
UNITED STATES
SECURITIES AND EXCHANGE
COMMISSION WASHINGTON, D.C. 20549

FORM 10-Q

QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the Quarterly Period Ended March 31, 2022

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the Transition Period From _____ to _____

Commission File Number: 001-36338

22nd Century Group, Inc.

(Exact name of registrant as specified in its charter)

Nevada
(State or other jurisdiction
of incorporation)

98-0468420
(IRS Employer
Identification No.)

500 Seneca Street, Suite 507, Buffalo, New York 14204
(Address of principal executive offices)

(716) 270-1523
(Registrant's telephone number, including area code)

Securities registered under Section 12(b) of the Act:

Title of each class	Ticker symbol	Name of Exchange on Which Registered
Common Stock, \$0.00001 par value	XXII	NASDAQ Capital Market

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).

Yes No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	<input checked="" type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes No

As of April 29, 2022, there were 164,536,566 shares of common stock issued and outstanding.

22nd CENTURY GROUP, INC.

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22nd CENTURY GROUP, INC.
CONSOLIDATED BALANCE SHEETS
(\$ in thousands, except per-share data)

	March 31, 2022 (Unaudited)	December 31, 2021
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 1,584	\$ 1,336
Short-term investment securities	37,036	47,400
Accounts receivable, net	1,220	585
Inventory, net	3,753	2,881
Prepaid expenses and other assets	1,389	2,183
Total current assets	44,982	54,385
Property, plant and equipment, net	5,949	5,841
Operating leases right-of-use assets, net	1,631	1,723
Intangible assets, net	7,934	7,919
Investments	2,211	2,345
Other assets	3,770	3,741
Total assets	\$ 66,477	\$ 75,954
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Notes payable	\$ —	\$ 596
Operating lease obligations	359	308
Accounts payable	1,512	2,173
Accrued expenses	2,227	1,489
Accrued payroll	405	2,255
Accrued excise taxes and fees	2,009	1,270
Accrued severance	187	217
Deferred income	483	119
Total current liabilities	7,182	8,427
Long-term liabilities:		
Operating lease obligations	1,326	1,432
Severance obligations	—	21
Total liabilities	8,508	9,880
Commitments and contingencies (Note 11)		
Shareholders' equity		
Preferred stock, \$.00001 par value, 10,000,000 shares authorized		
Common stock, \$.00001 par value, 300,000,000 shares authorized		
Capital stock issued and outstanding:		
164,536,566 common shares (162,872,875 at December 31, 2021)		
Common stock, par value	2	2
Capital in excess of par value	245,460	244,247
Accumulated other comprehensive loss	(562)	(162)
Accumulated deficit	(186,931)	(178,013)
Total shareholders' equity	57,969	66,074
Total liabilities and shareholders' equity	\$ 66,477	\$ 75,954

See accompanying notes to consolidated financial statements.

22nd CENTURY GROUP, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS
(Unaudited)
(\$ in thousands, except per-share data)

	Three Months Ended	
	March 31,	
	2022	2021
Revenue:		
Sale of products, net	\$ 9,045	\$ 6,806
Cost of goods sold (exclusive of depreciation shown separately below):		
Products	8,585	6,159
Gross profit	460	647
Operating expenses:		
Research and development	972	701
Sales, general and administrative	7,305	4,829
Depreciation	168	138
Amortization	161	150
Total operating expenses	8,606	5,818
Operating loss	(8,146)	(5,171)
Other income (expense):		
Unrealized gain (loss) on investments	(817)	36
Interest income, net	50	112
Interest expense	(5)	(7)
Total other income (expense)	(772)	141
Loss before income taxes	(8,918)	(5,030)
Net loss	\$ (8,918)	\$ (5,030)
Other comprehensive loss:		
Unrealized loss on short-term investment securities	(400)	(32)
Other comprehensive loss	(400)	(32)
Comprehensive loss	\$ (9,318)	\$ (5,062)
Net loss per common share - basic and diluted	\$ (0.05)	\$ (0.03)
Weighted average common shares outstanding - basic and diluted (in thousands)	163,157	144,258

See accompanying notes to consolidated financial statements.

22nd CENTURY GROUP, INC.
CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY
(Unaudited)
(\$ in thousands)

	Three Months Ended March 31, 2022					
	Common Shares Outstanding	Par Value of Common Shares	Capital in Excess of Par Value	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Shareholders' Equity
Balance at December 31, 2021	162,872,875	\$ 2	\$ 244,247	\$ (162)	\$ (178,013)	\$ 66,074
Stock issued in connection with RSU vesting	1,663,691	—	—	—	—	—
Equity-based compensation	—	—	1,213	—	—	1,213
Unrealized gain (loss) on short-term investment securities	—	—	—	(400)	—	(400)
Net loss	—	—	—	—	(8,918)	(8,918)
Balance at March 31, 2022	164,536,566	2	245,460	(562)	(186,931)	57,969

	Three Months Ended March 31, 2021					
	Common Shares Outstanding	Par Value of Common Shares	Capital in Excess of Par Value	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Shareholders' Equity
Balance at December 31, 2020	139,061,690	\$ 1	\$ 189,439	\$ 74	\$ (145,404)	\$ 44,110
Stock issued in connection with RSU vesting	1,196,258	—	—	—	—	—
Stock issued in connection with option exercises	846,342	—	1,153	—	—	1,153
Stock issued in connection with warrant exercises	11,293,211	1	11,781	—	—	11,782
Equity-based compensation	—	—	507	—	—	507
Unrealized gain (loss) on short-term investment securities	—	—	—	(32)	—	(32)
Net loss	—	—	—	—	(5,030)	(5,030)
Balance at March 31, 2021	152,397,501	\$ 2	\$ 202,880	\$ 42	\$ (150,434)	\$ 52,490

See accompanying notes to consolidated financial statements.

22nd CENTURY GROUP, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited)
(\$ in thousands)

	Three Months Ended	
	March 31,	
	2022	2021
Cash flows from operating activities:		
Net loss	\$ (8,918)	\$ (5,030)
Adjustments to reconcile net loss to cash used in operating activities:		
Amortization and depreciation	267	226
Amortization of license fees	62	62
Amortization of ROU Asset	92	65
Unrealized (gain) loss on investment	817	(36)
Accretion of non-cash interest expense (income)	119	(39)
Equity-based employee compensation expense	1,213	507
(Increase) decrease in assets:		
Accounts receivable	(635)	135
Inventory	(872)	(103)
Prepaid expenses and other assets	794	526
Increase (decrease) in liabilities:		
Operating lease obligations	(55)	(66)
Accounts payable	(661)	381
Accrued expenses	647	(196)
Accrued payroll	(1,850)	214
Accrued excise taxes and fees	739	(166)
Accrued severance	(51)	(119)
Deferred income	364	(272)
Net cash used in operating activities	(7,928)	(3,911)
Cash flows from investing activities:		
Acquisition of patents, trademarks, and licenses	(105)	(20)
Acquisition of property, plant and equipment	(258)	(100)
Investment in Change Agronomy Ltd.	(682)	—
Sales and maturities of short-term investment securities	13,595	4,950
Purchase of short-term investment securities	(3,778)	(13,365)
Net cash provided by (used in) investing activities	8,772	(8,535)
Cash flows from financing activities:		
Payment on note payable	(596)	(246)
Net proceeds from option exercise	—	1,153
Net proceeds from warrant exercise	—	11,782
Net cash provided by (used in) financing activities	(596)	12,689
Net increase in cash and cash equivalents	248	243
Cash and cash equivalents - beginning of period	1,336	1,029
Cash and cash equivalents - end of period	\$ 1,584	\$ 1,272
Supplemental disclosures of cash flow information:		
Net cash paid for:		
Cash paid during the period for interest	\$ 3	\$ 1
Non-cash transactions:		
Patent and trademark additions included in accounts payable	\$ —	\$ 29
Property, plant and equipment additions included in accounts payable	\$ —	\$ 43
Property, plant and equipment additions included in accrued expenses	\$ 18	\$ —
Patent and trademark additions included in accrued expenses	\$ 73	\$ —

See accompanying notes to consolidated financial statements.

22nd CENTURY GROUP, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
March 31, 2022
(Unaudited)
Amounts in thousands, except for share and per-share data

NOTE 1. - NATURE OF BUSINESS AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation - The accompanying unaudited consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles (“GAAP”) for interim financial information and with the instructions to Form 10-Q. Accordingly, they do not include all the information and footnotes required by GAAP for complete financial statements. In the opinion of management, all adjustments consisting of normal recurring accruals considered necessary for a fair and non-misleading presentation of the financial statements have been included.

Operating results for the three months ended March 31, 2022 are not necessarily indicative of the results that may be expected for the year ending December 31, 2022. The balance sheet as of December 31, 2021 has been derived from the audited consolidated financial statements at that date but does not include all the information and footnotes required by GAAP for complete financial statements.

These interim consolidated financial statements should be read in conjunction with the December 31, 2021 audited consolidated financial statements and the notes thereto contained in our Annual Report on Form 10-K for the year ended December 31, 2021, as filed with the Securities and Exchange Commission on March 1, 2022.

Principles of Consolidation - The accompanying consolidated financial statements include the accounts of (i) 22nd Century Group, Inc. (“22nd Century Group”); (ii) its five wholly-owned subsidiaries, 22nd Century Limited, LLC (“22nd Century Ltd”), NASCO Products, LLC (“NASCO”), Botanical Genetics, LLC (“Botanical Genetics”), 22nd Century Group Canada, Inc. (“22nd Century Group Canada”) and 22nd Century Group Europe B.V. (“22nd Century Group Europe”); (iii) two wholly-owned subsidiaries of 22nd Century Ltd, Goodrich Tobacco Company, LLC (“Goodrich Tobacco”) and Heracles Pharmaceuticals, LLC (“Heracles Pharma”); and (iv) one wholly-owned subsidiary of Botanical Genetics, 22nd Century Holdings, LLC (“22nd Century Holdings”). This group of subsidiaries is referred to as collectively with 22nd Century Group as the “Company”. All intercompany accounts and transactions have been eliminated.

Nature of Business – 22nd Century Group is a leading agricultural biotechnology and intellectual property company focused on tobacco harm reduction, reduced nicotine tobacco and improving health and wellness through plant science. 22nd Century Ltd performs research and development related to the level of nicotine and other nicotinic alkaloids in tobacco plants and Botanical Genetics performs research and development related to hemp/cannabis plants. Goodrich Tobacco and Heracles Pharma are business units for the Company’s potential modified exposure tobacco products. NASCO is a federally licensed tobacco products manufacturer, a subsequent participating member under the tobacco Master Settlement Agreement (“MSA”) between the tobacco industry and the settling states under the MSA and operates the Company’s tobacco products manufacturing business in North Carolina. 22nd Century Holdings owns and operates Needle Rock Farms. 22nd Century Group Canada and 22nd Century Group Europe were formed for future international business opportunities.

Reclassifications – Certain prior period amounts have been reclassified to conform to the current period’s classification. None of these reclassifications had a material impact on our consolidated financial statements.

COVID-19 Pandemic – The COVID-19 pandemic has adversely impacted the U.S. economy and supply chains and created volatility in U.S. financial markets. The COVID-19 pandemic has had a minimal impact on the Company’s operations in 2021 and thus far in 2022, but there is a risk that state and federal authorities’ responses to the COVID-19 pandemic or another pandemic may disrupt our business in the future.

All our facilities continue to operate in compliance with state and local guidance (as applicable) related to the prevention of COVID-19 transmission and employee safety. We also continue to allow remote work arrangements by our employees where job duties permit.

Our executive leadership team and staff are monitoring this evolving situation and its impacts on our business. We will continue to monitor the local, state, and federal guidance regarding our business practices.

Use of Estimates - The preparation of financial statements in conformity with accounting principles generally accepted in the U.S. requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of income and expenses during the reporting period. Actual results could differ from those estimates.

Intangible Assets – Intangible assets are recorded at cost and consist primarily of (1) expenditures incurred with third-parties related to the processing of patent claims and trademarks with government authorities, as well as costs to acquire patent rights from third-parties, (2) license fees paid for third-party intellectual property, (3) costs to become a signatory under the tobacco MSA, and (4) license fees paid to acquire a predicate cigarette brand. The amounts capitalized relate to intellectual property that the Company owns or to which it has rights to use.

The Company's capitalized intellectual property costs are amortized using the straight-line method over the remaining statutory life of the patent assets in each of the Company's patent families, which have estimated expiration dates ranging from 2026 to 2043. Periodic maintenance or renewal fees are expensed as incurred. Annual minimum license fees are charged to expense. License fees paid for third-party intellectual property are amortized on a straight-line basis over the last to expire patents, which have expected expiration dates from 2028 through 2036. The Company believes that costs associated with becoming a signatory to the MSA, costs related to the acquisition of a predicate cigarette brand and trademarks have indefinite lives. As such, no amortization is taken. At each reporting period, the Company evaluates whether events and circumstances continue to support the indefinite-lived classification.

Impairment of Long-Lived Assets – On at least an annual basis, the Company reviews the carrying value of its amortizing long-lived assets whenever events or changes in circumstances indicate that the historical cost-carrying value of an asset may no longer be recoverable. If any such indicators are present, the Company will test for recoverability in accordance with ASC 360-Property, plant, and equipment or ASC 350- Intangibles, Goodwill, and Other.

Intangible assets subject to amortization are reviewed for strategic importance and commercialization opportunity prior to expiration. If it is determined that the asset no longer supports the Company's strategic objectives and/or will not be commercially viable prior to expiration, the asset is impaired. In addition, the Company will assess the expected future undiscounted cash flows for its intellectual property based on consideration of future market and economic conditions, competition, federal and state regulations, and licensing opportunities. If the carrying value of such assets are not recoverable, the carrying value will be reduced to fair value and record the difference as an impairment.

Indefinite-lived intangible asset carrying values are reviewed at least annually or more frequently if events or changes in circumstances indicate that it is more likely than not that an impairment exists. The Company first performs a qualitative assessment and considers its current strategic objectives, future market and economic conditions, competition, and federal and state regulations to determine if an impairment is more likely than not. If it is determined that an impairment is more likely than not, a quantitative assessment is performed to compare the asset carrying value to fair value and record the difference as an impairment.

Fair Value of Financial Instruments - The Company's financial instruments include cash and cash equivalents, short-term investment securities, accounts receivable, investments, a promissory note receivable, accounts payable, accrued expenses, and notes payable. The carrying values of these financial instruments approximate fair value. The Company carries cash equivalents, short-term investment securities, investments, and certain other assets at fair value which is described further in Note 6.

Investments – The Company's equity securities are recorded at fair value with changes in fair value included within the statement of operations. Equity securities without a readily determinable market value are carried at cost less impairment, adjusted for observable price changes in orderly transactions for an identical or similar investment of the same issuer. The Company considers certain debt instruments as available-for-sale securities, and accordingly, all unrealized gains and losses incurred on the short-term investment securities (the adjustment to fair value) are recorded in other comprehensive income or loss on the Company's Consolidated Statements of Operations and Comprehensive Loss.

Right-of-use assets (“ROU”) and Lease Obligations— The Company reviews any lease arrangements in accordance with ASU 2016-02, Subtopic ASC 842, Leases. Any lease having a lease term greater than twelve months will be recognized on the Consolidated Balance Sheets as a ROU asset with an associated lease obligation—all other leases are considered short-term in nature and will be expensed as payments are made over the lease term. The ROU assets and lease obligations are recognized as of the commencement date at the net present value of the fixed minimum lease payments for the lease term. The lease term is determined based on the contractual conditions, including whether renewal options are reasonably certain to be exercised. The discount rate used is the interest rate implicit in the lease, if available, or the Company’s incremental borrowing rate which is determined using a base line rate plus an applicable spread.

Stock Based Compensation – The Company’s Omnibus Incentive Plan allows for various types of equity-based incentive awards. Stock based compensation expense is based on awards that are expected to vest over the requisite service periods and are based on the fair value of the award measured on the grant date. Vesting requirements vary for directors, officers, and employees. In general, time-based awards fully vest after one year for directors and vest in equal annual installments over a three-year period for officers and employees. Performance-based awards vest upon achievement of certain milestones. Forfeitures are accounted for when they occur.

Income Taxes - For interim income tax reporting, due to a full valuation allowance on net deferred tax assets, no income tax expense or benefit is recorded unless it is an unusual or infrequently occurring item. The tax effects of unusual or infrequently occurring items, including changes in judgment about valuation allowances and effects of changes in tax laws or rates, are reported in the interim period in which they occur.

Recent Accounting Pronouncements – In June 2016, the FASB issued ASU 2016-13, “Measurement of Credit Losses on Financial Instruments.” The standard replaces the incurred loss model with the current expected credit loss (CECL) model to estimate credit losses for financial assets measured at amortized cost and certain off-balance sheet credit exposures. The CECL model requires companies to estimate credit losses expected over the life of the financial assets based on historical experience, current conditions and reasonable and supportable forecasts. The provisions of the ASU have an effective date for the Company beginning after December 15, 2022 and interim periods within those fiscal years. The Company is evaluating the expected impacts of the ASU.

We consider the applicability and impact of all ASUs. If the ASU is not listed above, it was determined that the ASU was either not applicable or would have an immaterial impact on our financial statements and related disclosures.

NOTE 2. - INVENTORY

Inventories are valued at the lower of historical cost or net realizable value. Cost is determined using an average cost method for tobacco leaf inventory, hemp/cannabis inventory, and raw materials inventory. Standard cost is primarily used for finished goods inventory. Inventories are evaluated to determine whether any amounts are not recoverable based on slow moving or obsolete condition and are written off or reserved as appropriate.

Inventories at March 31, 2022 and December 31, 2021 consisted of the following:

	March 31, 2022	December 31, 2021
Inventory - tobacco leaf	\$ 2,003	\$ 1,352
Inventory - hemp/cannabis	113	10
Inventory - finished goods		
Cigarettes and filtered cigars	267	256
Inventory - raw materials		
Cigarette and filtered cigar components	1,470	1,363
Less: inventory reserve	(100)	(100)
	<u>\$ 3,753</u>	<u>\$ 2,881</u>

NOTE 3. - PROPERTY, PLANT, AND EQUIPMENT, NET

Property, plant, and equipment, net at March 31, 2022 and December 31, 2021 consisted of the following:

	Useful Life	March 31, 2022	December 31, 2021
Land		\$ 1,665	\$ 1,665
Building	12 to 30 years	130	130
Leasehold Improvements	shorter of 15 years or lease term	198	179
Manufacturing equipment	3 to 10 years	5,580	5,541
Office furniture, fixtures and equipment	3 to 5 years	150	139
Laboratory equipment	5 years	198	198
Construction in progress		1,496	1,289
Less: accumulated depreciation		(3,468)	(3,300)
Property, plant and equipment, net		<u>\$ 5,949</u>	<u>\$ 5,841</u>

Depreciation expense was \$168 for the three months ended March 31, 2022 (\$138 for the three months ended March 31, 2021).

NOTE 4. - RIGHT-OF-USE ASSETS, LEASE OBLIGATIONS, AND OTHER LEASES

The Company leases a manufacturing facility and warehouse in North Carolina, a corporate headquarters in Buffalo, New York and a laboratory space in Rockville, Maryland. The corporate headquarters has an initial term of 36 months with two 24-month renewal options. The manufacturing facility and warehouse has an initial term of 24 months with one 24-month renewal option and the laboratory space has a term of 51 months. The Company assumed all renewal options in determination of each lease term.

The following table summarizes the Company's discount rate and remaining lease terms:

Weighted average remaining lease term in years	4.3
Weighted average discount rate	3.3 %

Future minimum lease payments as of March 31, 2022 are as follows:

2022	\$	304
2023		429
2024		448
2025		418
2026		111
Thereafter		108
Total lease payments		<u>1,818</u>
Less: imputed interest		<u>(133)</u>
Total	\$	<u>1,685</u>

NOTE 5. – INVESTMENTS & OTHER ASSETS

The total carrying value of the Company’s investments and other assets at March 31, 2022 and December 31, 2021 consisted of the following:

	March 31, 2022	December 31, 2021
Panacea Life Sciences Holdings, Inc. common stock	\$ 1,528	\$ 2,340
Aurora stock warrants	1	5
Change Agronomy Ltd. ordinary shares	682	—
Total investments	<u>\$ 2,211</u>	<u>\$ 2,345</u>
Promissory note receivable	<u>\$ 3,770</u>	<u>\$ 3,741</u>

Investment in Panacea Life Sciences Holdings, Inc.

Initial Investment:

On December 3, 2019, the Company entered into a securities purchase agreement with Panacea Life Sciences, Inc. (“Panacea”) whereby the Company acquired shares of Panacea Series B preferred stock; a convertible note receivable with a \$7,000 face value; and a warrant to purchase additional shares of Series B preferred stock.

On June 30, 2021, the Company entered into a Promissory Note Exchange Agreement with Panacea and a Securities Exchange Agreement with Panacea, Exactus, Inc. (“Exactus”) and certain other Panacea shareholders. Pursuant to the Securities Exchange Agreement, Exactus fully acquired Panacea. These transactions effected the (i) conversion of all of the Company’s Series B Preferred Stock in Panacea into 91,016,026 shares of common stock in Exactus valued at \$9,102 as of June 30, 2021 and (ii) the conversion of the Company’s existing debt in Panacea by converting the outstanding \$7,000 principal balance convertible note receivable and all accrued but unpaid interest thereon for fee simple ownership of Needle Rock Farms 224 acres in Delta County, Colorado) and equipment valued at \$2,248, \$500 in Panacea’s Series B Preferred Stock (which was subsequently converted to Exactus common stock under the Securities Exchange Agreement; this balance is reflected in final shares as stated above), and a new \$4,300 promissory note (the “Promissory note receivable”) with a maturity date of June 30, 2026 and a 0% interest rate. The Promissory note receivable is with a related party of Panacea and is fully secured by a first priority lien on Panacea’s headquarters located in Golden, Colorado. All other rights and obligations of the Company in Panacea and Panacea’s affiliate, Quintel-MC Incorporated, were terminated by this transaction—including all warrant rights and obligations for future investment. The conversion was recorded as a non-monetary transaction, based on the fair value of the assets received, and resulted in a gain of \$2,548 which was included within the Consolidated Statements of Operations and Comprehensive Loss as “Gain on Panacea investment conversion” during 2021.

The Promissory note receivable was valued at \$3,684 (\$4,300 face value less \$616 discount) and is included within the Consolidated Balance Sheets as “Other Assets.” As of March 31, 2022, the Promissory note receivable balance was \$3,770. The Company intends to hold the Promissory note receivable to maturity and the associated discount will be amortized into interest income over the term of the note. The ownership of Needle Rock Farms and related equipment is included within “Property, plant, and equipment, net” on the Consolidated Balance Sheets. The common shares of Exactus, Inc. are considered equity securities in accordance with ASC 321 and are recorded at fair value—changes in fair value will be included within the statement of operations. See Note 6 for additional information on the fair value measurements.

On October 25, 2021, Exactus announced the completion of a 1 for 28 reverse stock split as well as an entity name change to Panacea Life Sciences Holdings, Inc. (OTCQB: PLSH). As a result of the reverse stock split, our 91,016,026 shares were adjusted to 3,250,573 shares.

Investment in Aurora Cannabis Inc.

The Company has an investment in Aurora Cannabis Inc. (“Aurora”) stock warrants that are considered equity securities under ASC 321 – Investments – Equity Securities and a derivative instrument under ASC 815 – Derivatives and Hedging. The stock warrants are not designated as a hedging instrument, and in accordance with ASC 815, the Company’s investment in stock warrants are recorded at fair value with changes in fair value recorded to unrealized gain/loss as shown within the Company’s Consolidated Statements of Operations and Comprehensive Loss. See Note 6 for additional information on the fair value measurements.

Investment in Change Agronomy Ltd.

On December 10, 2021, the Company entered into a subscription agreement to invest £500 (pounds sterling, in thousands), in exchange for 592,888 ordinary shares of Change Agronomy Ltd. (“CAL”), a private company existing under the laws of England, at a price per share of £0.84333. CAL is a vertically integrated sustainable industrial hemp business that combines world-class genetics with leading agronomic techniques and infrastructure to provide full-service industrial hemp products to multiple global end markets. CAL presently has operations in Manitoba, Canada, and Italy. This equity investment was part of an Offer for Subscription by CAL for a minimum total of £3,000 at the same price per ordinary share. Approximately U.S. \$682 in funds were wired to CAL on January 26, 2022, and our investment of £500 equates to approximately 1.8% of CAL’s total equity.

NOTE 6. – FAIR VALUE MEASUREMENTS AND SHORT-TERM INVESTMENTS

FASB ASC 820 - “Fair Value Measurements and Disclosures” establishes a valuation hierarchy for disclosure of the inputs to valuation used to measure fair value. This hierarchy prioritizes the inputs into three broad levels as follows:

- Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities;
- Level 2 inputs are quoted prices for similar assets and liabilities in active markets or inputs that are observable for the asset or liability, either directly or indirectly through market corroboration, for substantially the full term of the financial instrument; and
- Level 3 inputs are unobservable inputs based on the Company’s own assumptions used to measure assets and liabilities at fair value.

A financial asset’s or a financial liability’s classification within the hierarchy is determined based on the lowest level input that is significant to the fair value measurement.

The following table presents information about our assets and liabilities measured at fair value as of March 31, 2022 and December 31, 2021, and indicates the fair value hierarchy of the valuation techniques the Company utilized to determine such fair value:

	Fair Value March 31, 2022			
	Level 1	Level 2	Level 3	Total
Assets				
Short-term investment securities:				
Money market funds	\$ 2,058	\$ —	\$ —	\$ 2,058
Corporate bonds	—	34,978	—	34,978
Total short-term investment securities	\$ 2,058	\$ 34,978	\$ —	\$ 37,036
Investments:				
Panacea Life Sciences Holdings, Inc. common shares	\$ 1,528	\$ —	\$ —	\$ 1,528
Aurora stock warrants	—	—	1	1
Change Agronomy Ltd. ordinary shares	—	—	682	682
Total investments	\$ 1,528	\$ —	\$ 683	\$ 2,211
Fair Value December 31, 2021				
	Level 1	Level 2	Level 3	Total
Assets				
Short-term investment securities:				
Money market funds	\$ 8,919	\$ —	\$ —	\$ 8,919
Corporate bonds	—	38,481	—	38,481
Total short-term investment securities	\$ 8,919	\$ 38,481	\$ —	\$ 47,400
Investments:				
Panacea Life Sciences Holdings, Inc. common shares	\$ 2,340	\$ —	\$ —	\$ 2,340
Aurora stock warrants	—	—	5	5
Total investments	\$ 2,340	\$ —	\$ 5	\$ 2,345

Money market mutual funds are valued at their daily closing price as reported by the fund. Money market mutual funds held by the Company are open-end mutual funds that are registered with the SEC that generally transact at a stable \$1.00 Net Asset Value (“NAV”) representing its estimated fair value. On a daily basis the fund’s NAV is determined by the fund based on the amortized cost of the funds underlying investments.

Corporate bonds are valued using pricing models maximizing the use of observable inputs for similar securities.

The investment in the Aurora stock warrants is measured at fair value using the Black-Scholes pricing model and is classified within Level 3 of the valuation hierarchy. The unobservable input is an estimated volatility factor of 97% and 92% as of March 31, 2022 and December 31, 2021, respectively. Therefore, changes in market volatility will impact the fair value measurement of our Aurora investment.

A 20% increase or decrease in the volatility factor used as of March 31, 2022 would have the impact of increasing or decreasing the fair value measurement of the stock warrants by an average of approximately \$2. A 20% increase or decrease in the volatility factor used at December 31, 2021 would have the impact of increasing or decreasing the fair value measurement of the stock warrants by an average of approximately \$6.

The investment in Panacea Life Sciences Holdings Inc. common shares is considered an equity security with a readily determinable fair value. The fair value is determined using the quotable market price as of the last trading day of the fiscal quarter.

The investment in Change Agronomy Ltd. is in a privately held company and its stock does not have a readily determinable fair value; therefore, the investment is carried at cost less impairment, adjusted for observable price changes in orderly transactions for an identical or similar investment of the same issuer.

The following table sets forth a summary of the changes in fair value of the Company's Level 3 investments for the three months ended March 31, 2022:

Fair Value at December 31, 2021	\$ 5
Unrealized loss on Aurora stock warrants	(4)
Investment in Change Agronomy Ltd. ordinary shares	682
Fair Value at March 31, 2022	<u>\$ 683</u>

The following tables set forth a summary of the Company's available-for-sale debt securities from amortized cost basis to fair value as of March 31, 2022 and December 31, 2021:

	Available for Sale Debt Securities March 31, 2022			
	Amortized Cost Basis	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Corporate bonds	\$ 35,541	\$ —	\$ (563)	\$ 34,978

	Available for Sale Debt Securities December 31, 2021			
	Amortized Cost Basis	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Corporate bonds	\$ 38,643	\$ 1	\$ (163)	\$ 38,481

The following table sets forth a summary of the Company's available-for-sale securities at amortized cost basis and fair value by contractual maturity as of March 31, 2022 and December 31, 2021:

	Available for Sale Debt Securities			
	March 31, 2022		December 31, 2021	
	Amortized Cost Basis	Fair Value	Amortized Cost Basis	Fair Value
Due in one year or less	\$ 15,508	\$ 15,339	\$ 8,286	\$ 8,280
Due after one year through five years	20,033	19,639	30,357	30,201
	<u>\$ 35,541</u>	<u>\$ 34,978</u>	<u>\$ 38,643</u>	<u>\$ 38,481</u>

NOTE 7. - INTANGIBLE ASSETS

Total intangible assets at March 31, 2022 and December 31, 2021 consisted of the following:

	March 31, 2022	December 31, 2021
Intangible assets, net		
Patent and trademark costs	\$ 6,167	\$ 5,991
Less: accumulated amortization	(3,402)	(3,303)
Patent and trademark costs, net	2,765	2,688
License fees	3,876	3,876
Less: accumulated amortization	(1,259)	(1,197)
License fees, net	2,617	2,679
MSA signatory costs	2,202	2,202
License fee for predicate cigarette brand	350	350
	<u>\$ 7,934</u>	<u>\$ 7,919</u>

Amortization expense relating to the above intangible assets for the three months ended March 31, 2022 amounted to \$61 (\$150 for the three months ended March 31, 2021).

NOTE 8. – NOTES PAYABLE

License Fees

On October 22, 2018, the Company entered into a License Agreement with the University of Kentucky. Under the terms of the License Agreement, the Company was obligated to pay the University of Kentucky milestone payments totaling \$1,200, of which \$300 was payable upon execution, and \$300 was payable annually over three years on the anniversary of the execution of the License Agreement. The Company recorded the present value of the obligations under the License Agreement as a note payable that originally amounted to \$1,151. As of November 30, 2021, the Company paid the final milestone payment of \$300. The cost of the acquired licenses amounted to \$1,151 and is included in Intangible assets, net on the Company's Consolidated Balance Sheets and will be amortized on a straight-line basis over the last-to-expire patent, which is expected to be in 2033.

D&O Insurance

During the second quarter of 2021, the Company renewed its Director and Officer ("D&O") insurance for a one-year policy premium totaling \$3,315. The Company paid \$662 as a premium down payment and financed the remaining \$2,653 of policy premiums over nine months at a 3.49% annual percentage rate.

The table below outlines our notes payable balances as of March 31, 2022 and December 31, 2021:

	March 31, 2022	December 31, 2021
D&O Insurance	\$ —	\$ 596

Accretion of non-cash interest expense amounted to \$0 for the three months ended March 31, 2022 and \$2 for the three months ended March 31, 2021.

NOTE 9. – SEVERANCE LIABILITY

During the second quarter of 2020, the Company recorded severance benefits related to a resignation of \$306. The benefits were provided over a twelve-month period.

During 2019, the Company recorded severance benefits of \$881. Consistent with certain contractual obligations, \$771 of the related benefit will be provided over a period of forty-two months.

The current and long-term accrued severance balance remaining as of March 31, 2022 was \$187 and \$0, respectively. The current and long-term accrued severance balance remaining as of December 31, 2021 was \$217 and \$21, respectively.

NOTE 10. – CAPITAL RAISE AND WARRANT EXERCISE

Capital Raise

On June 7, 2021, the Company entered into a placement agent agreement (the "Placement Agent Agreement") with Cowen and Company, LLC (the "Placement Agent") relating to the Company's registered direct offering (the "Offering") to a select investor (the "Investor"). In addition, on June 7, 2021, the Company and the Investor entered into a securities purchase agreement relating to the issuance and sale of shares of common stock pursuant to which the Investor purchased 10,000,000 shares of common stock at \$4.00 per share. The net proceeds to the Company from the Offering, after deducting Placement Agent fees and offering expenses, was \$38,206.

Warrant Exercise

During the first quarter of 2021, the Company's warrant holders exercised all 11,293,211 outstanding warrants for cash in exchange for common stock. In connection with these exercises, the Company received net proceeds of \$11,782. No warrants remain outstanding as of March 31, 2022.

NOTE 11. - COMMITMENTS AND CONTINGENCIES

License agreements and sponsored research— The Company has entered into various license, sponsored research, collaboration, and other agreements (the "Agreements") with various counter parties in connection with the Company's plant biotechnology business relating to tobacco, hemp/cannabis and hops. The schedule below summarizes the Company's commitments, both financial and other, associated with each Agreement. Costs incurred under the Agreements are generally recorded as research and development expenses on the Company's Consolidated Statements of Operations and Comprehensive Loss.

Commitment	Counter Party	Product Relationship	Commitment Type	Future Commitments					Total
				2022	2023	2024	2025	2026 & After	
Research Agreement	KeyGene	Hemp / Cannabis	Contract fee	\$ 1,406	\$ 1,860	\$ 1,828	\$ 1,414	\$ 1,630	\$ 8,138 (1)
License Agreement	NCSU	Tobacco	Annual royalty fee	203	—	—	—	—	203 (2), (3)
License Agreement	NCSU	Tobacco	Minimum annual royalty	38	50	50	50	550	738 (3)
License Agreement	NCSU	Tobacco	Minimum annual royalty	38	50	50	50	450	638 (3)
Research Agreement	NCSU	Tobacco	Contract fee	78	—	—	—	—	78 (4)
Sublicense Agreement	Anandia Laboratories, Inc.	Hemp / Cannabis	Annual license fee	—	10	10	10	100	130 (5)
Research Agreement	Cannametrix	Hemp / Cannabis	Contract fee	500	667	666	—	—	1,833 (6)
Consulting Agreements	Various	Various	Contract fee	997	808	746	—	—	2,551 (7)
				<u>\$ 3,260</u>	<u>\$ 3,445</u>	<u>\$ 3,350</u>	<u>\$ 1,524</u>	<u>\$ 2,730</u>	<u>\$ 14,309</u>

- (1) Exclusive agreement with the Company in the field of the Cannabis Sativa L. plant. The initial term of the agreement was five years with an option for an additional two years. On April 30, 2021, the Company and KeyGene entered into a First Amended and Restated Framework Collaborative Research Agreement which extended the agreement term, from first-quarter 2024 to first-quarter 2027, and preserves the Company's option for an additional 2-year extension, now through first quarter of 2029. On March 30, 2022, the Company and KeyGene entered into a new Framework Collaborative Research Agreement for a term of three years at an aggregate cost of \$1,830 in the field related to the hops plant.

The Company will exclusively own all results and all intellectual property relating to the results of the collaboration with KeyGene (the "Results"). The Company will pay royalties in varying amounts to KeyGene relating to the Company's commercialization in the stated fields of each agreement. The Company has also granted KeyGene a license to commercialize the Results outside of each field and KeyGene will pay royalties in varying amounts to the Company relating to KeyGene's commercialization of the Results outside of each field.

- (2) The annual royalty fee is credited against running royalties on sales of licensed products.
- (3) The Company is also responsible for reimbursing NCSU for actual third-party patent costs incurred, including capitalized patent costs and patent maintenance costs. These costs vary from year to year and the Company has certain rights to direct the activities that result in these costs.
- (4) On January 27, 2022, the Company entered into a one-year Sponsored Project Agreement with NCSU for continued research of tobacco alkaloid formation.
- (5) The Company is also responsible for the payment of certain costs, including, capitalized patent costs and patent maintenance costs, a running royalty on future net sales of products made from the sublicensed intellectual property, and a sharing of future sublicensing consideration received from sublicensing to third parties in all countries except for Canada. Anandia retains all patent rights, and is responsible for all patent maintenance, in Canada.
- (6) On March 11, 2022, the Company expanded its research agreement with Cannametrix for hemp/cannabis product development, formulation, and validation for a three-year period at an aggregate cost of \$2,000.

(7) General corporate consulting agreements.

Litigation - In accordance with applicable accounting guidance, the Company establishes an accrued liability for litigation and regulatory matters when those matters present loss contingencies that are both probable and estimable. In such cases, there may be an exposure to loss in excess of any amounts accrued. When a loss contingency is not both probable and estimable, the Company does not establish an accrued liability. As a litigation or regulatory matter develops, the Company, in conjunction with any outside counsel handling the matter, evaluates on an ongoing basis whether such matter presents a loss contingency that is probable and estimable. If, at the time of evaluation, the loss contingency related to a litigation or regulatory matter is not both probable and estimable, the matter will continue to be monitored for further developments that would make such loss contingency both probable and estimable. When a loss contingency related to a litigation or regulatory matter is deemed to be both probable and estimable, the Company will establish an accrued liability with respect to such loss contingency and record a corresponding amount of related expenses. The Company will then continue to monitor the matter for further developments that could affect the amount of any such accrued liability.

Class Action

On January 21, 2019, Matthew Jackson Bull, a resident of Denver, Colorado, filed a Complaint against the Company, the Company's then Chief Executive Officer, Henry Sicignano III, and the Company's then Chief Financial Officer, John T. Brodfuehrer, in the United States District Court for the Eastern District of New York entitled: Matthew Bull, Individually and on behalf of all others similarly situated, v. 22nd Century Group, Inc., Henry Sicignano III, and John T. Brodfuehrer, Case No. 1:19 cv 00409.

On January 29, 2019, Ian M. Fitch, a resident of Essex County Massachusetts, filed a Complaint against the Company, the Company's then Chief Executive Officer, Henry Sicignano III, and the Company's then Chief Financial Officer, John T. Brodfuehrer, in the United States District Court for the Eastern District of New York entitled: Ian Fitch, Individually and on behalf of all others similarly situated, v. 22nd Century Group, Inc., Henry Sicignano III, and John T. Brodfuehrer, Case No. 2:19 cv 00553.

On May 28, 2019, the plaintiff in the Fitch case voluntarily dismissed that action. On August 1, 2019, the Court in the Bull case issued an order designating Joseph Noto, Garden State Tire Corp, and Stephens Johnson as lead plaintiffs.

On September 16, 2019, pursuant to a joint motion by the parties, the Court in the Bull case transferred the class action to federal district court in the Western District of New York, where it remains pending as Case No. 1:19-cv-01285.

Plaintiffs in the Bull case filed an Amended Complaint on November 19, 2019 that alleges three counts: Count I sues the Company and Messrs. Sicignano and Brodfuehrer and alleges that the Company's quarterly and annual reports, SEC filings, press releases and other public statements and documents contained false statements in violation of Section 10(b) of the Securities Exchange Act and Rule 10b-5; Count II sues Messrs. Sicignano and Brodfuehrer pursuant to Section 10(b) of the Securities Exchange Act and Rule 10b5(a) and (c); and Count III sues Messrs. Sicignano and Brodfuehrer for the allegedly false statements pursuant to Section 20(a) of the Securities Exchange Act. The Amended Complaint seeks to certify a class, and unspecified compensatory and punitive damages, and attorney's fees and costs.

On January 29, 2020, the Company and Messrs. Sicignano and Brodfuehrer filed a Motion to Dismiss the Amended Complaint. On July 31, 2020, the Court heard oral arguments on the motion to dismiss. On January 14, 2021, the Court granted motion, dismissing all claims with prejudice. The Plaintiffs filed a notice of appeal on February 12, 2021 to the Second Circuit Court of Appeals. The Second Circuit has granted an expedited briefing schedule and Plaintiff's/Appellant's was filed on April 12, 2021 and the Company's was filed on May 17, 2021. The Second Circuit heard oral arguments on September 2, 2021 and the matter remains pending with the Second Circuit.

We believe that the claims are frivolous, meritless and that the Company and Messrs. Sicignano and Brodfuehrer have substantial legal and factual defenses to the claims. We intend to vigorously defend the Company and Messrs. Sicignano and Brodfuehrer against such claims.

Shareholder Derivative Cases

On February 6, 2019, Melvyn Klein, a resident of Nassau County New York, filed a shareholder derivative claim against the Company, the Company's then Chief Executive Officer, Henry Sicignano III, the Company's Chief Financial Officer, John T. Brodfuehrer, and each member of the Company's Board of Directors in the United States District Court for the Eastern District of New York entitled: Melvyn Klein, derivatively on behalf of 22nd Century Group v. Henry Sicignano, III, Richard M. Sanders, Joseph Alexander Dunn, Nora B. Sullivan, James W. Cornell, John T. Brodfuehrer and 22nd Century Group, Inc., Case No. 1:19 cv 00748. Mr. Klein brings this action derivatively alleging that (i) the director defendants supposedly breached their fiduciary duties for allegedly allowing the Company to make false statements; (ii) the director defendants supposedly wasted corporate assets to defend this lawsuit and the other related lawsuits; (iii) the defendants allegedly violated Section 10(b) of the Securities Exchange Act and Rule 10b 5 promulgated thereunder for allegedly approving or allowing false statements regarding the Company to be made; and (iv) the director defendants allegedly violated Section 14(a) of the Securities Exchange Act and Rule 14a 9 promulgated thereunder for allegedly approving or allowing false statements regarding the Company to be made in the Company's proxy statement.

On February 11, 2019, Stephen Mathew filed a shareholder derivative claim against the Company, the Company's then Chief Executive Officer, Henry Sicignano III, the Company's Chief Financial Officer, John T. Brodfuehrer, and each member of the Company's Board of Directors in the Supreme Court of the State of New York, County of Erie, entitled: Stephen Mathew, derivatively on behalf of 22nd Century Group, Inc. v. Henry Sicignano, III, John T. Brodfuehrer, Richard M. Sanders, Joseph Alexander Dunn, James W. Cornell, Nora B. Sullivan and 22nd Century Group, Inc., Index No. 801786/2019. Mr. Mathew brings this action derivatively generally alleging the same allegations as in the Klein case. The Complaint seeks declaratory relief, unspecified monetary damages, corrective corporate governance actions, and attorney's fees and costs. On August 15, 2019, the Court consolidated the Mathew and Klein actions pursuant to a stipulation by the parties (Western District of New York, Case No. 1-19-cv-0513). We believe that the claims are frivolous, meritless and that the Company and the individual defendants have substantial legal and factual defenses to the claims. We intend to vigorously defend the Company and the individual defendants against such claims.

On June 10, 2019, Judy Rowley filed a shareholder derivative claim against the Company, the Company's then Chief Executive Officer, Henry Sicignano III, the Company's Chief Financial Officer, John T. Brodfuehrer, and each member of the Company's Board of Directors in the Supreme Court of the State of New York, County of Erie, entitled: Judy Rowley, derivatively on behalf of 22nd Century Group, Inc. v. Henry Sicignano, III, Richard M. Sanders, Joseph Alexander Dunn, Nora B. Sullivan, James W. Cornell, John T. Brodfuehrer, and 22nd Century Group, Inc., Index No. 807214/2019. Ms. Rowley brings this action derivatively alleging that the director defendants supposedly breached their fiduciary duties by allegedly allowing the Company to make false statements. The Complaint seeks declaratory relief, unspecified monetary damages, corrective corporate governance actions, and attorney's fees and costs. We believe that the claims are frivolous, meritless and that the Company and the individual defendants have substantial legal and factual defenses to the claims. We intend to vigorously defend the Company and the individual defendants against such claims. On September 13, 2019, the Court ordered the litigation stayed pursuant to a joint stipulation by the parties.

On January 15, 2020, Kevin Broccuto filed a shareholder derivative claim against the Company, the Company's then Chief Executive Officer, Henry Sicignano III, the Company's Chief Financial Officer, John T. Brodfuehrer, and certain members of the Company's prior Board of Directors in the District Court of the State of Nevada, County of Clark, entitled: Kevin Broccuto, derivatively on behalf of 22nd Century Group, Inc. v. James W. Cornell, Richard M. Sanders, Nora B. Sullivan, Henry Sicignano, III, and John T. Brodfuehrer, Case No. A-20-808599. Mr. Broccuto brings this action derivatively alleging three counts: Count I alleges that the defendants breached their fiduciary duties; Count II alleges they committed corporate waste; and Count III that they were unjustly enriched, by allegedly allowing the Company to make false statements.

On February 11, 2020, Jerry Wayne filed a shareholder derivative claim against the Company, the Company's then Chief Executive Officer, Henry Sicignano III, the Company's Chief Financial Officer, John T. Brodfuehrer, and certain members of the Company's prior Board of Directors in the District Court of the State of Nevada, County of Clark, entitled: Jerry Wayne, derivatively on behalf of 22nd Century Group, Inc. v. James W. Cornell, Richard M. Sanders, Nora B. Sullivan, Henry Sicignano, III, and John T. Brodfuehrer, Case No. A-20-808599. Mr. Wayne brings this action derivatively alleging generally the same allegations as the Broccuto case. The Complaint seeks unspecified monetary damages, corrective corporate governance actions, disgorgement of alleged profits and imposition of constructive trusts, and attorney's fees and costs. The Complaint also seeks to declare as unenforceable the Company's Bylaw requiring derivative lawsuits to be filed in Erie County, New York, where the Company is headquartered.

On March 25, 2020, the Court ordered the Broccuto and Wayne cases consolidated and stayed pursuant to a joint stipulation from the parties. We believe that the claims are frivolous, meritless and that the Company and the individual defendants have substantial legal and factual defenses to the claims. We intend to vigorously defend the Company and the individual defendants against such claims.

NOTE 12 – EQUITY- BASED COMPENSATION

On May 20, 2021, the shareholders of 22nd Century Group, Inc. (the “Company”) approved the 22nd Century Group, Inc. 2021 Omnibus Incentive Plan (the “2021 Plan”). The 2021 Plan allows for the granting of equity awards to eligible individuals over the life of the 2021 Plan, including the issuance of up to 5,000,000 shares of the Company’s common stock, in addition to any remaining shares under the Company’s 2014 Omnibus Incentive Plan pursuant to awards under the 2021 Plan. The 2021 Plan has a term of ten years and is administered by the Compensation Committee of the Company’s Board of Directors to determine the various types of incentive awards that may be granted to recipients under the 2021 Plan and the number of shares of common stock to underlie each such award under the 2021 Plan. As of March 31, 2022, the Company had available 4,990,653 shares remaining for future awards under the 2021 Plan.

Restricted Stock Units (“RSUs”). We typically grant RSUs to employees and non-employee directors. The following table summarizes the changes in invested RSUs from December 31, 2021 through March 31, 2022.

	Unvested RSUs	
	Number of Shares in thousands	Weighted Average Grant-date Fair Value \$ per share
Unvested at December 31, 2021	3,165	\$ 2.50
Granted	2,607	\$ 2.19
Vested	(1,664)	\$ 2.39
Forfeited	(71)	\$ 2.40
Unvested at March 31, 2022	4,037	\$ 2.35

The fair value of RSUs that vested during the three months ended March 31, 2022 was approximately \$,800 based on the stock price at the time of vesting.

Stock Options. Our outstanding stock options were valued using the Black-Scholes option-pricing model on the date of the award. There was no stock option activity during the three months ended March 31, 2022. A summary of the status of stock options activity since December 31, 2021 and at March 31, 2022 is as follows:

	Number of Options in thousands	Weighted Average Exercise Price \$ per share	Weighted Average Remaining Contractual Term	Aggregate Intrinsic Value
Outstanding at December 31, 2021	5,171	\$ 1.65		
Outstanding at March 31, 2022	5,171	\$ 1.65	3.4 years	\$ 4,107
Exercisable at March 31, 2022	5,014	\$ 1.62	3.3 years	\$ 4,107

The intrinsic value of a stock option is the amount by which the current market value or the market value upon exercise of the underlying stock exceeds the exercise price of the option.

The Company did not grant any stock options in 2022. In 2021, the weighted average of fair value assumptions used in the Black-Scholes option-pricing model for such grants were as follows:

	2021
Risk-free interest rate (1)	0.54 %
Expected dividend yield (2)	— %
Expected volatility (3)	87.92 %
Expected term of stock options (4)	4.09 years

- (1) The risk-free interest rate is based on the period matching the expected term of the stock options based on the U.S. Treasury yield curve in effect on the grant date.
- (2) The expected dividend yield is assumed as zero. The Company has never paid cash dividends nor does it anticipate paying dividends in the foreseeable future.
- (3) The expected volatility is based on historical volatility of the Company's stock.
- (4) The expected term represents the period of time that options granted are expected to be outstanding based on vesting date and contractual term.

Compensation Expense. The Company recognized the following compensation costs, net of actual forfeitures, related to RSUs and stock options:

	Three Months Ended	
	March 31,	
	2022	2021
Sales, general, and administrative	\$ 1,171	\$ 480
Research and development	42	27
Total RSUs and stock option compensation	<u>\$ 1,213</u>	<u>\$ 507</u>

As of March 31, 2022, unrecognized compensation expense amounted to \$8,855 which is expected to be recognized over a weighted average period of approximately 1.5 years. In addition, there is approximately \$682 of unrecognized compensation expense that requires the achievement of certain milestones which are not yet probable.

NOTE 13. – REVENUE RECOGNITION

The Company recognizes revenue when it satisfies a performance obligation by transferring control of the product to a customer. The Company's customer contracts consist of obligations to manufacture the customers' branded filtered cigars and cigarettes. For certain contracts, the performance obligation is satisfied over time as the Company determines, due to contract restrictions, it does not have an alternative use of the product and it has an enforceable right to payment as the product is manufactured. The Company recognizes revenue under those contracts at the unit price stated in the contract based on the units manufactured. Revenue from the sale of the Company's products, which include excise taxes and shipping and handling charges billed to customers, is recognized net of cash discounts, sales returns and allowances. There was no allowance for discounts or returns and allowances at March 31, 2022 and December 31, 2021. Excise taxes recorded in Cost of Goods Sold on the Consolidated Statement of Operations and Comprehensive Loss for the three months ended March 31, 2022 and 2021 were \$2,719 and \$2,063, respectively.

Contract Assets and Liabilities

Unbilled receivables (contract assets) represent revenues recognized for performance obligations that have been satisfied but have not been billed. These receivables are included as Accounts receivable, net on the Consolidated Balance Sheets. Customer payment terms vary depending on the terms of each customer contract, but payment is generally due prior to product shipment or within extended credit terms up to twenty-one (21) days after shipment. Deferred Revenue (contract liabilities) relate to down payments received from customers in advance of satisfying a performance obligation. This deferred revenue is included as Deferred income on the Consolidated Balance Sheets.

Total contract assets and contract liabilities are as follows:

	March 31, 2022	December 31, 2021
Unbilled receivables	\$ 213	\$ 178
Deferred revenue	(483)	(119)
Net contract assets	<u>\$ (270)</u>	<u>\$ 59</u>

Disaggregation of Revenue

The Company's net sales revenue is derived from customers located primarily in the United States of America and is disaggregated by the timing of revenue recognition—net sales transferred over time and net sales transferred at a point in time. Revenue is primarily related to contract manufacturing.

	Three Months Ended March 31,	
	2022	2021
Net sales-over time	\$ 6,684	\$ 4,512
Net sales-point in time	2,361	2,294
Total Revenue	<u>\$ 9,045</u>	<u>\$ 6,806</u>

NOTE 14. – EARNINGS PER SHARE

The following table sets forth the computation of basic and diluted loss per common share for the three months ended March 31, 2022 and 2021, respectively. Outstanding options and RSUs were excluded from the calculation of diluted EPS as the effect was antidilutive.

	Three Months Ended March 31,	
	2022	2021
	(in thousands, except for per-share data)	
Net loss	\$ (8,918)	\$ (5,030)
Weighted average common shares outstanding - basic and diluted	163,157	144,258
Net loss per common share - basic and diluted	<u>\$ (0.05)</u>	<u>\$ (0.03)</u>
Anti-dilutive shares are as follows as of March 31:		
Options	5,171	5,964
Restricted stock units	4,037	3,483
	<u>9,208</u>	<u>9,447</u>

Item 2. Management’s Discussion and Analysis of Financial Condition and Results of Operations

The following Management’s Discussion and Analysis of Financial Condition and Results of Operations (“MD&A”) should be read in conjunction with, our audited consolidated financial statements, the accompanying notes and the MD&A included in our Annual Report on Form 10-K for the fiscal year ended December 31, 2021, as well as our consolidated financial statements and the accompanying notes included in Item 1 of this Form 10-Q. Note references are to the notes to consolidated financial statements included in Item 1 of this Form 10-Q.

For purposes of this MD&A, references to the “Company,” “we,” “us” or “our” refer to the operations of 22nd Century Group, Inc. and its direct and indirect subsidiaries for the periods described herein. In addition, dollars are in thousands, except per share data or unless otherwise specified.

Forward Looking Statements

Except for historical information, all of the statements, expectations, and assumptions contained in this section are forward-looking statements. Forward-looking statements typically contain terms such as “anticipate,” “believe,” “consider,” “continue,” “could,” “estimate,” “expect,” “explore,” “foresee,” “goal,” “guidance,” “intend,” “likely,” “may,” “plan,” “potential,” “predict,” “preliminary,” “probable,” “project,” “promising,” “seek,” “should,” “will,” “would,” and similar expressions. Actual results might differ materially from those explicit or implicit in forward-looking statements. Important factors that could cause actual results to differ materially are set forth in “Risk Factors” in our Annual Report on Form 10-K filed on March 1, 2022. 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 otherwise required by law. All information provided in this quarterly report is as of the date hereof, and we assume no obligation to and do not intend to update these forward-looking statements, except as required by law.

Business Overview

22nd Century Group, Inc. (Nasdaq: XXII) is a leading agricultural biotechnology company focused on tobacco harm reduction, reduced nicotine tobacco and improving health and wellness through plant science. In tobacco, hemp/cannabis, and hop plants, we use modern plant breeding technologies, including genetic engineering, gene-editing, and molecular breeding to deliver solutions for the life science and consumer products industries by creating new, proprietary plants with optimized alkaloid and flavonoid profiles as well as improved yields and valuable agronomic traits. Our mission in tobacco is to reduce the harm caused by smoking by introducing adult smokers to our proprietary Very Low Nicotine Content “VLNC” tobacco and cigarette products. The Company received the first and only Food and Drug Administration (“FDA”) Modified Risk Tobacco Product (“MRTP”) authorization of a combustible cigarette in December 2021. Our mission in hemp/cannabis is to develop proprietary varieties of hemp with valuable cannabinoid and terpene profiles and other superior agronomic traits, with potential applications in life sciences and consumer products. Our mission in hops is to leverage our experience with tobacco and hemp/cannabis, a close hop relative, and accelerate the development of proprietary specialty hop varieties or valuable traits, with potential applications in life sciences and consumer products. We have a significant intellectual property portfolio of issued patents and patent applications relating to both tobacco and hemp/cannabis plants and have further resources directed towards creating and securing additional intellectual property pertaining to all three franchises.

Tobacco Franchise Overview

In tobacco, we have developed unique and proprietary bright and burley Very Low Nicotine Content (“VLNC”) tobaccos that grow with at least 95% less nicotine than tobacco used in conventional cigarettes. In the year 2011, we developed our SPECTRUM® variable nicotine research cigarettes in collaboration with independent researchers, officials from the FDA, the National Institute on Drug Abuse (“NIDA”), which is part of the National Institutes of Health (“NIH”), the National Cancer Institute (“NCI”), and the Centers for Disease Control and Prevention (“CDC”). Since 2011, we have provided more than 31.6 million variable nicotine research cigarettes for use in numerous independent clinical studies funded in large part by agencies of the United States federal government. These independent clinical studies are estimated to have been performed at a cost of more than \$125 million. The results of these independent clinical studies have been published in peer-reviewed publications (including the New England Journal of Medicine, the Journal of the American Medical Association, and many others) and indicate that our VLNC tobaccos have been associated with reductions in smoking, nicotine exposure and nicotine dependence with little to no evidence of compensatory smoking and without serious adverse events. Lists of published and on-going clinical studies using our variable nicotine research cigarettes are shown on

our website at <https://www.xxiiicentury.com/vln-clinical-studies/published-clinical-studies-on-very-low-nicotine-content-vlnc-cigarettes> and <https://www.xxiiicentury.com/vln-clinical-studies/on-going-clinical-studies-on-very-low-nicotine-content-vlnc-cigarettes>. We do not incorporate third party studies or the information on our website into this Quarterly Report on Form 10-Q.

We believe that our proprietary reduced nicotine content cigarettes, sold under the brand name VLN[®], have a large global market opportunity. According to a 2018 report by the Foundation for a Smoke Free World, the global tobacco market was worth \$817 billion and of that, \$714 billion, or approximately 90% of the global tobacco market is comprised of combustible cigarettes. According to the CDC and WHO (World Health Organization), there are more than 1 billion global and 30 million U.S. adult smokers. CDC statistics go on to state that more than two-thirds of adult smokers want to quit, yet less than ten percent of them are able to quit successfully. We believe that smokers are actively seeking alternatives to addictive combustible cigarettes. In our consumer perception studies, 60% of adult smokers indicated a likelihood to use VLN[®].

Our VLN[®] cigarettes contain 95% less nicotine than conventional cigarettes in a familiar combustible product format that replicates the conventional cigarette smoking experience, including the sensory and experiential elements of taste, scent, smell, and “hand-to-mouth” behavior. The tobacco in VLN[®] cigarettes contain on average 0.5 milligrams of nicotine per gram of tobacco, an amount cited by the FDA, based on clinical studies, to be “minimally or non-addictive.” It is believed that the reduced nicotine levels in VLN[®] creates a dissociation between the act of smoking and the introduction of nicotine to the bloodstream, which helps adult smokers to smoke less.

Since 2011, our reduced nicotine content cigarettes have been used in more than 50 independent scientific clinical studies by universities and institutions. These studies show that smokers who use our products: (i) reduce their nicotine exposure and dependence, (ii) smoke fewer cigarettes per day, (iii) increase their number of smoke-free days, and (iv) double their quit attempts – all with minimal or no evidence of nicotine withdrawal or compensatory smoking. Our research cigarettes, SPECTRUM[®], continue to be used in numerous independent, scientific studies to validate the enormous public health benefit identified by the FDA and others of implementing a national product standard requiring all cigarettes to contain “minimally or nonaddictive” levels of nicotine.

In December 2019, the FDA granted a Premarket Tobacco Application (“PMTA”) authorization for our reduced nicotine content cigarettes, giving us the ability to sell our reduced nicotine cigarettes. On December 23, 2021, the FDA authorized the marketing of the Company’s VLN[®] King and VLN[®] Menthol King reduced nicotine content cigarettes as modified risk tobacco products with a modified exposure classification (MRTPs). In doing so, the FDA stated that VLN[®] - which smokes, tastes, and smells like a conventional cigarette but contains 95% less nicotine than conventional, highly addictive cigarettes – “help reduce exposure to, and consumption of, nicotine for smokers who use them.” In its marketing order granting the MRTPs, the FDA authorized an additional fourth claim: “Helps You Smoke Less” that we must use in the advertising and on the packaging of all VLN[®] products where other approved claims are also used.

Following FDA authorization, we commenced activities to launch VLN[®] culminating in initial sales in April 2022 in the Chicago metro area through our exclusive retail pilot launch partner, Circle K. We anticipate a phased rollout of VLN[®] to additional geographies where we will continue to position VLN[®] in the premium pricing segment of the cigarette market.

We believe that recent political changes will likely be favorable to our business prospects from a policy priority and regulatory standpoint. Under the new administration and new leadership at the FDA and Center for Tobacco Products (CTP), we believe that the FDA will refocus on implementing a menthol ban on combustible high nicotine cigarettes and its ground-breaking Comprehensive Plan for Tobacco and Nicotine Regulation, in particular the agency’s plan to cap the amount of nicotine in combustible cigarettes to a “minimally or non-addictive” level. We believe that the MRTP authorization and the launch of VLN[®] serves as a starting point for the FDA’s proposed policies.

On January 27, 2022, the FDA posted an update on its FDA Voices site stating that it “remains on track” with its plans to prohibit menthol in combustible tobacco products. We continue to support upcoming FDA action and believe VLN[®] Menthol King reduced nicotine cigarettes could be exempted from the menthol ban to help current menthol smokers transition away from highly addictive nicotine cigarettes. The FDA published a proposed tobacco product standard to ban menthol as a characterizing flavor in cigarettes in April 2022. The proposed FDA rule includes a process for firms to request an exemption from the standard for specific products of certain types on a case-by-case basis, indicating “reduced nicotine” as an example of such exemption.

We believe that our next generation, non-GMO (genetically modified organism) plant research is the key to commercializing our reduced nicotine content tobacco and technology in international markets where non-GMO products are preferred or GMO products are banned. In partnership with North Carolina State University, we have completed successful research field trials. During the first quarter of 2021, we published a new U.S. patent, entitled “A Genetic Approach for Achieving Ultra Low Nicotine Content in Tobacco” (PCT/US2021/012742). The new technology provides us with methods and a new approach to introduce very low nicotine traits into virtually any variety of tobacco, including bright, burley, and oriental tobacco varieties. We have successfully applied our non-GMO technology to bright and burley varieties of tobacco and have developed a VLN[®] 2.0 prototype cigarette. In February 2022, we initiated commercial growing activities for our non-GMO reduced nicotine varieties including, non-GMO VLN[®] bright and burley varieties. We anticipate production of VLN[®] 2.0 American blend cigarettes beginning in 2023.

Hemp/Cannabis Franchise Overview

In hemp/cannabis, we are developing proprietary hemp/cannabis varieties with increased levels of certain cannabinoids and other desirable agronomic traits with the goal of generating new and valuable intellectual property and plant lines.

Our activities in the United States involve only work with legal hemp in full compliance with U.S. federal and state laws. The hemp and the marijuana plants are both part of the same cannabis genus, except that hemp does not have more than 0.3% dry weight content of delta-9-tetrahydrocannabinol (“THC”). While the 2018 Farm Bill legalized hemp and cannabinoids extracted from hemp in the U.S., such extracts remain subject to state laws and regulation by other U.S. federal agencies such as the FDA, U.S. Drug Enforcement Administration (“DEA”), and the U.S. Department of Agriculture (“USDA”). The same plant, with a higher THC content is marijuana, which is legal under certain state laws but not yet legal under U.S. federal law. The similarities between these plants can cause confusion. To reflect this difference in law, sometimes we refer to legal hemp and the legal hemp industry as hemp/cannabis to distinguish this as being separate and apart from marijuana/cannabis which is not legal under U.S. federal law. Our activities with legal hemp have sometimes been incorrectly perceived as us being involved in federally illegal marijuana/cannabis. This is not the case. In the United States, we work only with legal hemp in full compliance with federal and state laws, and outside the U.S., we operate in full compliance with the laws of each country in which we operate.

Our goal is to provide leading companies in the life science, consumer product, and pharmaceutical end-use markets with new, disruptive, and highly differentiated plant lines or ingredients (flower, extracts, distillates, isolates, etc.) derived from hemp/cannabis plants. Most existing hemp/cannabis plant lines do not exhibit the stable genetics, predictable yield, and specific composition of cannabinoids required to fully unlock the value of the hemp/cannabis industry. Our plant genetics and innovative upstream cannabinoid value chain provide for rapid development and optimization of plant products and scale-up as the industry evolves toward mass production.

Hops Franchise Overview

We are leveraging our experience with tobacco and hemp/cannabis to accelerate the development of proprietary specialty hop varieties with valuable competitive advantages to increase yields and distinctive aroma, flavor, nutraceutical and medicinal properties, and disease/pest resistance. We believe that our innovative upstream alkaloid plant value chain is critical to unlocking new disruptive hop plant varieties and IP at large-scale. We are leveraging research findings from the closely related hemp/cannabis plant and our strategic partnerships to support the development of our new technologies based on molecular breeding, flowering time, and double haploid breeding to accelerate the stabilization or creation of hop varieties. Industry reliance on high-risk traditional breeding techniques makes hops ripe for disruption with our new accelerated molecular breeding technologies and gene-editing tools.

Hops is a large global addressable market with well-established hops providers and consumer brands. We are actively engaged in discussions with multiple hops growers and consumer product partners to develop specific desired traits in leading hop strains that are already well-accepted by the brewing industry. We have an exclusive agreement with KeyGene for research with the hops plant. We believe hops presents a faster route to commercialization than tobacco and hemp/cannabis due to lower regulatory barriers.

Additional information about our business and operations is contained in our Annual Report on Form 10-K for the year ended December 31, 2021.

Notable Accomplishments and Recent Announcements

Tobacco Franchise:

- Commenced pilot market sales of VLN[®] King and VLN[®] Menthol King 95% reduced nicotine content cigarettes, the first and only FDA authorized MRTP designated combustible cigarettes.
 - VLN[®] is now available at more than 150 Chicago-area Circle K retail stores in a pilot launch designed to optimize our marketing programs.
 - Positioned VLN[®] in the premium pricing segment of the cigarette market, with corresponding margins.
 - VLN[®] packaging prominently displays FDA mandated claim of “Helps You Smoke Less.”
 - Advanced discussions with potential channel partners to expand the regional and national sales reach of VLN[®] as the pilot program results become available.
- Ahead of our planned national VLN[®] launch, we have secured the regulatory authorizations to sell VLN[®] in 9 states to date: Illinois, California, New York, Colorado, Texas, Florida, Minnesota, Mississippi, and Rhode Island.
 - Applications pending in additional states, with responses expected by summer for most states, particularly those undertaking their annual Master Settlement Agreement (MSA) directory reviews in April.
- Completed the first shipments of VLN[®] to South Korea as part of our international launch program.
 - We believe that the South Korean market is an ideal market in which to test VLN[®]'s global appeal given its strong premium pricing, high smoking rates including one in three adult men, and interest in alternative tobacco choices.
 - Continuing to explore launch opportunities in additional markets in Asia and Europe with limited regulatory barriers while also leveraging VLN[®]'s MRTP authorization from the FDA toward seeking approval in markets with higher regulatory barriers.
- Continued our support of FDA's proposed ban on menthol as a characterizing flavor in conventional nicotine cigarettes.
 - The FDA's proposed menthol cigarette ban could leave VLN[®] Menthol King as the only combustible menthol cigarette on the market, providing a critical off-ramp to help current menthol smokers to smoke less.
 - We currently have the only FDA-authorized tobacco cigarette able to meet the stringent reduced nicotine content product standard under the FDA's Comprehensive Plan requiring that all cigarettes be made “minimally or non-addictive.”
 - Completing delivery of a purchase order for 3 million variable nicotine research cigarettes, including menthol, for use in studies underpinning FDA's proposed menthol ban and reduced nicotine content proposals.
- Contracted the largest VLN[®] tobacco planting to date to support expansion in both the U.S. and international markets.
 - Planting will include use of the new southern hemisphere capabilities to facilitate year-round growing of VLN[®] tobacco.
 - The growing program for the first time includes our proprietary, non-GMO VLN[®] 2.0 bright and burley tobacco varieties at commercial scale.

Hemp/Cannabis Franchise:

- Continued revenue opportunities from hemp/cannabis IP and plant lines, including license fees from the Anandia biosynthesis IP jointly owned with Aurora Cannabis Inc and distillate and isolate sales.
- Preparing plant lines for expanded growing programs at our USDA Organic-Certified Needle Rock Farms aligned to specific buyer interest in each plant line placed into the field.
- Announced an industry-first breakthrough in hemp/cannabis plant transformation with our partner KeyGene, expanding the Company's capabilities in modifying the principal genes controlling cannabinoid biosynthesis in the plant.

- Shipped next generation seeds to Extractas Bioscience for breeding and scale up evaluation to identify the plant lines best suited to grow in the Asia Pacific growing region. Extractas Bioscience is a world leader in the research, manufacturing, and export of botanical extracts and purified products with a specialization in hemp/cannabis.

Hops Franchise:

- Continued to advance our entry into the specialty hops market, our third and newest alkaloid plant franchise and closely related to hemp/cannabis
- Expanded work under an exclusive agreement with partner KeyGene in support of proprietary hops development programs tied to specific grower needs.

Corporate Business:

- Dr. Calvin Treat joined the Company as our Chief Scientific Officer, effective May 25, 2022, further enhancing our deep expertise in plant-based biotechnology across all three of our plant franchises. Dr. Treat has led global plant biotechnology programs at Bayer and Monsanto, including corn, soybean, and cotton crop technologies.
- Our CEO, James A. Mish, was appointed to our Board of Directors, enhancing our Board's depth of experience in the commercialization of science-driven consumer products as we prepare to launch our first reduced nicotine content tobacco products and commercially modified hemp/cannabis plant lines.
- New research coverage of the Company was initiated by Brian Wright, a leading agricultural technology analyst at Roth Capital Partners.

First Quarter 2022 Financial Highlights:

- Net sales for the first quarter of 2022 were \$9,045, an increase of 32.9% from \$6,806 in the prior year period.
- Gross profit for the first quarter of 2022 declined by \$187, or 29% to \$460 compared to the prior year period.
- Net loss in the first quarter of 2022 was \$8,918 and included a \$817 non-cash unrealized loss related to the fair value of investments, compared to the first quarter of 2021 net loss of \$5,030.
- As of March 31, 2022, we had \$38,620 in cash, cash equivalents and short-term investment securities.

Results of Operations

Year-to-Date March 31, 2022 compared to Year-to-Date March 31, 2021.

Amounts in thousands, except for share and per share data.

Revenue - Sale of products, net

	Year-to-Date	
	March 31 2022	March 31 2021
Sale of products, net	\$ 9,045	\$ 6,806
Dollar Change from Prior Year	\$ 2,239	

The increase in revenue for the three months ended March 31, 2022, compared to the three months ended March 31, 2021, was primarily the result of an increase in sales of contract manufactured cigarettes of \$1,031 and filtered cigars of \$1,208, resulting primarily from new customer contracts.

Cost of goods sold - Products / Gross profit (loss)

	Year-to-Date	
	March 31 2022	March 31 2021
Cost of goods sold	\$ 8,585	\$ 6,159
Percent of Product Sales	94.9 %	90.5 %
Dollar Change from Prior Year	\$ 2,426	

	Year-to-Date	
	March 31 2022	March 31 2021
Gross profit	\$ 460	\$ 647
Percent of Product Sales	5.1 %	9.5 %
Dollar Change from Prior Year	\$ (187)	

For the three months ended March 31, 2022, the decrease in gross profit as compared to 2021 was mainly due to product mix. Product revenue and margins can vary from quarter to quarter due to customer order volume and product mix within the period. Increases in customer prices and volume were offset by lower sales of high margin products in the first quarter of 2022.

Research and development (“R&D”) expense

	Year-to-Date	
	March 31 2022	March 31 2021
Research and development	\$ 972	\$ 701
Percent of Product Sales	10.7 %	10.3 %
Dollar Change from Prior Year	\$ 271	

Higher R&D expense for the three months ended March 31, 2022, as compared to the prior year period, was primarily driven by an increase in hemp/cannabis license, royalty and contract costs of \$323, offset by lower legal fees of \$25 and personnel expense of \$18. We continue to prioritize our R&D activities to achieve our strategic and investment priorities.

Sales, general and administrative expense

	Year-to-Date	
	March 31 2022	March 31 2021
Sales, general and administrative	\$ 7,305	\$ 4,829
Percent of Product Sales	80.8 %	71.0 %
Dollar Change from Prior Year	\$ 2,476	

The increase in sales, general and administrative (“SG&A”) expense during the three months ended March 31, 2022, as compared to the respective prior year period, was driven by increased strategic consulting of \$1,219, non-cash equity compensation expense of \$692, legal fees of \$554, insurance expenses of \$155, and increased travel and entertainment expenses of \$104. This was partially offset by lower personnel expense of \$299 as compared to the respective prior year period.

We have invested in this incremental SG&A spending to continue to ramp up our efforts to allow us to move toward market readiness in both tobacco, hemp/cannabis and hops. We will continue to invest in SG&A spending as growth and opportunities present themselves.

Depreciation expense

	Year-to-Date	
	March 31 2022	March 31 2021
Depreciation	\$ 168	\$ 138
Percent of Product Sales	1.9 %	2.0 %
Dollar Change from Prior Year	\$ 30	

The increase in depreciation expense during the three months ended March 31, 2022 as compared to the respective prior year period, was mainly due to the assets acquired with the Panacea investment conversion in the second quarter of 2021, further described in Note 5.

Amortization expense

	Year-to-Date	
	March 31 2022	March 31 2021
Amortization	\$ 161	\$ 150
Percent of Product Sales	1.8 %	2.2 %
Dollar Change from Prior Year	\$ 11	

Amortization expense relates to the amortization taken on capitalized patent costs and license fees. The increase in 2022 was due to a higher intangible asset depreciable base from the development of new patents that further enhances our intangible asset portfolio.

Unrealized gain (loss) on investment

	Year-to-Date	
	March 31 2022	March 31 2021
Unrealized gain (loss) on investments	\$ (817)	\$ 36
Percent of Product Sales	(9.0)%	0.5 %
Dollar Change from Prior Year	\$ (853)	

Unrealized gain (loss) on investment includes fair value adjustments for our investment in Aurora Cannabis Inc (“Aurora”) stock warrants and our investment in Panacea Life Sciences Holdings, Inc. (“PLSH”) common stock. Both investments are considered equity securities and are adjusted to fair value at each reporting period as discussed within Note 6 to our consolidated financial statements included herein.

The warrants to purchase 81,164 shares of Aurora common stock were valued at \$1 as of March 31, 2022, using the Black-Scholes pricing model, which amounted to an unrealized loss of \$4 for the three months ended March 31, 2022 compared to an unrealized gain of \$36 for the three months ended March 31, 2021.

Our shares of PLSH common stock were valued based on the closing share price as of March 31, 2022. As of March 31, 2022, the shares were valued at \$1,528 resulting in the recognition of an unrealized loss of \$813 for the period. Our investment in PLSH is a small microcap stock which can be subject to large market volatility resulting in fluctuations to our net loss and loss per share—due to unrealized gains or losses that will be recognized within the Consolidated Statements of Operations. Our investment is described further within Note 5 to our financial statements included herein.

Interest income, net

	Year-to-Date	
	March 31 2022	March 31 2021
Interest Income, net	\$ 50	\$ 112
Percent of Product Sales	0.6 %	1.7 %
Dollar Change from Prior Year	\$ (62)	

Interest income, net (interest income less investment fees) is comprised of cash interest income and non-cash interest accretion. Cash interest income is primarily derived from interest earned on our short-term investment securities and non-cash interest income is primarily related to accretion of short-term investment securities purchased at a discount or premium and accretion of certain other assets recorded at a discount.

Cash interest income for the three months ended March 31, 2022 decreased \$102, as compared to the respective prior year period, primarily due to lower bond interest yields on our short-term investment securities. Non-cash interest accretion for the three months ended March 31, 2022 increased \$164, as compared to the respective prior year period, \$42 related to a note receivable obtained from our Panacea investment conversion and \$122 related to the accretion of our short-term investment securities.

Interest expense

	Year-to-Date	
	March 31 2022	March 31 2021
Interest Expense	\$ (5)	\$ (7)
Percent of Product Sales	(0.1)%	(0.1)%
Dollar Change from Prior Year	\$ 2	

Interest expense decreased in 2022, as compared to the prior year period, primarily due to the reduction of our severance liability and lower note payable balances for our licenses which were fully paid off during the fourth quarter of 2021.

Net loss

	Year-to-Date	
	March 31 2022	March 31 2021
Net Loss	\$ (8,918)	\$ (5,030)
Percent of Product Sales	(98.6)%	(73.9)%
Dollar Change from Prior Year	\$ (3,888)	

The increase in net loss for the three months ended March 31, 2022, as compared to the same period during the prior year, was primarily the result of increased operating expenses of \$2,787, an increase in unrealized loss on investments of \$853, primarily relating to our Aurora stock warrants and PLSH common stock investments, a decrease in gross profit of \$187 and lower interest income in the amount of \$62.

Other Comprehensive Loss

	Year-to-Date	
	March 31 2022	March 31 2021
Other Comprehensive Loss	\$ (400)	\$ (32)
Percent of Product Sales	(4.4)%	(0.5)%
Dollar Change from Prior Year	\$ (368)	

We maintain an account for short-term investment securities that are classified as available-for-sale securities and consist of money market funds and corporate bonds with maturities greater than three months at the time of acquisition. Unrealized gains and losses on short-term investment securities (the adjustment to fair value) are recorded as other comprehensive income or loss.

We recorded an unrealized loss on short-term investment securities in the amount of \$400 resulting in other comprehensive loss for the three months ended March 31, 2022, as compared to an unrealized loss of \$32 for the prior year respective period.

Liquidity and Capital Resources

	Year-to-Date	
	March 31 2022	March 31 2021
Net cash used in operating activities	\$ (7,928)	\$ (3,911)
Net cash provided by (used in) investing activities	8,772	(8,535)
Net cash provided by (used in) financing activities	(596)	12,689
Net increase in cash and cash equivalents	248	243
Cash and cash equivalents - beginning of period	1,336	1,029
Cash and cash equivalents - end of period	\$ 1,584	\$ 1,272
Short-term investment securities	\$ 37,036	\$ 29,671

Working Capital

As of March 31, 2022, we had working capital of \$37,800 compared to working capital of \$45,958 at December 31, 2021 a decrease of \$8,158. This decrease in working capital was primarily due to a \$9,403 decrease in net current assets and was offset by a decrease in net current liabilities of \$1,245. Cash, cash equivalents and short-term investment securities decreased by \$10,116 and the remaining net current assets increased by \$713.

Net cash used in operating activities

Cash used in operating activities increased \$4,017 from \$3,911 in 2021 to \$7,928 in 2022. The primary driver for this increase was higher SG&A spending of \$2,475 and an increase in cash used for working capital components related to operations in the amount of \$1,914 for the three months ended March 31, 2022, as compared to the three months ended March 31, 2021.

Net cash provided by (used in) investing activities

Cash provided by investing activities amounted to \$8,772 for the three months ended March 31, 2022, as compared to cash used in investing activities of \$8,535 for the three months ended March 31, 2021. The increase in cash provided by investing activities of \$17,307 was the result of an increase provided from transactions relating to our short-term investment account in the amount of \$18,232. These increased cash inflows were partially offset by a decrease in cash flows (cash outflow) of \$243 related to the acquisitions of patents, trademarks and property, plant and equipment and \$682 related to our investment in Change Agronomy.

Net cash provided by financing activities

During the three months ended March 31, 2022, cash provided by financing activities decreased by \$13,285 resulting from (i) the net proceeds of \$11,782 resulting from the cash exercises of all outstanding warrants in the first quarter of 2021; (ii) increased note payable payments of \$350; and (iii) net proceeds from stock option exercises of \$1,259 in the prior year period.

Cash demands on operations

Our principal sources of liquidity are our cash and cash equivalents, short-term investment securities, and cash generated from our contract manufacturing business. As of March 31, 2022, we had approximately \$38,620 of cash and cash equivalents and short-term investments which is a decrease of \$10,116 from December 31, 2021. Our short-term investment securities, along with sustained contract manufacturing sales, provide sufficient resources for estimated contractual commitments, described further in Note 11 to our consolidated financial statements included herein, and normal cash requirements for operations beyond the next twelve months. In addition to the commitments described in Note 11 to our consolidated financial statements included herein, we have secured contracts with select tobacco farmers to assist with the growing of our VLNC tobacco. These contracts will increase the quantity of our current leaf inventory which will help support expected demand of VLN[®], particularly now that MRTP authorization was granted by the FDA in December 2021. The cost of such growing efforts is dependent on the final agricultural yields and leaf quality, but we expect the cost to be approximately \$3.9 million for the 2022 growing season. We also believe that we have appropriate liquidity to successfully manufacture and distribute our VLN[®] cigarette throughout the Chicago pilot launch with Circle K followed by a broader market launch, as well as appropriate liquidity for continued R&D investment in all our plant franchises.

We also have an effective S-3 shelf registration statement on file with the U.S. Securities and Exchange Commission (SEC), which provides us flexibility and optionality to raise additional capital as needed. However, there can be no assurance that capital will be available to us on acceptable terms or at all.

Critical Accounting Policies and Estimates

There have been no material changes to the information set forth in our Annual Report on Form 10-K for the year ended December 31, 2021.

Off-Balance Sheet Arrangements

We do not have any off-balance sheet arrangements as defined by Item 303(a)(4) of Regulation S-K.

Item 3. Quantitative and Qualitative Disclosures about Market Risk

There have been no material changes to the information set forth in our Annual Report on Form 10-K for the year ended December 31, 2021.

Item 4. Controls and Procedures

(a) Evaluation of Disclosure Controls and Procedures:

The Company maintains disclosure controls and procedures that are designed to ensure that information required to be disclosed in its Securities Exchange Act of 1934 ("Exchange Act") reports are recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to the Company's management, including the Company's chief executive officer and chief financial officer, as appropriate, to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

Our chief executive officer and chief financial officer, after evaluating the effectiveness of the Company's "disclosure controls and procedures" (as defined in the Exchange Act Rules 13a-15(e) or 15d-15(e)) as of the end of the period covered by this quarterly report, have concluded that our disclosure controls and procedures were effective as of the end of the period covered by this Form 10-Q to ensure information required to be disclosed is recorded, processed, summarized and reported within the time period specified by SEC rules, based on their evaluation of these controls and procedures as required by paragraph (b) of Exchange Act Rules 13a-15 or 15d-15.

(b) Changes in Internal Control over Financial Reporting:

There were no changes in the Company's internal controls over financial reporting during the first quarter of 2022 that have materially affected, or are reasonably likely to materially affect, the Company's internal controls over financial reporting.

Part II. OTHER INFORMATION

Item 1. Legal Proceedings

See Note 11 - Commitments and Contingencies – Litigation - to our consolidated financial statements included in this Quarterly Report for information concerning our on-going litigation. In addition to the lawsuits described in Note 11, from time to time we may be involved in claims arising in the ordinary course of business. To our knowledge other than the cases described in Note 11 to our consolidated financial statements, no material legal proceedings, governmental actions, investigations or claims are currently pending against us or involve us that, in the opinion of our management, could reasonably be expected to have a material adverse effect on our business and financial condition.

Item 1A. Risk Factors

Except as set forth below, there have been no material changes from the risk factors disclosed in Item 1A of Part I of our Annual Report on Form 10-K for the year ended December 31, 2021, as filed with the SEC on March 1, 2022.

The FDA recently proposed rules to ban menthol cigarettes and flavored cigars, which if implemented, could have a material adverse impact on our business.

On April 27, 2022, the FDA proposed new rules banning menthol cigarettes and flavors in cigars. If these proposed rules are finalized and implemented, we and our customers for whom we manufacture tobacco products could be negatively impacted through decreased sales, a requirement to remove non-compliant tobacco products from the marketplace, associated interruptions in manufacturing or business disruptions. In addition, although we expect that our VLN[®] Menthol King reduced nicotine cigarettes will be exempted from FDA's menthol ban on cigarettes, there is no guarantee that they will be exempted by the FDA. Accordingly, the implementation of these new proposed rules may have a material adverse impact on us or the business of our customers for whom we make tobacco products, which could have a negative impact on our results of operations.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds.

None

Item 3. Default Upon Senior Securities.

None

Item 4. Mine Safety Disclosures

None

Item 5. Other Information

None

Item 6. Exhibits

- Exhibit 31.1 [Section 302 Certification - Chief Executive Officer](#)
- Exhibit 31.2 [Section 302 Certification - Chief Financial Officer](#)
- Exhibit 32.1 [Certification of Principal Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350 as adopted pursuant to section 906 of the Sarbanes-Oxley Act of 2002.](#)
- 101.INS Inline XBRL Instance Document
- 101.SCH Inline XBRL Taxonomy Extension Schema Document
- 101.CAL Inline XBRL Taxonomy Extension Calculation Linkbase Document
- 101.DEF Inline XBRL Taxonomy Extension Definition Linkbase Document
- 101.LAB Inline XBRL Taxonomy Extension Label Linkbase Document
- 101.PRE Inline XBRL Taxonomy Extension Presentation Linkbase Document
- Exhibit 104 Cover Page Interactive Data File (formatted as Inline XBRL)

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized:

22nd CENTURY GROUP, INC.

Date: May 5, 2022

/s/ James A. Mish
James A. Mish
Chief Executive Officer
(Principal Executive Officer)

Date: May 5, 2022

/s/ Richard F. Fitzgerald
Richard F. Fitzgerald
Chief Financial Officer
(Principal Accounting and Financial Officer)

CERTIFICATIONS

I, James A. Mish, Chief Executive Officer of 22nd CENTURY GROUP, INC., certify that:

1. I have reviewed this quarterly report on Form 10-Q of 22nd CENTURY GROUP, INC.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(c) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting.
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing equivalent functions):
 - a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: May 5, 2022

/s/ James A. Mish
James A. Mish
Chief Executive Officer
(Principal Executive Officer)

CERTIFICATIONS

I, Richard F. Fitzgerald, Chief Financial Officer of 22nd CENTURY GROUP, INC., certify that:

1. I have reviewed this quarterly report on Form 10-Q of 22nd CENTURY GROUP, INC.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting.
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing equivalent functions):
 - a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: May 5, 2022

/s/ Richard F. Fitzgerald

Richard F. Fitzgerald

Chief Financial Officer

(Principal Accounting and Financial Officer)

Written Statement of the Principal Executive Officer and Chief Financial Officer Pursuant to 18 U.S.C. §1350

Solely for the purposes of complying with 18 U.S.C. §1350, I, the undersigned Chief Executive Officer of 22nd CENTURY GROUP, INC. (the "Company"), and I, the undersigned Chief Financial Officer of the Company, hereby certify, to the best of my knowledge, that the quarterly report on Form 10-Q of the Company for the quarter ended March 31, 2022 (the "Report") fully complies with the requirements of Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 and that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

This certification is being furnished solely to accompany this Report pursuant to 18 U.S.C. 1350, and is not being filed for purposes of Section 18 of the Securities Exchange Act of 1934 and is not to be incorporated by reference into any filing of the registrant, whether made before or after the date hereof, regardless of any general incorporation language in such filing.

Date: May 5, 2022

/s/ James A. Mish

James A. Mish
Chief Executive Officer

Date: May 5, 2022

/s/ Richard F. Fitzgerald

Richard F. Fitzgerald
Chief Financial Officer
