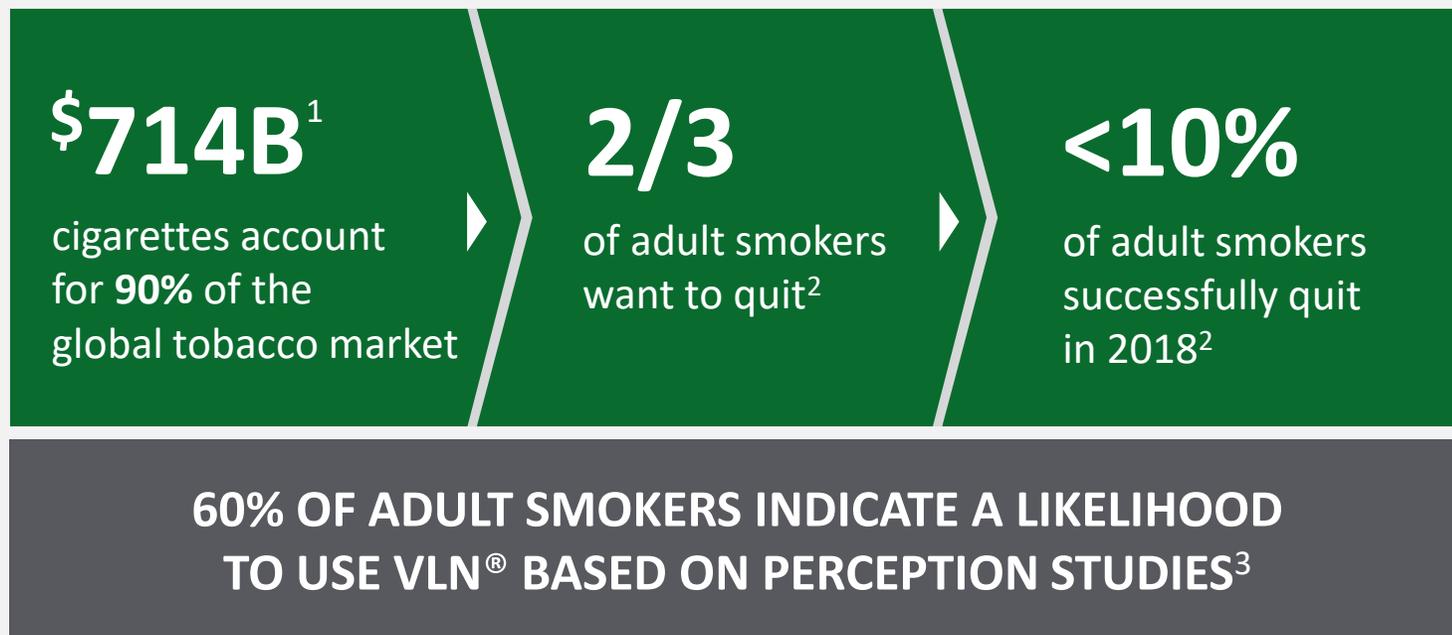
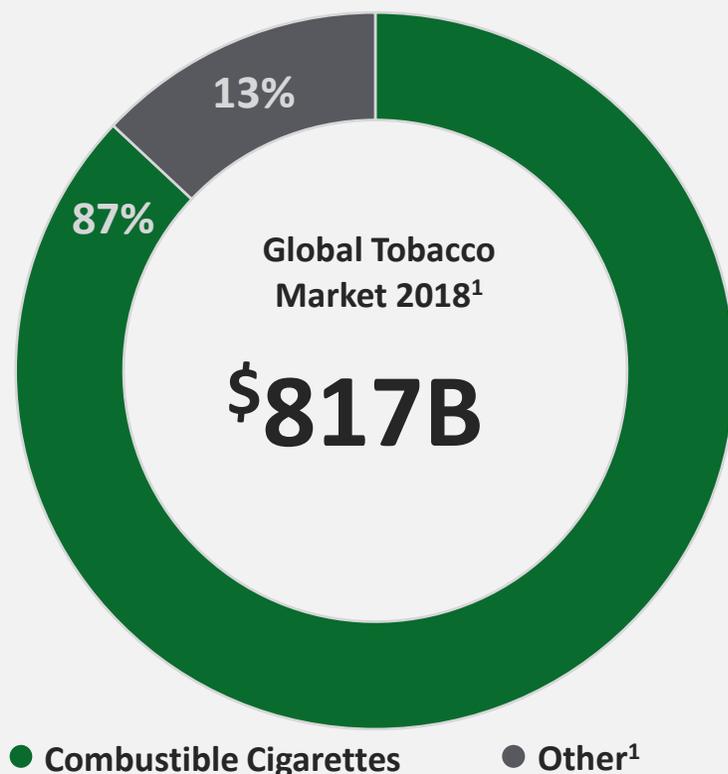
Tobacco

Hemp/Cannabis

Financials



VLN[®] HAS MASSIVE GLOBAL MARKET OPPORTUNITY



1. Foundation for a Smoke Free World; https://www.smokefreeeworld.org/wp-content/uploads/2019/08/FSFW_Global-Trends-in-Nicotine_6.22.2020.pdf
 2. Centers for Disease Control and Prevention; https://www.cdc.gov/tobacco/data_statistics/fact_sheets/cessation/smoking-cessation-fast-facts/index.html
 3. Based on consumer perception studies conducted by 22nd Century Group

TRANSFORMING TOBACCO WITH VLN[®]

VLN[®] IS A UNIQUE 95% REDUCED NICOTINE CONTENT COMBUSTIBLE CIGARETTE ALTERNATIVE UNLIKE ANY TOBACCO PRODUCT AVAILABLE IN THE MARKET TODAY.

What is VLN[®]?

- Proprietary, combustible cigarette made with tobacco that contains 95% less nicotine than conventional cigarette alternatives
- Familiar combustible product format that replicates the conventional cigarette experience including the sensory and experiential elements of taste, scent, smell, and “hand-to-mouth” behavior

How VLN[®] Helps Adult Smokers

- VLN[®] contains 0.5 mg of nicotine per gram of tobacco. An amount cited by FDA, based on clinical studies, to be “minimally or non-addictive”.
- Lack of reward from nicotine creates a dissociation between the act of smoking and nicotine which helps adult smokers reduce the harm caused by smoking

Science-Backed Research from Clinical Trials

- Since 2011, 22nd Century’s reduced nicotine content cigarettes has been used in more than 50 independent scientific clinical studies conducted by universities and institutions.
- Studies have been largely funded by U.S. government agencies and are estimated to have cost over \$100M

Discernable Adult Smoker Benefits^{1,2}

- ✓ Reduce nicotine exposure and dependence
- ✓ Smoke fewer cigarettes per day
- ✓ Experience reduced withdrawal symptoms
- ✓ Minimal or no compensatory smoking
- ✓ Increase number of smoke-free days
- ✓ Double quit attempts
- ✓ No increase in adverse effects in persons with mental health disorders

“Authorizing these reduced nicotine products for sale in the U.S. is **appropriate for the protection of public health**”

– FDA PMTA press release on 12/1/19

1. Sources: Eric C. Donny, Ph.D., Rachel L. Denlinger, B.S., et al. “Randomized Trial of Reduced-Nicotine Standards for Cigarettes.” Oct. 2015.

2. Dorothy K. Hatsukami, PhD; Xianghua Luo, PhD, et al., “Effect of Immediate vs Gradual Reduction in Nicotine Content of Cigarettes on Biomarkers of Smoke Exposure.” Sept. 2018.

FDA MRTP AUTHORIZATION ENABLES U.S. LAUNCH

MRTP authorization will allow VLN[®] to carry a headline claim of “95% less nicotine” on packaging

Fully Prepared For Commercial Launch of VLN[®]



Launch-ready for commercial sales within 90 days of FDA MRTP authorization



Identified both initial pilot and subsequent markets for launch



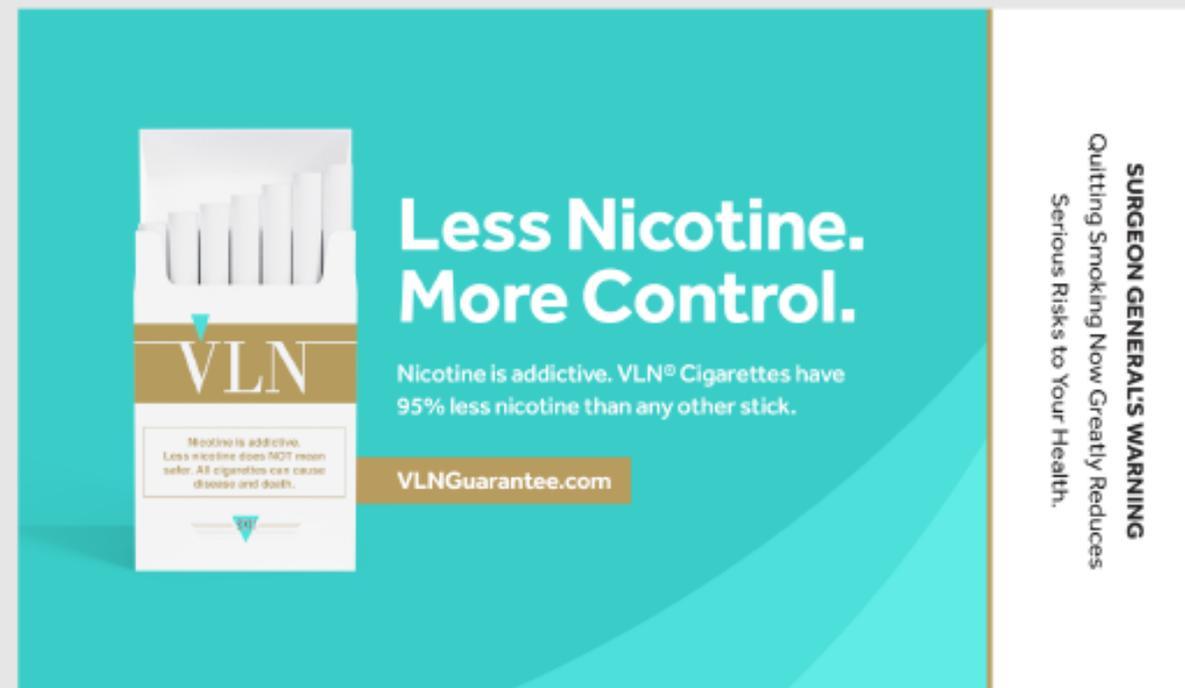
Advanced discussions with multiple trade and retail partners



Advancing marketing materials and other important aspects of the launch



Pilot program enables 22nd Century to test, measure, and refine materials to maximize the commercial success of VLN[®]



* Trade dress subject to change

22ND CENTURY'S VLN[®] PILOT WILL EMPHASIZE TRIAL, REPEAT PURCHASE, AND ADVOCACY BY ADULT SMOKERS

ACCELERATING INTERNATIONAL LAUNCH IN MULTIPLE MARKETS



- Initiating launch process of VLN[®] in countries with lower regulatory hurdles
- Targeting international market sales by Q1 '22
- Funded by proceeds from June 2021 capital raise
- Adding experienced growers in southern hemisphere for year-round growing of VLN[®]

Tobacco
Hemp/Cannabis
Financials



ENABLING THE FULL POTENTIAL OF CANNABIS

Accelerated modification of cannabis plants to the highest levels of quality, stability and scale



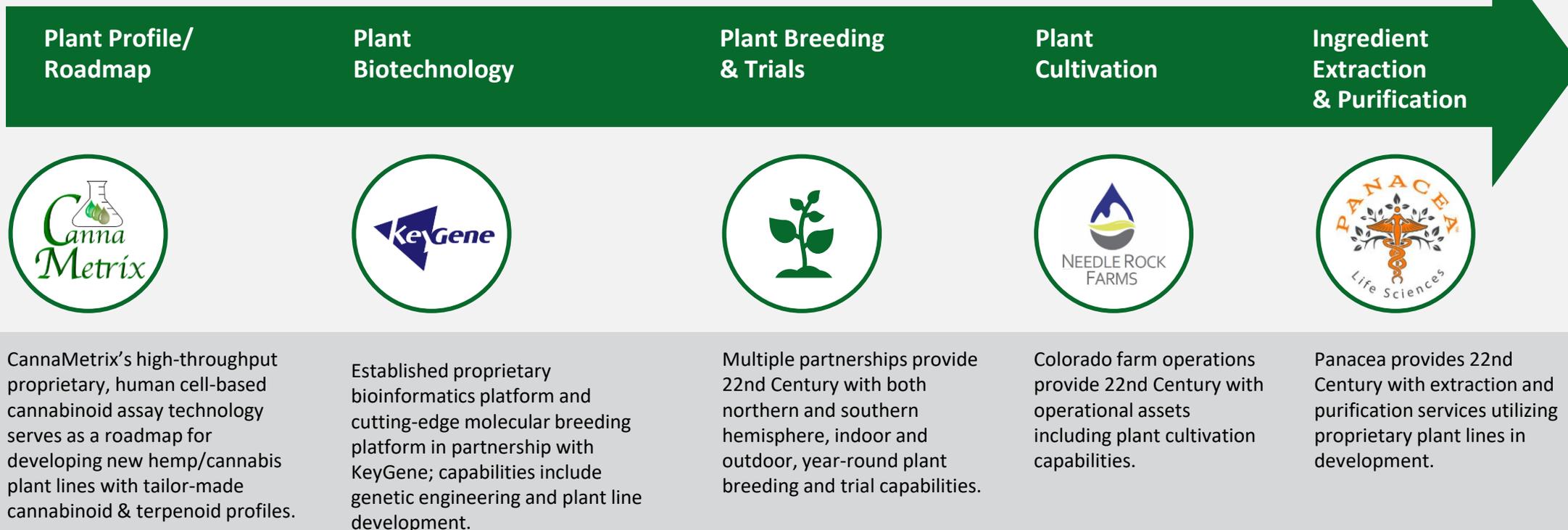
- Rapidly increasing demand is driving the need for proprietary, stable plant lines with optimized genetics for commercial use
- Ability to control the expression of CBD, THC, CBG, CBN, terpenes, and other cannabinoids is critical to financial returns and quality metrics

22nd Century Moving to Monetization in 2H '21:

- Off-take commitments for first high CBD and high CBG optimized plant lines growing now in Colorado
- IP revenue from both proprietary and Anandia technologies
- Accelerating next generation plant lines and IP for 2022 and 2023

ACCELERATING COMMERCIALIZATION OF NEW, DISRUPTIVE HEMP/CANNABIS PLANTS

Strategic partnerships enable 22nd Century to deliver valuable, commercial-scale plant lines, and IP in two-year cycles, the first of which is coming to completion.



22ND CENTURY NOW CONTROLS THE MOST INNOVATIVE UPSTREAM CANNABINOID VALUE CHAIN IN THE HEMP/CANNABIS INDUSTRY, AN ASSET CRITICAL TO UNLOCKING DISRUPTIVE PLANT LINES AND IP AT LARGE-SCALE.

Tobacco

Hemp/Cannabis

Financials



SECOND QUARTER 2021 FINANCIAL HIGHLIGHTS

	Net Sales	Gross Profit	Gross Profit Margin	Operating Loss	Cash and Cash Equivalents
2Q 2021	\$8.4M	\$586K	7.0%	\$(6.6)M	\$62.3M
2Q 2020	\$6.4M	\$201K	3.1%	\$(4.8)M	\$22.3M

+30% YOY NET SALES; +390 BASIS POINTS YOY GROSS PROFIT MARGIN¹

22nd Century Group currently generates revenue from tobacco contract manufacturing operations (CMO), self-funding the cost of facilities needed to manufacture research cigarettes and its reduced nicotine tobacco products ahead of U.S. and global launch.

1. Gross profit margin is calculated by dividing net sales revenue by gross profit.

2021 PRIORITIES & AREAS OF FOCUS

Tobacco Franchise

- 01 Secure MRTP Authorization from FDA**
- VLN[®] pilot programs ready to launch
 - Engaging with multiple distribution partners to support national launch capabilities
 - Ramping manufacturing capabilities
 - Moving ahead with international launches

- 02 Support, advance, and advocate for proposed nicotine cap mandate for all combustibles**
- Favorable political climate
 - Advancing licensing and partnership initiatives to support industry adoption

Hemp/Cannabis & Third Plant-based Franchise

- 03 Complete upstream cannabinoid capabilities**
- Monetize our hemp/cannabis IP beginning in 2021 and accelerating next generation plant lines for 2022 and 2023
 - Have now assembled the most complete upstream capability in the industry

- 04 Preparing to launch third plant-based franchise**
- Securing IP and strategic partnerships to support development of this franchise
 - Large, robust addressable market
 - Faster route to commercialization than first two franchises

Financial

- 05 Maintain efficient operating structure and balance sheet strength**
- Strengthened balance sheet with \$40 million in growth capital to accelerate product launch and commercialization
 - Deploying capital to fuel U.S. VLN[®] launch readiness, commence international sales of VLN[®], accelerate cannabis commercialization and launch third franchise

CONTACT INFORMATION



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FINANCIAL SNAPSHOT

\$ in millions

Select Financials

	Three Months Ended June 30,	
	2021	2020
Net sales revenue	\$ 8.4	\$ 6.4
Gross Profit Margin	\$.6	\$.2
Operating loss	\$ (6.6)	\$ (4.8)
Net loss	\$ (4.2)	\$ (5.1)
Net loss per common share - basic and diluted	\$ (0.03)	\$ (0.04)
Weighted average common shares outstanding – basic and diluted <i>(in thousands)</i>	154,811	138,854

Summary Balance Sheet Items

	Quarter Ended	
	June 30, 2021	December 31, 2021
Cash and cash equivalents ¹	\$ 62.3*	\$22.3
Total assets ²	\$ 97.2	\$51.7
Total liabilities ³	\$ 9.8	\$7.6
Total shareholders' equity ⁴	\$ 87.4	\$44.1

*Additional \$38.3M cash for growth capital from registered direct offering in June 2021

1. Cash and cash equivalents includes short-term investment securities.

2. Total assets is the sum of total current assets, total property, plant and equipment, and total other assets including intangible assets, net, Investments and convertible note.

3. Total liabilities includes current liabilities and long-term liabilities and excludes shareholders' equity.

4. Total shareholders' equity excludes any liabilities.

MANUFACTURING RAMP

22nd Century can immediately manufacture VLN[®] cigarettes in commercial quantities



PRODUCTION RAMP IN Q2 '21 CONFIRMS READINESS
TO SCALE VLN[®] FOR GLOBAL SALES

Manufacturing Geared For Strong Commercial Launch



62,000 sq. ft. manufacturing facility in NC; Growth in tobacco manufacturing volumes, record sales of \$8.4M in Q2 '21



Significantly expanded 2021 VLN[®] growing program to ensure adequate leaf inventory for launch



Planning southern hemisphere for VLN[®] growing program year-round



FDA inspected and cleared as part of the Premarket Tobacco Application (PMTA) process



Established internal nicotine content test capabilities – 90% cost reduction, results in 1 day vs. 2 to 4 weeks

OUR DIFFERENTIATED APPROACH TO HEMP/CANNABIS

We are selectively pursuing segments of the hemp/cannabis market that are currently underserved.

	Agronomic Characteristics	Cannabinoid Profile	End User Experience
Commoditized Industry Participants	<ul style="list-style-type: none"> Total cannabinoid yield is typically under 20% in cannabis plants, not capturing the potentiality yield in the plant¹ Inconsistent composition and stability of cannabinoids in plants Cannabis historically bred for drier, northern latitudes 	<ul style="list-style-type: none"> THC and CBD plant lines typically yield under 20% and 10% cannabinoids, respectively Difficult to efficiently extract rare cannabinoids Little customization available 	<ul style="list-style-type: none"> Distinct focus on THC and CBD Products are largely commoditized and undifferentiated in the market Off-taste and odor present difficulties in product formulation
The 22nd Century Advantage	<ul style="list-style-type: none"> ✓ Increasing cannabinoid yields to 25-35% ✓ Increasing cannabinoid production throughout plant (including leaves) ✓ Achieving predictable levels of cannabinoids (stable genetics) ✓ Introducing auto-flowering, disease resistance, and drought resistance to new lines 	<ul style="list-style-type: none"> ✓ Developing lines with significantly higher THC and CBD levels ✓ Developing lines with minor and novel cannabinoid profiles ✓ Customizing “entourage effect” through genetic mapping 	<ul style="list-style-type: none"> ✓ Increasing levels of THC, CBD and minor cannabinoids in the plant ✓ Modulating terpene levels to improve sensory characteristics

22ND CENTURY’S SCIENTIFIC AND SOLUTIONS-ORIENTED APPROACH IS CREATING VALUABLE NEW PLANTS AND IP IN THE HEMP/CANNABIS SPACE.