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

FORM 10-Q

(Mark One)

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

For the quarterly period ended March 31, 2009

or

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

For the transition period from _____ to _____

Commission File No. 001-31326

SENECO TECHNOLOGIES, INC.

(exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

84-1368850

(IRS Employer Identification No.)

303 George Street, Suite 420

New Brunswick, New Jersey 08901

(Address of principal executive offices)

(732) 296-8400

(Registrant's telephone number, including area code)

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 past 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 and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted 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 and post such files).

Yes:

No:

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

Large accelerated filer

Accelerated filer

Smaller reporting company

Non-accelerated filer

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 15, 2009, 19,511,199 shares of the issuer's common stock, par value \$0.01 per share, were outstanding.

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PART I. FINANCIAL INFORMATION.

Item 1. Financial Statements.

Certain information and footnote disclosures required under United States generally accepted accounting principles have been condensed or omitted from the following consolidated financial statements pursuant to the rules and regulations of the Securities and Exchange Commission. However, Senesco Technologies, Inc., a Delaware corporation, and its wholly owned subsidiary, Senesco, Inc., a New Jersey corporation (collectively, "Senesco" or the "Company"), believe that the disclosures are adequate to assure that the information presented is not misleading in any material respect.

The results of operations for the interim periods presented herein are not necessarily indicative of the results to be expected for the entire fiscal year.

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SENESCO TECHNOLOGIES, INC. AND SUBSIDIARY
(A DEVELOPMENT STAGE COMPANY)
CONDENSED CONSOLIDATED BALANCE SHEETS

<u>March 31,</u>	<u>June 30,</u>
<u>2009</u>	<u>2008</u>
<u>(unaudited)</u>	

ASSETS

CURRENT ASSETS:		
Cash and cash equivalents	\$ 378,193	\$ 5,676,985
Short-term investments	2,299,388	500,000
Prepaid expenses and other current assets	889,822	180,556
Total Current Assets	3,567,403	6,357,541
Property and equipment, net	6,896	5,459
Intangibles, net	3,625,476	3,213,543
Deferred financing costs	741,462	1,059,230
Security deposit	7,187	7,187
TOTAL ASSETS	\$ 7,948,424	\$ 10,642,960

LIABILITIES AND STOCKHOLDERS' EQUITY

CURRENT LIABILITIES:		
Accounts payable	\$ 472,375	\$ 370,167
Accrued expenses	500,772	314,267
Total Current Liabilities	973,147	684,434
Convertible note, net of discount	1,926	57
Grant payable	99,728	99,728
Other liability	17,778	23,062
TOTAL LIABILITIES	1,092,579	807,281

STOCKHOLDERS' EQUITY:

Preferred stock, \$0.01 par value; authorized 5,000,000 shares, no shares issued	—	—
Common stock, \$0.01 par value; authorized 100,000,000 shares, issued and outstanding 19,511,199 and 18,375,117, respectively	195,112	183,751
Capital in excess of par	41,020,987	39,874,958
Deficit accumulated during the development stage	(34,360,254)	(30,223,030)
TOTAL STOCKHOLDERS' EQUITY	6,855,845	9,835,679
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	\$ 7,948,424	\$ 10,642,960

See Notes to Condensed Consolidated Financial Statements.

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SENESCO TECHNOLOGIES, INC. AND SUBSIDIARY
(A DEVELOPMENT STAGE COMPANY)
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(unaudited)

	For the Three Months Ended March 31, 2009	For the Three Months Ended March 31, 2008	For the Nine Months Ended March 31, 2009	For the Nine Months Ended March 31, 2008	From Inception on July 1, 1998 through March 31, 2009
Revenue	\$ 75,000	\$ 79,167	\$ 275,000	\$ 456,667	\$ 1,450,000
Operating Expenses:					
General and administrative	532,245	876,966	1,711,166	1,851,876	23,436,622
Research and development	540,494	474,176	1,624,166	1,219,325	11,581,761
Total Operating Expenses	1,072,739	1,351,142	3,335,332	3,071,201	35,018,383
Loss From Operations	(997,739)	(1,271,975)	(3,060,332)	(2,614,534)	(33,568,383)
Sale of state income tax loss, net	—	—	—	—	586,442
Other noncash income	—	—	—	—	321,259
Interest income, net	737	43,907	41,788	76,013	522,025
Amortization of debt discount and financing costs	(107,240)	(66,676)	(319,637)	(120,271)	(988,400)
Interest expense on convertible notes	(227,235)	(187,473)	(799,043)	(255,309)	(1,233,197)
Net Loss	\$ (1,331,477)	\$ (1,482,217)	\$ (4,137,224)	\$ (2,914,101)	\$ (34,360,254)
Basic and Diluted Net Loss Per Common Share	\$ (0.07)	\$ (0.08)	\$ (0.22)	\$ (0.17)	
Basic and Diluted Weighted Average Number of Common Shares Outstanding	19,033,091	17,583,461	18,678,109	17,510,410	

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SENECO TECHNOLOGIES, INC. AND SUBSIDIARY
(A DEVELOPMENT STAGE COMPANY)
CONDENSED CONSOLIDATED STATEMENT OF STOCKHOLDERS' EQUITY
FROM INCEPTION ON JULY 1, 1998 THROUGH MARCH 31, 2009
(unaudited)

	Common Stock		Capital in Excess of Par Value	Deficit Accumulated During the Development Stage	Total
	Shares	Amount			
Common stock outstanding	2,000,462	\$ 20,005	\$ (20,005)	—	—
Contribution of capital	—	—	85,179	—	\$ 85,179
Issuance of common stock in reverse merger on January 22, 1999 at \$0.01 per share	3,400,000	34,000	(34,000)	—	—
Issuance of common stock for cash on May 21, 1999 at \$2.63437 per share	759,194	7,592	1,988,390	—	1,995,982
Issuance of common stock for placement fees on May 21, 1999 at \$0.01 per share	53,144	531	(531)	—	—
Issuance of common stock for cash on January 26, 2000 at \$2.867647 per share	17,436	174	49,826	—	50,000
Issuance of common stock for cash on January 31, 2000 at \$2.87875 per share	34,737	347	99,653	—	100,000
Issuance of common stock for cash on February 4, 2000 at \$2.934582 per share	85,191	852	249,148	—	250,000
Issuance of common stock for cash on March 15, 2000 at \$2.527875 per share	51,428	514	129,486	—	130,000
Issuance of common stock for cash on June 22, 2000 at \$1.50 per share	1,471,700	14,718	2,192,833	—	2,207,551
Commissions, legal and bank fees associated with issuances for the year ended June 30, 2000	—	—	(260,595)	—	(260,595)
Fair market value of options and warrants vested during the year ended June 30, 2000	—	—	1,475,927	—	1,475,927

(continued)

See Notes to Condensed Consolidated Financial Statements.

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SENECO TECHNOLOGIES, INC. AND SUBSIDIARY
(A DEVELOPMENT STAGE COMPANY)
CONDENSED CONSOLIDATED STATEMENT OF STOCKHOLDERS' EQUITY
FROM INCEPTION ON JULY 1, 1998 THROUGH MARCH 31, 2009
(unaudited)

	Common Stock		Capital in Excess of Par Value	Deficit Accumulated During the Development Stage	Total
	Shares	Amount			
Fair market value of options and warrants vesting during the year ended June 30, 2001	—	—	\$ 308,619	—	\$ 308,619
Issuance of common stock and warrants for cash from November 30, 2001 through April 17, 2002	3,701,430	\$ 37,014	6,440,486	—	6,477,500

at \$1.75 per unit					
Issuance of common stock and warrants associated with bridge loan conversion on December 3, 2001	305,323	3,053	531,263	—	534,316
Commissions, legal and bank fees associated with issuances for the year ended June 30, 2002	—	—	(846,444)	—	(846,444)
Fair market value of options and warrants vested during the year ended June 30, 2002	—	—	1,848,726	—	1,848,726
Fair market value of options and warrants vested during the year ended June 30, 2003	—	—	848,842	—	848,842
Issuance of common stock and warrants for cash from January 15, 2004 through February 12, 2004 at \$2.37 per unit	1,536,922	15,369	3,627,131	—	3,642,500
Allocation of proceeds to warrants	—	—	(2,099,090)	—	(2,099,090)
Reclassification of warrants	—	—	1,913,463	—	1,913,463
Commissions, legal and bank fees associated with issuances for the year ended June 30, 2004	—	—	(378,624)	—	(378,624)

(continued)

See Notes to Condensed Consolidated Financial Statements.

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SENECO TECHNOLOGIES, INC. AND SUBSIDIARY
(A DEVELOPMENT STAGE COMPANY)
CONDENSED CONSOLIDATED STATEMENT OF STOCKHOLDERS' EQUITY
FROM INCEPTION ON JULY 1, 1998 THROUGH MARCH 31, 2009
(unaudited)

	Common Stock		Capital in Excess of Par Value	Deficit Accumulated During the Development Stage	Total
	Shares	Amount			
Fair market value of options and warrants vested during the year ended June 30, 2004	—	—	\$ 1,826,514	—	\$ 1,826,514
Options and warrants exercised during the year ended June 30, 2004 at exercise prices ranging from \$1.00 - \$3.25	370,283	\$ 3,704	692,945	—	696,649
Issuance of common stock and warrants for cash on May 9, 2005 at \$2.11 per unit	1,595,651	15,957	3,350,872	—	3,366,829
Allocation of proceeds to warrants	—	—	(1,715,347)	—	(1,715,347)
Reclassification of warrants	—	—	1,579,715	—	1,579,715
Commissions, legal and bank fees associated with issuance on May 9, 2005	—	—	(428,863)	—	(428,863)
Options and warrants exercised during the year ended June 30, 2005 at exercise prices ranging from \$1.50 to \$3.25	84,487	844	60,281	—	61,125
Fair market value of options and warrants vested during the year ended June 30, 2005	—	—	974,235	—	974,235
Fair market value of options and Warrants granted and vested During the year ended June 30, 2006	—	—	677,000	—	677,000
Warrants exercised during the year ended June 30, 2006 at an exercise price of \$0.01	10,000	100	—	—	100
Issuance of common stock and warrants for cash on October 11, 2006 at \$1.135 per unit	1,986,306	19,863	2,229,628	—	2,249,491

Commissions, legal and bank fees associated with issuance on October 11, 2006	—	—	\$ (230,483)	—	\$ (230,483)
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See Notes to Condensed Consolidated Financial Statements

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SENESCO TECHNOLOGIES, INC. AND SUBSIDIARY
(A DEVELOPMENT STAGE COMPANY)
CONDENSED CONSOLIDATED STATEMENT OF STOCKHOLDERS' EQUITY
FROM INCEPTION ON JULY 1, 1998 THROUGH MARCH 31, 2009
(unaudited)

	<u>Common Stock</u>		<u>Capital in Excess of Par Value</u>	<u>Deficit Accumulated During the Development Stage</u>	<u>Total</u>
	<u>Shares</u>	<u>Amount</u>			
Fair market value of options and warrants vested during the year ended June 30, 2007	—	—	\$ 970,162	—	\$ 970,162
Warrants exercised during the year ended June 30, 2007 at an exercise price of \$0.01	10,000	\$ 100	—	—	100
Fair market value of options and warrants vested during the year ended June 30, 2008	—	—	1,536,968	—	1,536,968
Allocation of proceeds from issuance of convertible notes and warrants from September 21, 2007 through June 30, 2008	—	—	9,340,000	—	9,340,000
Issuance of common stock in lieu of cash payment for interest during the year ended June 30, 2008	345,867	3,458	430,696	—	434,154
Convertible notes converted into common stock during the year ended June 30, 2008	555,556	5,556	430,952	—	436,508
Fair market value of options and warrants vested during the nine months ended March 31, 2009	—	—	358,347	—	358,347
Cashless exercise of warrants during the nine months ended March 31, 2009 at an exercise price of \$0.74	2,395	24	(24)	—	—
Issuance of common stock in lieu of cash payment for interest during the nine months ended March 31, 2009	1,020,987	10,210	788,833	—	799,043
Issuance of common stock in connection with the Company's short term incentive plan during the nine months ended March 31, 2009	112,700	1,127	(1,127)	—	—
Net loss	—	—	—	\$ (34,360,254)	(34,360,254)
Balance at March 31, 2009	<u>19,511,199</u>	<u>\$ 195,112</u>	<u>\$ 41,020,987</u>	<u>\$ (34,360,254)</u>	<u>\$ 6,855,845</u>

See Notes to Condensed Consolidated Financial Statements.

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SENESCO TECHNOLOGIES, INC. AND SUBSIDIARY
(A DEVELOPMENT STAGE COMPANY)
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(unaudited)

	<u>For the Nine Months Ended March 31,</u>		<u>From Inception on July 1, 1998 through March 31, 2009</u>
	<u>2009</u>	<u>2008</u>	<u>2009</u>
Cash flows from operating activities:			

Net loss	\$	(4,137,224)	\$	(2,914,101)	\$	(34,360,254)
Adjustments to reconcile net loss to net cash used in operating activities:						
Noncash capital contribution		—		—		85,179
Noncash conversion of accrued expenses into equity		—		—		131,250
Noncash income related to change in fair value of warrant liability		—		—		(321,259)
Issuance of common stock and warrants for interest		799,043		255,309		1,242,512
Share-based compensation expense		358,347		708,537		10,054,444
Depreciation and amortization		81,054		67,179		541,742
Amortization of convertible note discount and deferred financing costs		319,637		120,271		988,400
(Increase) decrease in operating assets:						
Accounts receivable		—		—		—
Prepaid expense and other current assets		(709,266)		46,831		(889,822)
Security deposit		—		—		(7,187)
Increase (decrease) in operating liabilities:						
Accounts payable		102,208		59,267		472,375
Accrued expenses		186,505		132,260		500,772
Deferred revenue		—		(16,667)		—
Other liability		(5,284)		(4,601)		17,778
Net cash used in operating activities		(3,004,980)		(1,545,715)		(21,544,070)
Cash flows from investing activities:						
Patent costs		(490,251)		(551,752)		(3,997,051)
Purchase of investments, net		(1,799,388)		(250,000)		(2,299,388)
Purchase of property and equipment		(4,173)		(2,783)		(177,063)
Net cash used in investing activities		(2,293,812)		(804,535)		(6,473,502)
Cash flows from financing activities:						
Proceeds from grant		—		—		99,728
Proceeds from issuance of bridge notes		—		—		525,000
Proceeds from issuance of common stock, net and exercise of options and warrants		—		—		19,082,818
Proceeds from issuance of convertible note and warrants, net		—		6,550,000		9,340,000
Deferred financing costs		—		(558,578)		(651,781)
Net cash provided by financing activities		—		5,991,422		28,395,765
Net (decrease) increase in cash and cash equivalents		(5,298,792)		3,641,172		378,193
Cash and cash equivalents at beginning of period		5,676,985		408,061		—
Cash and cash equivalents at end of period	\$	378,193	\$	4,049,233	\$	378,193
Supplemental disclosure of cash flow information:						
Cash paid during the period for interest	\$	—	\$	—	\$	22,317
Supplemental schedule of noncash financing activity:						
Conversion of convertible notes into common stock, net	\$	—	\$	—	\$	500,000
Conversion of bridge notes into stock	\$	—	\$	—	\$	534,316
Allocation of convertible debt proceeds to warrants and beneficial conversion feature	\$	—	\$	6,550,000	\$	9,340,000
Warrants issued for financing costs	\$	—	\$	277,979	\$	639,645
Issuance of common stock for interest on convertible notes	\$	799,043	\$	255,309	\$	1,242,512

See Notes to Condensed Consolidated Financial Statements.

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SENESCO TECHNOLOGIES, INC. AND SUBSIDIARY
(A DEVELOPMENT STAGE COMPANY)
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(unaudited)

Note 1 - Basis of Presentation:

The financial statements included herein have been prepared by Senesco Technologies, Inc. (the “Company”), without audit, pursuant to the rules and regulations of the Securities and Exchange Commission. Certain information and footnote disclosures normally included in financial statements prepared in accordance with United States generally accepted accounting principles have been condensed or omitted pursuant to such rules and regulations. These unaudited condensed consolidated financial statements should be read in conjunction with the audited consolidated financial statements and notes thereto included in the Company’s Annual Report on Form 10-K for the fiscal year ended June 30, 2008.

In the opinion of the Company’s management, the accompanying unaudited condensed consolidated financial statements contain all adjustments, consisting solely of those which are of a normal recurring nature, necessary to present fairly its financial position as of March 31, 2009, the results of its operations for the three-month and nine-month periods ended March 31, 2009 and 2008, cash flows for the nine-month periods ended March 31, 2009 and 2008, and the results of its operations and cash flows for the period from inception on July 1, 1998 through March 31, 2009.

Interim results are not necessarily indicative of results for the full fiscal year.

Note 2 — Liquidity:

There is substantial doubt about the Company's ability to continue as a going concern due to its limited assets and capital and recurring losses as explained in the following paragraph.

The Company has a limited operating history and limited assets and capital and has incurred losses each year since inception with a deficit accumulated during the development stage from inception on July 1, 1998 through March 31, 2009 of \$34,360,254. The Company has generated minimal revenues by licensing its technology for certain crops to companies willing to share in its development costs. In addition, the Company's technology may not be ready for commercialization for several years. The Company expects to continue to incur losses for the next several years because it anticipates that its expenditures on research and development, and administrative activities will significantly exceed its revenues during that period. The Company cannot predict when, if ever, it will become profitable.

The Company's operations to date have required significant cash expenditures. The Company's future capital requirements will depend on the results of its research and development activities, preclinical and clinical studies, and competitive and technological advances.

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The Company plans to address these matters by raising capital through the placement of debt instruments or equity or both. However, the Company may not be able to obtain adequate funds for its operations when needed or on acceptable terms. If the Company is unable to raise additional funds, it will need to do one or more of the following:

- delay, scale-back or eliminate some or all of its research and product development programs;
- provide a license to third parties to develop and commercialize products or technologies that the Company would otherwise seek to develop and commercialize itself;
- seek strategic alliances or business combinations;
- attempt to sell the Company;
- cease operations; or
- declare bankruptcy.

As of March 31, 2009, the Company had cash and investments in the amount of \$2,677,581, which consisted of money market funds and U.S. treasury bills. The Company estimates that such amount will cover its expenses for approximately the next four months from March 31, 2009. The accompanying financial statements do not include any adjustment from the outcome of this uncertainty.

Note 3 — Intangible Assets:

The Company conducts research and development activities, the cost of which is expensed as incurred, in order to generate patents that can be licensed to third parties in exchange for license fees and royalties. Because the patents are the basis of the Company's future revenue, the patent costs are capitalized. The capitalized patent costs represent the outside legal fees incurred by the Company to submit and undertake all necessary efforts to have such patent applications issued as patents.

The length of time that it takes for an initial patent application to be approved is generally between four to six years. However, due to the unique nature of each patent application, the actual length of time may vary. If a patent application is denied, the associated cost of that application would be written off. However, the Company has not had any patent applications denied as of March 31, 2009. Additionally, should a patent application become impaired during the application process, the Company would write down or write off the associated cost of that patent application.

Issued patents and agricultural patent applications pending are being amortized over a period of 17 years, the expected economic life of the patent.

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The Company assesses the impairment in value of intangible assets whenever events or circumstances indicate that their carrying value may not be recoverable. Factors the Company considers important which could trigger an impairment review include the following:

- significant negative industry trends;
- significant underutilization of the assets;
- significant changes in how the Company uses the assets or its plans for their use; and
- changes in technology and the appearance of competing technology.

If the Company's review determines that the future discounted cash flows related to these assets will not be sufficient to recover their carrying value, the Company will reduce the carrying values of these assets down to its estimate of fair value and continue amortizing them over their remaining useful lives.

To date, the Company has not recorded any impairment of intangible assets.

Note 4 - Loss Per Share:

Net loss per common share is computed by dividing the loss by the weighted-average number of common shares outstanding during the period. Shares to be issued upon the exercise of the outstanding options and warrants aggregating 23,151,963 and 19,955,861 as of March 31, 2009 and 2008, respectively, are not included in the computation of net loss per share, as their effect is anti-dilutive. Additionally, as of March 31, 2009, 10,555,556 shares to be issued upon the conversion of convertible notes at a fixed conversion price of \$0.90 are not included in the computation of diluted net loss per share, as their effect is anti-dilutive.

Note 5 — Share-Based Transactions:

The terms and vesting schedules for share-based awards vary by type of grant and the employment status of the grantee. Generally, the awards vest based upon time-based conditions.

The fair value of each stock option and warrant granted has been determined using the Black-Scholes model. The material factors incorporated in the Black-Scholes model in estimating the value of the options and warrants include the following:

	Three Months Ended March 31,		Nine Months Ended March 31,	
	2009	2008	2009	2008
Estimated life in years	3.5-5.5	4-6	3.5-5.5	4-6
Risk-free interest rate (1)	1.3%—1.8%	1.9% — 4.1%	1.1%-2.1%	1.9%-4.1%
Volatility	100%	100%	100%	100%
Dividend paid	None	None	None	None

(1) Represents the interest rate on a U.S. Treasury security with a maturity date corresponding to that of the option term.

The economic values of the options will depend on the future price of the Company’s common stock, par value \$0.01 (the “Common Stock”), which cannot be forecast with reasonable accuracy.

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A summary of changes in the stock option plan for the nine month period ended March 31, 2009 is as follows:

	Number of Options	Weighted-Average Exercise Price
Outstanding at July 1, 2008	3,715,600	\$ 1.95
Granted	712,920	\$ 0.58
Exercised	—	—
Canceled	—	—
Outstanding at March 31, 2009	4,428,520	\$ 1.73
Exercisable at March 31, 2009	3,545,520	\$ 1.95

A summary of changes to the non-vested stock options for the nine month period ended March 31, 2009 is as follows:

	Weighted-Average	
	Number of Options	Grant-Date Fair Value
Non-vested stock options at July 1, 2008	937,264	\$ 0.77
Granted	712,920	\$ 0.45
Vested	(767,184)	\$ (0.61)
Forfeited	—	—
Non-vested stock options at March 31, 2009	883,000	\$ 0.66

As of March 31, 2009, the aggregate intrinsic value of stock options outstanding was \$8,030, with a weighted-average remaining term of 6.0 years. The aggregate intrinsic value of stock options exercisable at that same date was \$77,550, with a weighted-average remaining term of 5.3 years. As of March 31, 2009, the Company has 6,009,364 shares available for future stock option grants.

As of March 31, 2009, total compensation expense not yet recognized related to stock option grants and restricted stock units amounted to approximately \$123,000, which will be recognized over the next 21 months, and an additional \$640,000 which may be recognized as achievement of certain target goals under the Company’s Long-Term Incentive Program become probable over the next 24 months.

Short-Term Incentive Program

On November 19, 2008, upon recommendation of the Company’s Compensation Committee, the Board adopted a Short-Term Equity Incentive Program for each of Bruce C. Galton, John E. Thompson, Ph.D., Joel Brooks, Richard Dondero and Sascha Fedyszyn. The Programs are intended to ensure the achievement of certain goals of the Company, continuity of the Company’s executive management, and to align the interests of the executive management with those of the shareholders.

Pursuant to and as defined in the Short-Term Equity Incentive Program, each executive would be awarded shares of the Company’s Common Stock, or options to acquire shares of the Company’s Common Stock, if the Company achieves certain target goals relating to research,

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financing, licensing, investor relations and other administrative items during the fiscal year ending June 30, 2009.

The number of eligible shares and options to be awarded to the executive is based upon the following weightings:

1. 25% of eligible shares and options for contributions relating to the Company's Human Health Objectives;
2. 15% of eligible shares and options for contributions relating to the Company's Finance Objectives;
3. 20% of eligible shares and options for contributions relating to the Company's Agricultural Licensing Objectives;
4. 25% of eligible shares and options for contributions relating to the Company's Investor Relations, Intellectual Property and Website Administration; and
5. 15% of the eligible shares and options relating to the Company's Organizational Objectives.

If the target goals are achieved by the Company, the executive officers would be awarded the following number of shares and options for the fiscal year ended June 30, 2009:

	<u>Number of Shares</u>	<u>Number of Options (1)</u>
Bruce C. Galton	66,000	—
John E. Thompson, Ph.D.	—	48,000
Joel Brooks	28,000	—
Richard Dondero	—	80,000
Sascha P. Fedyszyn	42,000	—
Total	<u>136,000</u>	<u>128,000</u>

(1) Such options are exercisable at a strike price of \$0.60, which represents the closing price of the common stock on November 18, 2008.

As of March 31, 2009, the Company has determined that the achievement of the target goals is probable. The total amount of compensation expense in connection with the short-term incentive program in the amount of \$140,480 is being recorded ratably over the seven and one-half month period from November 19, 2008 through June 30, 2009. For the nine months ended March 31, 2009, the Company recorded \$84,288 of such expense.

Long-Term Incentive Program

On December 13, 2007, upon recommendation of the Company's Compensation Committee, the Board adopted a Long-Term Equity Incentive Program for the members of the executive management team. The Long-Term Equity Incentive Program is intended to ensure the achievement of certain goals of the Company, continuity of the Company's executive management, and to align the interests of the executive management with those of the shareholders.

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Pursuant to and as defined in the Long-Term Equity Incentive Program, each executive would be awarded shares of the Company's Common Stock and options to acquire shares of the Company's Common Stock if the Company achieves certain target goals relating to its Multiple Myeloma research project over the next three fiscal years.

The number of eligible shares and options to be awarded to the executives is based upon the following weightings:

1. 20% of the eligible shares upon the execution of a research agreement to conduct a phase I/II clinical trial at a research facility;
2. 20% of the eligible shares upon the filing and acceptance by the FDA of an investigational new drug application; and
3. 60% of the eligible shares upon the successful completion of a FDA approved phase I/II clinical trial .

If the target goals are achieved by the Company, the executive officers would be awarded the following number of shares and options :

	<u>Goal 1</u>	<u>Goal 2</u>	<u>Goal 3</u>
<u>Number of Shares</u>			
Bruce C. Galton	25,000	25,000	75,000
Joel Brooks	10,000	10,000	30,000
Sascha P. Fedyszyn	10,000	10,000	30,000
Total number of shares	<u>45,000</u>	<u>45,000</u>	<u>135,000</u>
<u>Number of Options (1)</u>			
John E. Thompson, Ph.D.	50,000	50,000	150,000
Richard Dondero	60,000	60,000	180,000
Total number of options	<u>110,000</u>	<u>110,000</u>	<u>330,000</u>

(1) Such options are exercisable at a strike price of \$0.99, which represents the closing price of the common stock on December 12, 2007.

As of March 31, 2009, the Company is not able to determine if the achievement of the target goals under the Long-Term Equity Incentive Program are probable and, therefore, has not yet begun to recognize any of the \$640,000 compensation expense that was computed on the date of adoption of the Long-Term Equity Incentive Program. The Company will begin recognizing such compensation expense ratably over the remaining term of the Long-Term Equity Incentive Program at such time that the Company is able to determine that the achievement of the target goals are probable.

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Note 6 — Revenue Recognition:

The Company receives certain nonrefundable upfront fees in exchange for the transfer of its technology to licensees. Upon delivery of the technology, the Company has no further obligations to the licensee with respect to the basic technology transferred and, accordingly, recognizes revenue at that time. The Company may, however, receive additional payments from its licensees in the event such licensees achieve certain development or commercialization milestones in their particular field of use. Other nonrefundable upfront fees and milestone payments, where the milestone payments are a function of time as opposed to achievement of specific achievement-based milestones, are deferred and amortized ratably over the estimated research period of the license.

Note 7 — Convertible Notes and Stockholders Equity:

During the year ended June 30, 2008, the Company issued \$5,000,000 of convertible notes and warrants to YA Global Investments L.P. (“YA Global”) and \$5,000,000 of convertible notes and warrants to Stanford Venture Capital Holdings, Inc. (“Stanford”), for aggregate gross proceeds in the amount of \$10,000,000. The convertible notes convert into the Company’s Common Stock at a fixed price of \$0.90 per share, subject to certain adjustments (the “Fixed Conversion Price”), through August 1, 2009 and December 20, 2009, respectively, at which time the convertible notes may convert into shares of the Company’s Common Stock at the lower of the fixed conversion price or 80% of the lowest daily volume-weighted average price (the “VWAP”) of the common stock during the five trading days prior to the conversion date. The maturity date of each of the convertible notes for YA Global and Stanford is December 30, 2010 and December 31, 2010, respectively.

The convertible notes accrue interest on their outstanding principal balances at an annual rate of 8%. The Company has the option to pay interest in cash or, upon certain conditions, common stock. If the Company pays interest in Common Stock, the stock will be valued at a 10% discount to the average daily VWAP for the five day trading period prior to the interest payment date (the “Interest Shares”).

At the Company’s option, it can redeem a portion of, or all of, the principal owed under the convertible notes by providing the investors with at least 30 business days’ written notice, provided that, at the time of receipt of the notice, either: (A)(i) the VWAP of the Common Stock exceeds 130% of the Fixed Conversion Price for at least 20 of 30 prior trading days, and (ii) there is an effective registration statement for the resale of the Common Stock that will be issued under the redemption or (B) it redeems a portion, or all, of the principal owed at a 20% premium above the principal then outstanding and any accrued interest thereupon. If the Company redeems all or any of the principal outstanding under the convertible notes, it will pay an amount equal to the principal being redeemed plus accrued interest.

If there is an effective registration statement for the resale of the shares underlying the convertible notes or if such shares become Rule 144 eligible, the Company will have the option to force the investors to convert 50% and 100% of its then-outstanding convertible notes if its Common Stock price exceeds 150% and 175% of the Fixed Conversion Price, respectively, for any 20 out of 30 trading days; provided that such forced conversion meets certain conditions (the “Call Option”). If the Company exercises its Call Option prior to the third anniversary of the signing date, it will issue additional warrants to the investor equal to 50% of the number of

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shares underlying the convertible note subject to the forced conversion. These warrants will be exercisable at the fixed conversion price and will have the same maturity as the other warrants issued under the YA Global financing.

The Company’s obligations under the convertible notes are secured by all of its and its subsidiary’s assets and intellectual property, as evidenced by certain security agreements and certain patent security agreements by and between the Company and each of YA Global and Stanford. Pursuant to a subordination agreement, YA Global is the senior secured creditor.

The conversion rate of each convertible note is subject to adjustment for certain events, including dividends, stock splits, combinations and the sale of the Company’s Common Stock or securities convertible into or exercisable for the Company’s Common Stock at a price less than the then applicable conversion or exercise price.

The investors have a right of first refusal on any future funding that involves the issuance of the Company’s capital stock for so long as a portion of the convertible notes are outstanding.

Pursuant to the Registration Rights Agreement, the Company filed an initial registration statement on October 12, 2007 to register 3,333,333 shares of common stock, underlying the convertible notes, issuable to YA Global, and such registration statement became effective on November 1, 2007.

The convertible notes and warrants issued to YA Global are subject to a maximum cap of 30,500,000 on the number of shares of common stock that can be issued upon the conversion of the convertible notes, the exercise of the warrants and the issuance of interest shares.

The convertible notes and warrants issued to Stanford are subject to a maximum cap of 31,888,888 on the number of shares of common stock that can be issued upon the conversion of the convertible notes, the exercise of the warrants and the issuance of interest shares.

Currently, at the fixed conversion price, the number of shares of common stock issuable upon conversion of the remaining \$9,500,000 of convertible notes outstanding and shares of common stock to be issued upon exercise of the warrants outstanding at March 31, 2009 represents, in the aggregate,

24,438,888 shares, plus an estimated additional 2,830,000 shares (based upon the stock price at March 31, 2009) for the payment of interest in stock under the convertible notes.

As of March 31, 2009, the outstanding balance of the convertible notes were \$1,926, which is comprised of notes with an aggregate face amount of \$9,500,000 less unamortized debt discount of \$9,498,074. Debt discount associated with the convertible notes is amortized to interest expense, using the effective yield method, over the remaining life of the convertible notes. Upon conversion of the convertible notes into Common Stock, any unamortized debt discount relating to the portion converted will be charged to interest. Total charges to interest for amortization of debt discount were \$1,450 and \$1,869 for the three month and nine month periods ended March 31, 2009.

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The costs associated with the issuances in the amount of \$1,291,427 have been recorded as deferred financing costs and are being amortized ratably over the term of the convertible notes. The balance of deferred financing costs as of March 31, 2009 amounted to \$741,462.

Note 8 — Income Taxes:

No provision for income taxes has been made in the three month and nine month periods ended March 31, 2009 and 2008 given the Company's losses in 2009 and 2008 and available net operating loss carryforwards. A benefit has not been recorded as the realization of the net operating losses is not assured and the timing in which the Company can utilize its net operating loss carryforwards in any year or in total may be limited by provisions of the Internal Revenue Code regarding changes in ownership of corporations.

Note 9 — Effects of New Accounting Pronouncements Applicable to the Company

EITF Issue No. 07-1 — Accounting for Collaborative Arrangements

This pronouncement defines a collaborative arrangement as a contractual arrangement that involves a joint operating activity that involves two or more parties who are both active participants in the activity and exposed to significant risks and rewards dependent on the commercial success of the activity. The pronouncement also defines how the costs incurred and revenues generated from transactions with third parties should be recorded and presented in each entity's income statement. This pronouncement is effective for financial statements issued for fiscal years beginning after December 15, 2008, and interim periods within those fiscal years, and shall be applied retrospectively to all prior periods presented for all collaborative arrangements existing as of the effective date. The Company does not believe that this pronouncement will have any material effect on its financial statements.

SFAS No. 157 — Fair Value Measurements

In September 2006 the Financial Accounting Standards Board ("FASB") issued Statement of Financial Accounting Standards No. 157, *Fair Value Measurements* (SFAS No. 157). SFAS No. 157 defines fair value, establishes a framework for measuring fair value, and expands disclosures about fair value measurement. SFAS No. 157 also emphasizes that fair value is a market-based measurement, not an entity-specific measurement, and sets out a fair value hierarchy with the highest priority being quoted prices in active markets. Under SFAS No. 157, fair value measurements are disclosed by level within that hierarchy. In February 2008, the FASB issued FASB Staff Position No. 157-2, *Effective Date of FASB Statement No. 157*, which permits a one-year deferral for the implementation of SFAS No. 157 with regard to nonfinancial assets and liabilities that are not recognized or disclosed at fair value in the financial statements on a recurring basis. The Company adopted SFAS No. 157 for the fiscal year beginning July 1, 2008, except for nonfinancial assets and nonfinancial liabilities that are recognized or disclosed at fair value in the financial statements on a nonrecurring basis for which delayed application is permitted until our fiscal year beginning July 1, 2009. The adoption of the remaining provisions of SFAS No. 157 is not expected to have a material impact on the Company's financial position, results of operations or cash flows.

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EITF Issue No. 07-5 — Determining Whether an Instrument (or Embedded Feature) is Indexed to an Entity's Own Stock.

In June 2008, the FASB ratified EITF Issue No. 07-5, "Determining Whether an Instrument (or Embedded Feature) is Indexed to an Entity's Own Stock" ("EITF 07-5"). EITF 07-5 provides guidance on how to determine if certain instruments or embedded features are considered indexed to our own stock, including instruments similar to our convertible notes and warrants to purchase our stock. EITF 07-5 requires companies to use a two-step approach to evaluate an instrument's contingent exercise provisions and settlement provisions in determining whether the instrument is considered to be indexed to its own stock and exempt from the application of SFAS No. 133, "Accounting for Derivative Instruments and Hedging Activities". Although EITF 07-5 is effective for fiscal years beginning after December 15, 2008, any outstanding instrument at the date of adoption will require a retrospective application of the accounting through a cumulative effect adjustment to retained earnings upon adoption. The Company is currently evaluating the impact that adoption of EITF 07-5 will have on its consolidated financial statements.

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

The following discussion and analysis should be read in conjunction with our condensed consolidated financial statements and the related notes thereto included in this Quarterly Report on Form 10-Q. The discussion and analysis may contain forward-looking statements that are based upon current expectations and entail various risks and uncertainties. Our actual results and the timing of events could differ materially from those anticipated in the

forward-looking statements as a result of various factors, including those set forth under “Factors That May Affect Our Business, Future Operating Results and Financial Condition” and elsewhere in this report.

Overview

Our Business

The primary business of Senesco Technologies, Inc., a Delaware corporation incorporated in 1999, and its wholly-owned subsidiary, Senesco, Inc., a New Jersey corporation incorporated in 1998, collectively referred to as “Senesco,” “we,” “us” or “our,” is to utilize our patented and patent-pending genes, primarily eucaryotic translation initiation Factor 5A, or Factor 5A, and deoxyhypusine synthase, or DHS, and related technologies for their inhibition in human health applications to develop novel approaches to treat inflammatory diseases and cancer.

In agricultural applications, we are developing and licensing Factor 5A, DHS and Lipase to enhance the quality and productivity of fruits, flowers, and vegetables and agronomic crops through the control of cell death, referred to herein as senescence, and growth in plants.

Human Health Applications

We believe that our gene technology could have broad applicability in the human health field, by either inhibiting or inducing apoptosis. Inhibiting apoptosis may be useful in preventing or treating a wide range of inflammatory and ischemic diseases attributed to premature apoptosis. Inducing apoptosis may be useful in treating certain forms of cancer because the cancerous cells have failed to initiate apoptosis on their own due to damaged or inhibited apoptotic pathways.

We have commenced preclinical *in-vivo* and *in-vitro* research to determine the ability of Factor 5A to regulate key execution genes, pro-inflammatory cytokines, receptors, and transcription factors, which are implicated in numerous apoptotic diseases.

Certain preclinical human health results to date include:

- Performing efficacy, toxicological and dose-finding studies in mice for our potential multiple myeloma drug candidate, SNS-01. SNS-01 is a nano-encapsulated combination therapy of Factor 5A and an siRNA against Factor 5A. Our efficacy study in severe combined immune-deficient mice with subcutaneous human multiple myeloma tested SNS-01 dosages ranging from 0.15 mg/kg to 1.5 mg/kg. In these studies, mice treated with a dose of either 0.75 mg/kg or 1.5 mg/kg both showed a 91% reduction in tumor volume and a decrease in tumor weight of 87% and 95%, respectively. For mice that

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received smaller doses of either 0.38 mg/kg or 0.15 mg/kg, there was also a reduction in tumor volume (73% and 61%, respectively) and weight (74% and 36%, respectively). All of the treated mice, regardless of dose, survived. This therapeutic dose range provided the basis for an 8-day maximum tolerated dose study in which normal mice received two intravenous doses of increasing amounts of SNS-01 (from 2.2 mg/kg). Body weight, organ weight and serum levels of liver enzymes were used as clinical indices to assess toxicity. A dose between 2.2 mg/kg and 2.9 mg/kg was well tolerated with respect to these clinical indices, and the survival rate at 2.9 mg/kg was 80%. Those mice receiving above 2.9 mg/kg of SNS-01 showed evidence of morbidity and up to 80% mortality. The 2.9 mg/kg threshold, twice the upper end of the therapeutic dose range, was therefore determined to be the maximum tolerated dose in mice.

- demonstrated significant tumor regression and diminished rate of tumor growth of multiple myeloma tumors in SCID mice treated with Factor 5A technology encapsulated in nanoparticles;
- increased median survival by approximately 250% in a tumor model of mice injected with melanoma cancer cells;
- induced apoptosis in both human cancer cell lines derived from tumors and in lung tumors in mice;
- induced apoptosis of cancer cells in a human multiple myeloma cell line;
- measured VEGF reduction in mouse lung tumors as a result of treatment with our genes;
- decreased ICAM and activation of NFκB in cancer cells employing siRNA against Factor 5A;
- increased the survival, while maintaining functionality, of mouse pancreatic islet cells isolated for transplantation, using intraperitoneal administration of our technology. Initial animal studies have shown that our technology administered prior to harvesting beta islet cells from a mouse, has a significant impact not only on the survival of the beta islet cells, but also on the retention of the cells’ functionality when compared to the untreated beta islet cells. Additional studies have shown that the treated beta islet cells survive a pro-inflammatory cytokine challenge, while maintaining their functionality with respect to insulin production. These further studies also revealed Factor-5A’s involvement in the modulation of inducible nitric oxide synthase (iNOS), an important indicator of inflammation; and
- increased the survival rate of mice in a lethal challenge sepsis model. Additionally, a broad spectrum of systemic pro-inflammatory cytokines were down-regulated, while not effecting the anti-inflammatory cytokine IL-10.

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[Accelerating Apoptosis](#)

The data from our pre-clinical studies indicate that the up-regulation of Factor 5A induces cell death in cancer cells through both the p53 (intrinsic) and cell death receptor (extrinsic) apoptotic pathways. Tumors arise when abnormal cells fail to undergo apoptosis due to an inability to activate their apoptotic pathways. Just as the Factor 5A gene appears to facilitate expression of the entire suite of genes required for programmed cell death in plants, the Factor 5A gene appears to regulate expression of a suite of genes required for programmed cell death in human cells. Because the Factor 5A gene appears to function at the initiation point of the apoptotic pathways, both intrinsic and extrinsic, we believe that our gene technology has potential application as a means of combating a broad range of cancers. Based on the results obtained through our *in-vitro* studies, we have found that up-regulating Factor 5A results in: (i) the up-regulation of p53; (ii) increased inflammatory cytokine production; (iii) increased cell death receptor formation; and (iv) increased caspase activity. These features, coupled with a simultaneous down-regulation Bcl-2, result in apoptosis of cancer cells. In addition, our *in-vitro* studies have shown that the up-regulation of Factor 5A also down-regulates VEGF, a growth factor which allows tumors to develop additional vascularization needed for growth beyond a small mass of cells.

Inhibiting Apoptosis

Our preclinical studies indicate that down-regulation of our proprietary Factor 5A gene may have potential application as a means for controlling the effects of a broad range of diseases that are attributable to premature cell death, ischemia, or inflammation. Such inflammatory diseases include glaucoma, heart disease, and other certain inflammatory diseases such as Crohn's disease, sepsis and diabetic retinopathy. We are engaged in preclinical research of certain inflammatory diseases. Using small inhibitory RNA's, or siRNA's, against Factor 5A to inhibit its expression, the results of our studies have indicated a reduction in pro-inflammatory cytokine formation and the formation of receptors for LPS, interferon-gamma and TNF-alpha. Our studies have also indicated that by inhibiting Factor 5A, iNOS, MAPK, NFkB, JAK1 and ICAM are downregulated, which decreases the inflammatory cytokines formed through these pathways. Additionally, a mouse study has indicated that our siRNA is comparable to a steroid and to a prescription anti-TNF drug in its ability to reduce cytokine response to LPS. Other mouse studies have also indicated that the siRNA against Factor 5A (i) protects thymocyte cells from apoptosis and decreases formation of MPO, TNF-a, MIP-1alpha, and IL-1 in the lungs of mice challenged with LPS and (ii) increases the survival rate in which sepsis was induced by a lethal injection of LPS and (iii) reduces blood serum levels of inflammatory proteins, such as IL-1, IL-2, IL-6, IL-12, TNF-a, IFNg and MIP-1alpha, while not effecting IL-10, an anti-inflammatory cytokine. Other experiments utilizing siRNA to Factor 5A include inhibition of or apoptosis during the processing of mouse pancreatic beta islet cells for transplantation, the inhibition of early inflammatory changes associated with type-1 diabetes in an in-vivo rat model.

Proteins required for cell death include p53, interleukins, TNF-a and other cytokines and caspases. Expression of these cell death proteins is required for the execution of apoptosis. Based on our studies, we believe that down-regulating Factor 5A by treatment with siRNA inhibits the expression of p53, a major cell death transcription factor that in turn controls the formation of a suite of other cell death proteins. In addition, we believe that the down-regulation of Factor 5A up-regulates Bcl-2, a suppressor of apoptosis.

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Human Health Target Markets

We believe that our gene technology may have broad applicability in the human health field, by either inhibiting or accelerating apoptosis. Inhibiting apoptosis may be useful in preventing or treating a wide range of inflammatory and ischemic diseases attributed to premature apoptosis, including diabetes, diabetic retinopathy and lung inflammation, among others. Accelerating apoptosis may be useful in treating certain forms of cancer because the body's immune system is not able to force cancerous cells to undergo apoptosis.

Our preclinical research has yielded data that we have presented to various biopharmaceutical companies that may be prospective licensees for the development and marketing of potential applications of our technology. Additionally, we are using the proceeds of our most recent financing to advance our research in multiple myeloma with the goal of initiating a Phase I clinical trial, and may select additional human health indications to bring into clinical trials. We believe that the success of our future operations will likely depend on our ability to transform our research and development activities into a commercially feasible technology.

Human Health Research Program

Our human health research program, which has consisted of pre-clinical *in-vitro* and *in-vivo* experiments designed to assess the role and method of action of the Factor 5A genes in human diseases, is being performed by approximately twelve (12) third party researchers, at our direction, at Mayo Clinic, the University of Virginia and the University of Waterloo.

Our research and development expenses incurred on human health applications were approximately 72% of our total research and development expenses for the nine months ended March 31, 2009. Our research and development expenses incurred on human health applications were approximately 53% of our total research and development expenses for the nine months ended March 31, 2008. Since inception, the proportion of our research and development expenses on human health applications has increased, as compared to our research and development expenses on agricultural applications. This change is primarily due to the fact that our research focus on human health has increased and some of our research costs for plant applications have shifted to our license partners.

Our planned future pre-clinical research and development initiatives for human health include:

- Multiple Myeloma. Our objective is to advance our technology for the potential treatment of multiple myeloma with the goal of initiating a clinical trial. In connection with the potential clinical trial, we have engaged a clinical research organization, or CRO, to assist us through the process. We have also determined the delivery system for our technology, contracted for the supply of pharmaceutical grade materials to be used in toxicology and human studies, performed certain toxicity studies, and have contracted with a third party laboratory to conduct additional toxicology studies. Together with the assistance of our CRO, we will have additional toxicology studies performed with the goal of filing an investigational new drug application, or IND application, with the U.S. Food and Drug Administration, or FDA, for their review and consideration in order to

initiate a clinical trial. Assuming that we have adequate funding, we estimate that it will take less than nine (9) months from March 31, 2009 to complete these objectives.

- Lung Inflammation. The objective of our planned future lung inflammation experiments is to optimize the delivery and dose of the siRNA to Factor 5A to the lungs. A mouse model system is currently being conducted to illustrate the siRNA to Factor 5A's ability to reduce morbidity and mortality of lung inflammation caused by the up-regulation of pro-inflammatory cytokines induced by a pathogen.
- Other. We may continue to look at other disease states in order to determine the role of Factor 5A.

In order to pursue the above research initiatives, as well as other research initiatives that may arise, we completed private placements of \$10 million of convertible notes and warrants in fiscal 2008. It will be necessary for us to raise a significant amount of additional working capital in the near future to continue to pursue some of the above initiatives as well as new initiatives. If we are unable to raise the necessary funds, we may be required to significantly curtail the future development of some of our research initiatives and we will be unable to pursue other possible research initiatives.

We may further expand our research and development program beyond the initiatives listed above to include other research centers.

Human Health Competition

Our competitors in human health that are presently attempting to distribute their technology have generally utilized one of the following distribution channels:

- Entering into strategic alliances, including licensing technology to major marketing and distribution partners; or
- developing in-house production and marketing capabilities.

In addition, some competitors are established distribution companies, which alleviates the need for strategic alliances, while others are attempting to create their own distribution and marketing channels.

There are many large companies and development stage companies working in the field of apoptosis research including: Amgen Inc., Centocor, Inc., Genzyme Corporation, OSI Pharmaceuticals, Inc., Novartis AG, Introgen Therapeutics, Inc., Genta, Inc., and Vertex Pharmaceuticals, Inc., amongst others.

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Agricultural Applications

Our agricultural research focuses on the discovery and development of certain gene technologies, which are designed to confer positive traits on fruits, flowers, vegetables, forestry species and agronomic crops. To date, we have isolated and characterized the senescence-induced Lipase gene, DHS, and Factor 5A in certain species of plants. Our goal is to modulate the expression of these genes in order to achieve such traits as extended shelf life, increased biomass, increased yield and increased resistance to environmental stresses and disease, thereby demonstrating proof of concept in each category of crop.

Certain agricultural results to date include:

- longer shelf life of perishable produce;
- increased biomass and seed yield;
- greater tolerance to environmental stresses, such as drought and soil salinity;
- greater tolerance to certain fungal and bacterial pathogens;
- more efficient use of fertilizer; and
- advancement to field trials in banana and trees.

The technology presently utilized by the industry for increasing the shelf life in certain flowers, fruits and vegetables relies primarily on reducing ethylene biosynthesis, and therefore only has application to the crops that are ethylene-sensitive. Because Factor 5A, DHS and Lipase are already present in all plant cells, our technology may be incorporated into crops by using either conventional breeding methods (non-genetically modified) or biotechnology techniques.

We have licensed this technology to various strategic partners and have entered into a joint venture. We may continue to license this technology, as the opportunities present themselves, to additional strategic partners and/or enter into additional joint ventures. Our commercial partners have licensed our technology for use in turfgrass, canola, corn, soybean, cotton, banana, alfalfa, rice and certain species of trees and bedding plants, and we have obtained proof of concept for enhanced post harvest shelf life, seed yield, biomass, and resistance to disease in several of these plant species.

We have ongoing field trials of certain trees and bananas with our respective partners. The initial field trials conducted with ArborGen over a three year period in certain species of trees have concluded and the trees have been harvested for wood quality assessment. Preliminary data from our joint field trials show significantly enhanced growth rates in some of the trees relative to controls. Additional field trials for enhanced growth rates and other traits are currently being performed with ArborGen.

To date, banana field trials have indicated that our technology extends the shelf life of banana fruit by 100%. In addition to the post-harvest shelf life benefits, an additional field trial generated encouraging disease tolerance data specific to Black Sigatoka (Black Leaf Streak Disease) for banana plants. Additional field trials for banana plants are ongoing for the combined traits of disease tolerance and shelf life extension.

Commercialization by our partners may require a combination of traits in a crop, such as both post harvest shelf life and disease resistance, or other traits. Our near-term research and development initiatives include modulating the expression of DHS and Factor 5A genes in these plants and then propagation and phenotype testing of such plants.

Our ongoing research and development initiatives for agriculture include assisting our license and joint venture partners to:

- further develop and implement the DHS and Factor 5A gene technology in banana, canola, cotton, turfgrass, bedding plants, rice, alfalfa, corn, soybean and trees; and
- test the resultant crops for new beneficial traits such as increased yield, increased tolerance to environmental stress, disease resistance and more efficient use of fertilizer.

Agricultural Target Markets

In order to address the complexities associated with marketing and distribution in the worldwide market, we have adopted a multi-faceted commercialization strategy in which we have entered into and plan to enter into, as the opportunities present themselves, additional licensing agreements or other strategic relationships with a variety of companies or other entities on a crop-by-crop basis. We anticipate revenues from these relationships in the form of licensing fees, royalties, usage fees, or the sharing of gross profits. In addition, we anticipate payments from certain of our partners, which are described in the *Agricultural Development and License Agreements* section of this Form 10-Q, upon our achievement of certain research and development benchmarks. This commercialization strategy allows us to generate revenue at various stages of product development, while ensuring that our technology is incorporated into a wide variety of crops. Our optimal partners combine the technological expertise to incorporate our technology into their product line along with the ability to successfully market the enhanced final product, thereby eliminating the need for us to develop and maintain a sales force.

Because the agricultural market is dominated by privately held companies or subsidiaries of foreign-owned companies, market size and market share data for the crops under our license and development agreements is not readily available. Additionally, because we have entered into confidentiality agreements with our license and development partners, we are unable to report the specific financial terms of the agreements as well as any market size and market share data that our partners may have disclosed to us regarding their companies.

Agricultural Development and License Agreements

Through April 15, 2009, we have eight (8) active license agreements and one joint collaboration with established agricultural biotechnology companies or, in the case of Poet, as more fully described below, an established ethanol company, as follows:

- In June 2002, we entered into a three-year worldwide exclusive development and option agreement with ArborGen, LLC to develop our technology in certain species of trees. In June 2006, ArborGen exercised their option to license our technology and in December 2006, converted the development and option agreement into a license agreement, referred to herein as the ArborGen Agreement. To date, the research being conducted by ArborGen has proceeded according to schedule. ArborGen has seen promising positive growth responses in greenhouse-grown seedlings. These initial greenhouse data led to the initiation of field trials by ArborGen in the second half of calendar year 2004. At the end of the 2005 growing season, certain trees which were enhanced by our technology had approximately double the increase in volume relative to control trees. Further field trials are ongoing to support these data and to analyze the growth rates of trees which incorporate our technology. Under the ArborGen Agreement, we have received an upfront payment and benchmark payments and we may receive additional benchmark payments upon achievement of certain development milestones and royalties upon commercialization.
- In September 2002, we entered into an exclusive development and license agreement with Cal/West Seeds, referred to herein as the Cal/West License, to commercialize our technology in certain varieties of alfalfa. The Cal/West License will continue until the expiration of the patents set forth in the agreement, unless terminated earlier by either party pursuant to the terms of the agreement. The Cal/West License also grants Cal/West an exclusive option to develop our technology in various other forage crops. The Cal/West Seeds development effort successfully incorporated our technology into their alfalfa seed as of July 2004. Seed transformation and greenhouse trait analysis is ongoing. Under the Cal/West License, we have received an upfront payment and we may receive benchmark payments as certain development milestones are achieved and a royalty upon commercialization based upon the volume of alfalfa seed sold that contains our technology.
- In March 2004, we entered into an exclusive development and license agreement with The Scotts Company, referred to herein as the Scotts Agreement, to commercialize our technology in turfgrass and certain species of bedding plants. Scotts is working on incorporating our technology to enhance a variety of traits in these plants, including environmental stress resistance, disease resistance and enhanced bloom properties. We are collaborating with Scotts in the areas of ornamental bedding plants and turfgrass. A large-scale greenhouse evaluation of bedding plants was being conducted and additional greenhouse testing is planned. Transformation and initial tissue culture screening of events have been undertaken in turfgrass. In tissue culture, turfgrass containing our technology has grown more successfully than control turfgrass without our technology. Greenhouse testing of the grass containing our technology is the next planned development step. Under the Scotts Agreement, we have received an upfront payment

and benchmark payments. In January 2006, the development and license agreement with Scotts was amended. Due to a change in the corporate financial policy at Scotts, Scotts requested that we defer certain milestone payments, which were to be made on a calendar year basis. We agreed and these payments have now been deferred and incorporated in the amount to be paid to us upon commercialization. Additionally, the commercialization fee has been increased. All other aspects of the agreement remain unchanged, and the project continues to move forward without interruption. We may also receive royalties upon commercialization from the net sales of turfgrass seed and bedding plants containing our technology.

- In October 2005, we entered into an agreement with Poet to license our proprietary gene technology to Poet to improve aspects of Poet's ethanol production capabilities. We are currently revising our work plan to incorporate our technology into those aspects of Poet's ethanol production. We will receive an annual payment for each Poet facility that incorporates our technology. If Poet incorporates our technology into each of its facilities, we would be entitled to receive an annual payment in excess of \$1,000,000.
- On November 8, 2006, we entered into a license agreement with Bayer CropScience GmbH for the development and commercialization of canola. Under the terms of the agreement, we received an upfront payment, will receive milestone payments upon the achievement of certain development milestones and will receive commercialization fees based upon specified benchmarks. In August, 2008, Bayer CropScience GmbH successfully completed the first development milestone related to this license.
- On July 17, 2007, we entered into a license agreement with Bayer CropScience AG for the development and commercialization of cotton. Under the terms of the agreement, we received an upfront payment, will receive milestone payments upon the achievement of certain development milestones, and additionally, upon commercialization, a royalty on net sales.
- On August 6, 2007, we entered into a license agreement with Monsanto for the development and commercialization of corn and soy. Under the terms of the agreement, we received an upfront payment, will receive milestone payments upon the achievement of certain development milestones, and additionally, upon commercialization, a royalty on net sales.
- On September 11, 2007, we entered into a license agreement with Bayer CropScience AG for the development and commercialization of rice. Under the terms of the agreement, we received an upfront payment, will receive milestone payments upon the achievement of certain development milestones, and additionally, upon commercialization, a royalty on net sales.

In December 2008, the Development and License Agreement with the Harris Moran Seed Company, or Harris Moran, was terminated by mutual agreement due to Harris Moran's recently announced corporate restructuring. Harris Moran has reported that its parent company, Limagrain, restructured its vegetable seed operations and that Harris Moran will now be part of a new business unit with Clause (France) and Marco Polo (Thailand). This restructuring has resulted in a consolidation of research and development efforts amongst Harris Moran and its

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sister companies that will not encompass our technology. Harris Moran made us aware of this shift in research and development focus and presented us with a letter on December 1, 2008 formally ending the relationship through the mutual agreement of the parties. Pursuant to the terms of the Development and License Agreement all rights to use our technology in lettuce and melon revert to us.

Joint Venture

On May 14, 1999, we entered into an agreement with Rahan Meristem Ltd., or Rahan Meristem, an Israeli company engaged in the worldwide export marketing of banana germplasm, referred to herein as the Rahan Joint Venture. In general, bananas are grown either for local domestic consumption or grown for export. According to the Food and Agriculture Organization of the United Nations, there were approximately 16 million metric tons of bananas exported in 2004. The level of production equates to the fruit of approximately 480 million banana plants. A percentage of these plants are replaced each year with new banana seedlings. Rahan Meristem accounts for approximately 10% of the worldwide export of enhanced banana seedlings.

We have contributed, by way of a limited, exclusive, worldwide license to the Rahan Joint Venture, access to our technology, discoveries, inventions and know-how, whether patentable or otherwise, pertaining to plant genes and their cognate expressed proteins that are induced during senescence for the purpose of developing, on a joint basis, genetically enhanced banana plants which will result in a banana that has a longer shelf life. Rahan Meristem has contributed its technology, inventions and know-how with respect to banana plants. Rahan Meristem and Senesco have equally shared the expense of field trials.

All aspects of the Rahan Joint Venture's research and development initiative are proceeding on time. Both the DHS and lipase genes have been identified and isolated in banana, and the Rahan Joint Venture is currently in the process of silencing these genes. Two Israeli field trials indicated that Senesco's proprietary technology extends the shelf life of the banana fruit up to 100%, while allowing the banana fruit to ripen normally. Later field trials have indicated what we believe are increased disease tolerance results and we are currently performing additional field trials to further assess disease tolerance. However, as the banana modified with our technology may be considered a genetically modified organism, or GMO, shelf life extension may have to be combined with disease tolerance to gain acceptance by the growers.

Agricultural Research Program

Our agricultural research and development is performed by three (3) researchers, at our direction, at the University of Waterloo, where the technology was developed. Additional agricultural research and development is performed by our partners in connection with the Scotts Agreement, the ArborGen License, the Cal/West License, the Bayer Licenses, the Monsanto License and through the Rahan Joint Venture.

The discoverer of our technology, John E. Thompson, Ph.D., is the Associate Vice President, Research and former Dean of Science at the University of Waterloo in Ontario, Canada, and is our Executive Vice President and Chief Scientific Officer. Dr. Thompson is also one of our directors and beneficially owns approximately 4.3% of the outstanding shares of our

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common stock as of March 31, 2009. On September 1, 1998, we entered into, and have extended through August 31, 2009, a research and development agreement with the University of Waterloo and Dr. Thompson as the principal inventor. The Research and Development Agreement provides that the University of Waterloo will perform research and development under our direction, and we will pay for the cost of this work and make certain payments to the University of Waterloo. In return for payments made under the Research and Development Agreement, we have all rights to the intellectual property derived from the research.

Agricultural Competition

Our competitors in both human health and agriculture that are presently attempting to distribute their technology have generally utilized one or more of the following distribution channels:

- licensing technology to major marketing and distribution partners;
- entering into strategic alliances; or
- developing in-house production and marketing capabilities.

In addition, some competitors are established distribution companies, which alleviates the need for strategic alliances, while others are attempting to create their own distribution and marketing channels.

Our competitors in the field of delaying plant senescence are companies that develop and produce transformed plants with a variety of enhanced traits. Such companies include: Mendel Biotechnology, Inc.; Renessen LLC; Exelixis Plant Sciences, Inc.; Syngenta International AG; and Eden Bioscience Corporation, among others.

Agricultural Development Program

Generally, projects with our licensees and joint venture partner begin by transforming seed or germplasm to incorporate our technology. Those seeds or germplasm are then grown in our partners' greenhouses. After successful greenhouse trials, our partners will transfer the plants to the field for field trials. After completion of successful field trials, our partners may have to apply for and receive regulatory approval prior to initiation of any commercialization activities.

Generally, the approximate time to complete each sequential development step is as follows:

Seed Transformation	approximately 1 to 2 years
Greenhouse	approximately 1 to 2 years
Field Trials	approximately 2 to 5 years

The actual amount of time spent on each development phase depends on the crop, its growth cycle and the success of the transformation achieving the desired results. As such, the amount of time for each phase of development could vary, or the time frames may change.

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The development of our technology with Poet is different than our other licenses in that we are modifying certain production inputs for ethanol. That process involves modifying the inputs, testing such inputs in Poet's production process and if successful, implementing such inputs in Poet's production process on a plant by plant basis.

The status of each of our projects with our partners is as follows:

Project	Partner	Status
Banana	Rahan Meristem	
- Shelf Life		Field trials
- Disease Resistance		Field trials
Trees	Arborgen	
- Growth		Field trials
Alfalfa	Cal/West	Greenhouse
Corn	Monsanto	Proof of concept ongoing
Cotton	Bayer	Proof of concept ongoing
Canola	Bayer	Seed transformation
Rice	Bayer	Proof of concept ongoing
Soybean	Monsanto	Proof of concept ongoing
Turfgrass	The Scotts Company	Greenhouse
Bedding Plants	The Scotts Company	Greenhouse
Ethanol	Poet	Modify inputs

Commercialization by our partners may require a combination of traits in a crop, such as both shelf life and disease resistance, or other traits.

Based upon our commercialization strategy, we anticipate that there may be a significant period of time before plants enhanced using our technology reach consumers. Thus, we have not begun to actively market our technology directly to consumers, rather, we have sought to establish ourselves within the industry through presentations at industry conferences, our website and direct communication with prospective licensees.

Consistent with our commercialization strategy, we intend to attract other companies interested in strategic partnerships or licensing our technology, which may result in additional license fees, revenues from contract research and other related revenues. Successful future operations will depend on our ability to transform our research and development activities into a commercially feasible technology.

Intellectual Property

We have nineteen (19) issued patents from the United States Patent and Trademark Office, or PTO, and twenty-six (26) issued patents from foreign countries, thirty-three (33) of which are for the use of our technology in agricultural applications and twelve (12) of which relate to human health applications.

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In addition to our forty-five (45) patents, we have a wide variety of patent applications, including divisional applications and continuations-in-part, in process with the PTO and internationally. We intend to continue our strategy of enhancing these new patent applications through the addition of data as it is collected.

Government Regulation

At present, the U.S. federal government regulation of biotechnology is divided among three agencies: (i) the U.S. Department of Agriculture regulates the import, field-testing and interstate movement of specific types of genetic engineering that may be used in the creation of transformed plants; (ii) the Environmental Protection Agency regulates activity related to the invention of plant pesticides and herbicides, which may include certain kinds of transformed plants; and (iii) the FDA regulates foods derived from new plant varieties. The FDA requires that transformed plants meet the same standards for safety that are required for all other plants and foods in general. Except in the case of additives that significantly alter a food's structure, the FDA does not require any additional standards or specific approval for genetically engineered foods but expects transformed plant developers to consult the FDA before introducing a new food into the market place.

In addition, our ongoing preclinical research with cell lines and lab animal models of human disease is not currently subject to the FDA requirements that govern clinical trials. However, use of our technology, if developed for human health applications, will also be subject to FDA regulation. Generally, the FDA must approve any drug or biologic product before it can be marketed in the United States. In addition, prior to being sold outside of the U.S., any products resulting from the application of our human health technology must be approved by the regulatory agencies of foreign governments. Prior to filing a new drug application or biologics license application with the FDA, we would have to perform extensive clinical trials, and prior to beginning any clinical trial, we need to perform extensive preclinical testing which could take several years and may require substantial expenditures.

We believe that our current activities, which to date have been confined to research and development efforts, do not require licensing or approval by any governmental regulatory agency. However, we, or our licensees, will be required to obtain such licensing or approval from governmental regulatory agencies prior to the commercialization of our genetically transformed plants and the application of our human health technology.

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Liquidity and Capital Resources

Overview

As of March 31, 2009, our cash balance and investments, which consisted of money market funds and U.S. treasury bills, totaled \$2,677,581, and we had working capital of \$2,594,256. As of March 31, 2009, we had a federal tax loss carryforward of approximately \$24,420,000 and a state tax loss carryforward of approximately \$17,057,000 to offset future taxable income. We cannot assure you that we will be able to take advantage of any or all of such tax loss carryforwards, if at all, in future fiscal years.

Contractual Obligations

The following table lists our cash contractual obligations as of March 31, 2009:

Contractual Obligations	Payments Due by Period				
	Total	Less than 1 year	1 - 3 years	4 - 5 years	More than 5 years
Research and Development Agreements (1)	\$ 1,896,813	\$ 1,896,813	\$ —	\$ —	\$ —
Facility, Rent and Operating Leases (2)	\$ 172,672	\$ 79,192	\$ 93,480	\$ —	\$ —
Employment, Consulting and Scientific Advisory Board Agreements (3)	\$ 651,442	\$ 568,800	\$ 82,642	\$ —	\$ —
Total Contractual Cash Obligations	\$ 2,720,927	\$ 2,544,805	\$ 176,122	\$ —	\$ —

- (1) Certain of our research and development agreements disclosed herein provide that payment is to be made in Canadian dollars and, therefore, the contractual obligations are subject to fluctuations in the exchange rate.
- (2) The lease for our office space in New Brunswick, New Jersey is subject to certain escalations for our proportionate share of increases in the building's operating costs.
- (3) Certain of our employment and consulting agreements provide for automatic renewal, which is not reflected in the table, unless terminated earlier by the parties to the respective agreements.

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We expect our capital requirements to increase significantly over the next several years as we commence new research and development efforts. Our future liquidity and capital funding requirements will depend on numerous factors, including, but not limited to, the levels and costs of our research and development initiatives and the cost and timing of the expansion of our business development and administrative staff.

Effective September 1, 2008, we extended our Research and Development Agreement with the University of Waterloo for an additional one-year period through August 31, 2009, in the amount of CAD \$735,000 or approximately USD \$700,000. Research and development expenses under this agreement aggregated USD \$139,740 and USD \$180,000 for the three month periods ended March 31, 2009 and 2008 and USD \$489,258 and \$548,792 for the nine month periods ended March 31, 2009 and 2008 and USD \$5,116,522 for the cumulative period from inception through March 31, 2009.

During the nine months ended March 31, 2009, we made significant payments for services to be performed and for the manufacture of materials in connection with our toxicology studies and clinical trial totaling approximately \$850,000, of which \$828,000 have been included as prepaid expenses on our Balance Sheet as of March 31, 2009.

Capital Resources

Since inception, we have generated revenues of \$1,450,000 in connection with the initial fees and milestone payments received under our license and development agreements. We have not been profitable since inception, we will continue to incur additional operating losses in the future, and we will require additional financing to continue the development and subsequent commercialization of our technology. While we do not expect to generate significant revenues from the licensing of our technology for the next one to three years, or longer, we may enter into additional licensing or other agreements with marketing and distribution partners that may result in additional license fees, receive revenues from contract research, or other related revenue.

We anticipate that, based upon our current cash and investments, as of March 31, 2009 we will be able to fund our operations for the next four (4) months. Over the next twelve months, we plan to fund our research and development and commercialization activities by:

- utilizing our current cash balance and investments;
- achieving some of the milestones set forth in our current licensing agreements;
- through the possible execution of additional licensing agreements for our technology; and
- through the placement of equity or debt instruments.

We cannot assure you that we will be able to raise money through any of the foregoing transactions, or on favorable terms, if at all.

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Changes to Critical Accounting Policies and Estimates

We adopted Financial Accounting Standards Board ("FASB") Statement of Financial Accounting Standards No. 157, *Fair Value Measurements* (SFAS No. 157) for the fiscal year beginning July 1, 2008, except for nonfinancial assets and nonfinancial liabilities that are recognized or disclosed at fair value in the financial statements on a nonrecurring basis for which delayed application is permitted until our fiscal year beginning July 1, 2009. The adoption of the remaining provisions of SFAS No. 157 did not have a material impact on the Company's financial position, results of operations or cash flows.

Except for the adoption of SFAS No. 157, there have been no changes to our critical accounting policies and estimates as set forth in our Annual Report on Form 10-K for the fiscal year ended June 30, 2008.

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Results of Operations

Three Months Ended March 31, 2009 and Three Months Ended March 31, 2008

The net loss for the three month period ended March 31, 2009 was \$1,331,477. The net loss for the three month period ended March 31, 2008 was \$1,482,217. Such a change represents a decrease in net loss of \$150,740, or 10.2%. This decrease in net loss was primarily the result of a decrease in operating expenses, which was partially offset by an increase in non-cash expenses associated with the outstanding convertible notes that were issued during the year ended June 30, 2008.

Revenue

Total revenues of \$75,000 for the three month period ended March 31, 2009 consisted of a milestone payment on an agricultural license agreement. Total revenues of \$79,167 for the three month period ended March 31, 2008 consisted of a milestone payment and the amortized portion of previous milestone payments received in connection with certain agricultural license agreements.

We anticipate that we will continue to receive milestone payments in connection with our current agricultural development and license agreements while we continue to pursue our goal of attracting other companies to license our technologies in various other crops. Additionally, we anticipate that we will receive royalty payments from our license agreements when our partners commercialize their crops containing our technology. However, it is difficult for us to determine our future revenue expectations because we are a development stage biotechnology company. As such, the timing and outcome of our experiments, the timing of signing new partners and the timing of our partners moving through the development process into commercialization is difficult to accurately predict.

Operating Expenses

	Three Months Ended March 31,			
	2009	2008	Change	%
(in thousands, except % values)				
General and administrative	\$ 532	\$ 877	\$ (345)	(39.3)%
Research and development	541	474	67	14.1%
Total operating expenses	\$ 1,073	\$ 1,351	\$ (278)	(20.6)%

We expect operating expenses to increase over the next twelve months as we anticipate that research and development expenses will increase as we continue to expand our research and development activities.

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General and Administrative Expenses

	Three Months Ended March 31,			
	2009	2008	Change	%
(in thousands, except % values)				
Share-based compensation	\$ 120	\$ 505	\$ (385)	(76.2)%
Payroll and benefits	177	176	1	0.6%
Investor relations	45	46	(1)	(2.2)%
Professional fees	74	76	(2)	(2.6)%
Depreciation and amortization	27	23	4	17.4%
Director fees	14	—	14	—
Other general and administrative	75	51	24	47.1%
Total general and administrative	\$ 532	\$ 877	\$ (345)	(39.3)%

- Share-based compensation for the three months ended March 31, 2009 and 2008 consisted of the amortized portion of the compensation charge in connection with our short-term stock incentive plan and the amortized portion of the Black-Scholes value of options and warrants granted to directors, employees and consultants. Share-based compensation for the three months ended March 31, 2008 also consisted of the Black-Scholes value of \$384,000 for warrants extended and repriced in connection with an amendment to a financial advisory agreement entered into on February 14, 2008. During the three month periods ended March 31, 2009 and 2008, there were 127,836 and 0 options granted to our directors in lieu of cash compensation under our non-employee director compensation plan.
- Depreciation and amortization increased primarily as a result of additional agricultural and human health patent costs being amortized.
- Director fees increased due to the Company implementing a cash compensation plan for non-employee directors beginning July 1, 2008. During the three month period ended March 31, 2008, the non-employee directors did not receive any cash compensation.

We expect general and administrative expenses to modestly increase over the next twelve months primarily due to an increase in payroll and benefits and legal and accounting fees related to the increased regulatory environment surrounding our business.

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Research and Development Expenses

	Three Months Ended March 31,			
	2009	2008	Change	%
(in thousands, except % values)				
Share-based compensation	\$ 23	\$ 57	\$ (34)	(59.7)%
Other research and development	518	417	101	24.2%
Total research and development	\$ 541	\$ 474	\$ 67	14.1%

- Share-based compensation consists primarily of the amortized portion of Black-Scholes value of options, restricted stock units and warrants granted to research and development consultants and employees.
- Other research and development costs increased primarily as a result of an expansion of our human health programs, specifically our multiple myeloma research program.

The breakdown of our research and development expenses between our agricultural and human health research programs is as follows:

	Three Months Ended March 31,		
	2009	2008	
(in thousands, except % values)			
	%	%	%

Agricultural	\$	146	27%	\$	181	38%
Human health		395	73%		293	62%
Total research and development	\$	541	100%	\$	474	100%

- Agricultural research expenses decreased during the three month period ended March 31, 2009 primarily as a result of a decrease in the allocation of resources from agriculture to human health at the University of Waterloo .
- Human health research expenses increased during the three month period ended March 31, 2009 primarily as a result of the multiple myeloma project.

We expect the percentage of human health research programs to continue to increase as a percentage of the total research and development expenses as we continue our current research projects and begin new human health initiatives.

Amortization of debt discount, financing costs and interest expense

During the year ended June 30, 2008, we issued \$10,000,000 in convertible notes and warrants. The net proceeds of those convertible notes and warrants were recorded as equity. The discount on the convertible notes is being amortized, using the effective yield method, over the term of the convertible notes. The related costs of issuance were recorded as deferred financing costs and are being amortized on a straight line basis over the term of the convertible notes. At March 31, 2009, there were \$9,500,000 of convertible notes outstanding. At March 31, 2008, there were \$7,000,000 of convertible notes outstanding.

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Interest Income, net

Interest income was lower during the three month period ended March 31, 2009 as a result of lower interest rates compared to the three-month period ended March 31, 2008.

Nine Months Ended March 31, 2009 and Nine Months Ended March 31, 2008

The net loss for the nine month period ended March 31, 2009 was \$4,137,224. The net loss for the nine month period ended March 31, 2008 was \$2,914,101. Such a change represents an increase in net loss of \$1,223,123, or 42.0%. This increase in net loss was primarily the result of an increase in non-cash expenses associated with the outstanding convertible notes that were issued during the year ended June 30, 2008, an increase in operating expenses and a decrease in revenue and interest income.

Revenue

Total revenues of \$275,000 for the nine month period ended March 31, 2009 consisted of milestone payments in connection with certain agricultural license agreements. Total revenues of \$456,667 for the nine month period ended March 31, 2008 consisted of the initial payments and the amortized portion of previous milestone payments received in connection with certain agricultural license agreements.

We anticipate that we will continue to receive milestone payments in connection with our current agricultural development and license agreements while we continue to pursue our goal of attracting other companies to license our technologies in various other crops. Additionally, we anticipate that we will receive royalty payments from our license agreements when our partners commercialize their crops containing our technology. However, it is difficult for us to determine our future revenue expectations because we are a development stage biotechnology company. As such, the timing and outcome of our experiments, the timing of signing new partners and the timing of our partners moving through the development process into commercialization is difficult to accurately predict.

Operating Expenses

	Nine Months Ended March 31,			
	2009	2008	Change	%
(in thousands, except % values)				
General and administrative	\$ 1,711	\$ 1,852	\$ (141)	(7.6)%
Research and development	1,624	1,219	405	33.2%
Total operating expenses	\$ 3,335	\$ 3,071	\$ 264	8.6%

We expect operating expenses to increase over the next twelve months as we anticipate that research and development expenses will increase as we continue to expand our research and development activities.

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General and Administrative Expenses

	Nine Months Ended March 31,			
	2009	2008	Change	%
(in thousands, except % values)				
Share-based compensation	\$ 323	\$ 620	\$ (297)	(47.9)%
Payroll and benefits	522	508	14	2.8%
Investor relations	200	257	(57)	(22.2)%
Professional fees	349	248	101	40.7%

Depreciation and amortization	81	67	14	20.9%
Director fees	58	—	58	—
Other general and administrative	178	152	26	17.1%
Total general and administrative	\$ 1,711	\$ 1,852	\$ (141)	(7.6)%

- Share-based compensation for the nine months ended March 31, 2009 and, 2008 consisted of the amortized portion of the Black-Scholes value of options, restricted stock units and warrants granted to directors, employees and consultants. Share-based compensation for the nine months ended March 31, 2008 also consisted of the Black-Scholes value of \$384,000 of warrants extended and repriced in connection with an amendment to a financial advisory agreement entered into on February 14, 2008. During the nine month periods ended March 31, 2009 and 2008, there were 849,420 and 1,317,300 options, restricted stock units and warrants granted to such directors, employees and consultants.
- Payroll and benefits increased primarily as a result of salary increases.
- Investor relations decreased primarily as a result of a decrease in the cost of our annual report and investor relations consulting costs.
- Professional fees increased primarily as a result of an increase in legal fees and accounting fees primarily due to an increase in legal fees related to our multiple myeloma project and accounting and legal fees related to the review and filing of our securities filings.
- Depreciation and amortization increased primarily as a result of additional agricultural and human health patent costs being amortized.
- Director fees increased due to the Company implementing a cash compensation plan for non-employee directors beginning July 1, 2008. During the nine month period ended March 31, 2008, the non-employee directors did not receive any cash compensation.

We expect general and administrative expenses to modestly increase over the next twelve months primarily due to an increase in payroll and benefits and legal and accounting fees related to the increased regulatory environment surrounding our business.

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Research and Development Expenses

	Nine Months Ended March 31,			
	2009	2008	Change	%
	(in thousands, except % values)			
Share-based compensation	\$ 35	\$ 88	\$ (53)	(60.2)%
Other research and development	1,589	1,131	458	40.5%
Total research and development	\$ 1,624	\$ 1,219	\$ 405	33.2%

- Share-based compensation consists primarily of the amortized portion of Black-Scholes value of options, restricted stock units and warrants granted to research and development consultants and employees.
- Other research and development costs increased primarily as a result of an expansion of our human health programs, specifically our multiple myeloma research program, which was partially offset by a decrease in the cost of our research agreement with the University of Waterloo due to the strengthening of the U.S. dollar against the Canadian dollar.

The breakdown of our research and development expenses between our agricultural and human health research programs is as follows:

	Nine Months Ended March 31,			
	2009	%	2008	%
	(in thousands, except % values)			
Agricultural	\$ 457	28%	\$ 572	47%
Human health	1,167	72%	647	53%
Total research and development	\$ 1,624	100%	\$ 1,219	100%

- Agricultural research expenses decreased during the nine month period ended March 31, 2009 primarily as a result of a decrease in the allocation of resources from agriculture to human health at the University of Waterloo. Human health research expenses increased during the nine month period ended March 31, 2009 primarily as a result of the multiple myeloma project.

We expect the percentage of human health research programs to continue to increase as a percentage of the total research and development expenses as we continue our current research projects and begin new human health initiatives.

Amortization of debt discount, financing costs and interest expense

During the year ended June 30, 2008, we issued \$10,000,000 in convertible notes and warrants. The net proceeds of those notes and warrants were recorded as equity. The discount on the convertible notes is being amortized, using the effective yield method, over the term of the convertible notes. The related costs of issuance were recorded as deferred financing costs and are being amortized on a straight line basis over the term of the convertible notes. At March 31, 2009 there were \$9,500,000 of convertible notes outstanding. At March 31, 2008, there were \$7,000,000 of convertible notes outstanding.

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Interest Income, net

Interest income was lower during the nine month period ended March 31, 2009 as a result of lower interest rates during the nine month period ended March 31, 2009.

Period From Inception on July 1, 1998 through March 31, 2009

From inception of operations on July 1, 1998 through March 31, 2009, we have had revenues of \$1,450,000, which consisted of the initial license fees and milestone payments in connection with our various development and license agreements. We do not expect to generate significant revenues for approximately the next one to three years, during which time we will continue to engage in significant research and development efforts.

We have incurred losses each year since inception and have an accumulated deficit of \$34,360,254 at March 31, 2009. We expect to continue to incur losses as a result of expenditures on research and development and administrative activities.

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Item 3. Quantitative and Qualitative Disclosures about Market Risk.

Foreign Currency Risk

Our financial statements are denominated in United States dollars and, except for our agreement with the University of Waterloo, which is denominated in Canadian dollars, all of our contracts are denominated in United States dollars. Therefore, we believe that fluctuations in foreign currency exchange rates will not result in any material adverse effect on our financial condition or results of operations. In the event we derive a greater portion of our revenues from international operations or in the event a greater portion of our expenses are incurred internationally and denominated in a foreign currency, then changes in foreign currency exchange rates could effect our results of operations and financial condition.

Interest Rate Risk

We invest in high-quality financial instruments, primarily money market funds and United States treasury notes, with an effective duration of the portfolio of less than one year, and no security with an effective duration in excess of one year, which we believe are subject to limited credit risk. We currently do not hedge our interest rate exposure. Due to the short-term nature of our investments, which we plan to hold until maturity, we do not believe that we have any material exposure to interest rate risk arising from our investments.

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Item 4T. Controls and Procedures.

(a) Evaluation of disclosure controls and procedures.

The principal executive officer and principal financial officer have evaluated our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) as of March 31, 2009. Based on this evaluation, they have concluded that our disclosure controls and procedures were effective to ensure that the information required to be disclosed by us in reports that we file or submit under the Securities Exchange Act of 1934 is recorded, processed, summarized and reported within the time periods specified in the Commission's rules and forms, and to ensure that information required to be disclosed by us in the reports that we file or submit under the Securities Exchange Act of 1934 is accumulated and communicated to our management, including our principal executive and principal financial officers, to allow timely decisions regarding required disclosure.

(b) Changes in internal controls.

No change in our internal controls over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) occurred during the three month and nine month periods ended March 31, 2009 that has materially affected, or is reasonably likely to materially affect, our internal controls over financial reporting.

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PART II. OTHER INFORMATION.

Item 1A. Risk Factors.

The more prominent risks and uncertainties inherent in our business are described below. However, additional risks and uncertainties may also impair our business operations. If any of the following risks actually occur, our business, financial condition or results of operations may suffer.

Risks Related to Our Business

We have a limited operating history and have incurred substantial losses and expect to incur future losses.

We are a development stage biotechnology company with a limited operating history and limited assets and capital. We have incurred losses each year since inception and had an accumulated deficit of \$34,360,254 at March 31, 2009. We have generated minimal revenues by licensing our technology for certain crops to companies willing to share in our development costs. In addition, our technology may not be ready for commercialization for several years.

We expect to continue to incur losses for the next several years because we anticipate that our expenditures on research and development, and administrative activities will significantly exceed our revenues during that period. We cannot predict when, if ever, we will become profitable.

We may need additional capital to fund our operations until we are able to generate a profit.

Our operations to date have required significant cash expenditures. Our future capital requirements will depend on the results of our research and development activities, preclinical and clinical studies, and competitive and technological advances.

In addition, the most recent financings with YA Global Investments, L.P., referred to herein as YA Global, and Stanford Venture Capital Holdings, Inc., referred to herein as Stanford, are secured by all of our assets. If we default under the convertible notes, the investors may foreclose on our assets and our business. As a result, we will need to obtain more funding in the future through collaborations or other arrangements with research institutions and corporate partners, or public and private offerings of our securities, including debt or equity financing. We may not be able to obtain adequate funds for our operations from these sources when needed or on acceptable terms. Future collaborations or similar arrangements may require us to license valuable intellectual property to, or to share substantial economic benefits with, our collaborators. If we raise additional capital by issuing additional equity or securities convertible into equity, our stockholders may experience dilution and our share price may decline. Any debt financing may result in restrictions on our spending.

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If we are unable to raise additional funds, we will need to do one or more of the following:

- delay, scale-back or eliminate some or all of our research and product development programs;
- license third parties to develop and commercialize products or technologies that we would otherwise seek to develop and commercialize ourselves;
- seek strategic alliances or business combinations;
- attempt to sell our company;
- cease operations; or
- declare bankruptcy.

We believe that at the projected rate of spending we should have sufficient cash and investments to maintain our present operations for the next 4 months as of March 31, 2009.

We may be adversely affected by the current economic environment.

Our ability to obtain financing, invest in and grow our business, and meet our financial obligations depends on our operating and financial performance, which in turn is subject to numerous factors. In addition to factors specific to our business, prevailing economic conditions and financial, business and other factors beyond our control can also affect our business and ability to raise capital. We cannot anticipate all of the ways in which the current economic climate and financial market conditions could adversely impact our business.

We depend on a single principal technology and, if our technology is not commercially successful, we will have no alternative source of revenue.

Our primary business is the development and licensing of technology to identify, isolate, characterize and promote or silence genes which control the death of cells in humans and plants. Our future revenue and profitability critically depend upon our ability to successfully develop apoptosis and senescence gene technology and later license or market such technology. We have conducted experiments on certain crops with favorable results and have conducted certain preliminary cell-line and animal experiments, which have provided us with data upon which we have designed additional research programs. However, we cannot give any assurance that our technology will be commercially successful or economically viable for any crops or human health applications.

In addition, no assurance can be given that adverse consequences might not result from the use of our technology such as the development of negative effects on humans or plants or reduced benefits in terms of crop yield or protection. Our failure to obtain market acceptance of our technology or of our current or potential licensees to successfully commercialize such technology would have a material adverse effect on our business.

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We outsource all of our research and development activities and, if we are unsuccessful in maintaining our alliances with these third parties, our research and development efforts may be delayed or curtailed.

We rely on third parties to perform all of our research and development activities. Our research and development efforts take place at the University of Waterloo in Ontario, Canada, where our technology was discovered, Mayo Clinic, the University of Virginia and with our commercial partners. At this time, we do not have the internal capabilities to perform our research and development activities. Accordingly, the failure of third-party research partners to perform under agreements entered into with us, or our failure to renew important research agreements with these third parties, may delay or curtail our research and development efforts.

We have significant future capital needs and may be unable to raise capital when needed, which could force us to delay or reduce our research and development efforts.

As of March 31, 2009, we had cash and highly-liquid investments of \$2,677,581 and working capital of \$2,594,256. Using our available reserves as of March 31, 2009, we believe that we can operate according to our current business plan for the next 4 months from March 31, 2009. To date, we have generated minimal revenues and anticipate that our operating costs will exceed any revenues generated over the next several years. Therefore, we will be required to raise additional capital in the future in order to operate in accordance with our current business plan, and this funding may not be available on favorable terms, if at all. If we are unable to raise additional funds, we will need to do one or more of the following:

- delay, scale back or eliminate some or all of our research and development programs;
- provide a license to third parties to develop and commercialize our technology that we would otherwise seek to develop and commercialize ourselves;
- seek strategic alliances or business combinations;
- attempt to sell our company;
- cease operations; or
- declare bankruptcy.

In addition, in connection with any funding, if we need to issue more equity securities than our certificate of incorporation currently authorizes, or more than 20% of the shares of our common stock outstanding, we may need stockholder approval. If stockholder approval is not obtained or if adequate funds are not available, we may be required to curtail operations significantly or to obtain funds through arrangements with collaborative partners or others that may require us to relinquish rights to certain of our technologies, product candidates, products or potential markets. Investors may experience dilution in their investment from future offerings of our common stock. For example, if we raise additional capital by issuing equity securities, such an issuance would reduce the percentage ownership of existing stockholders. In addition,

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assuming the exercise of all options and warrants outstanding and the conversion of the notes into common stock, as of March 31, 2009, we had 4,383,328 shares of common stock authorized but unissued and unreserved, which may be issued from time to time by our board of directors without stockholder approval. The total number of shares that may be issued under the financing is subject to certain caps as more fully described in this Form 10-Q. Furthermore, we may need to issue securities that have rights, preferences and privileges senior to our common stock. Failure to obtain financing on acceptable terms would have a material adverse effect on our liquidity.

Since our inception, we have financed all of our operations through private equity and debt financings. Our future capital requirements depend on numerous factors, including:

- the scope of our research and development;
- our ability to attract business partners willing to share in our development costs;
- our ability to successfully commercialize our technology;
- competing technological and market developments;
- our ability to enter into collaborative arrangements for the development, regulatory approval and commercialization of other products; and
- the cost of filing, prosecuting, defending and enforcing patent claims and other intellectual property rights.

Our business depends upon our patents and proprietary rights and the enforcement of these rights. Our failure to obtain and maintain patent protection may increase competition and reduce demand for our technology.

As a result of the substantial length of time and expense associated with developing products and bringing them to the marketplace in the biotechnology and agricultural industries, obtaining and maintaining patent and trade secret protection for technologies, products and processes is of vital importance. Our success will depend in part on several factors, including, without limitation:

- our ability to obtain patent protection for our technologies and processes;
- our ability to preserve our trade secrets; and
- our ability to operate without infringing the proprietary rights of other parties both in the United States and in foreign countries.

As of March 31, 2009, we have been issued nineteen (19) patents by the PTO and twenty-six (26) patents from foreign countries. We have also filed numerous patent applications for our technology in the United States and in several foreign countries, which technology is vital to our

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primary business, as well as several Continuations in Part on these patent applications. Our success depends in part upon the grant of patents from our pending patent applications.

Although we believe that our technology is unique and that it will not violate or infringe upon the proprietary rights of any third party, we cannot assure you that these claims will not be made or if made, could be successfully defended against. If we do not obtain and maintain patent protection, we may face increased competition in the United States and internationally, which would have a material adverse effect on our business.

Since patent applications in the United States are maintained in secrecy until patents are issued, and since publication of discoveries in the scientific and patent literature tend to lag behind actual discoveries by several months, we cannot be certain that we were the first creator of the inventions covered by our pending patent applications or that we were the first to file patent applications for these inventions.

In addition, among other things, we cannot assure you that:

- our patent applications will result in the issuance of patents;
- any patents issued or licensed to us will be free from challenge and if challenged, would be held to be valid;
- any patents issued or licensed to us will provide commercially significant protection for our technology, products and processes;
- other companies will not independently develop substantially equivalent proprietary information which is not covered by our patent rights;
- other companies will not obtain access to our know-how;
- other companies will not be granted patents that may prevent the commercialization of our technology; or
- we will not incur licensing fees and the payment of significant other fees or royalties to third parties for the use of their intellectual property in order to enable us to conduct our business.

Our competitors may allege that we are infringing upon their intellectual property rights, forcing us to incur substantial costs and expenses in resulting litigation, the outcome of which would be uncertain.

Patent law is still evolving relative to the scope and enforceability of claims in the fields in which we operate. We are like most biotechnology companies in that our patent protection is highly uncertain and involves complex legal and technical questions for which legal principles are not yet firmly established. In addition, if issued, our patents may not contain claims sufficiently broad to protect us against third parties with similar technologies or products, or provide us with any competitive advantage.

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The PTO and the courts have not established a consistent policy regarding the breadth of claims allowed in biotechnology patents. The allowance of broader claims may increase the incidence and cost of patent interference proceedings and the risk of infringement litigation. On the other hand, the allowance of narrower claims may limit the scope and value of our proprietary rights.

The laws of some foreign countries do not protect proprietary rights to the same extent as the laws of the United States, and many companies have encountered significant problems and costs in protecting their proprietary rights in these foreign countries.

We could become involved in infringement actions to enforce and/or protect our patents. Regardless of the outcome, patent litigation is expensive and time consuming and would distract our management from other activities. Some of our competitors may be able to sustain the costs of complex patent litigation more effectively than we could because they have substantially greater resources. Uncertainties resulting from the initiation and continuation of any patent litigation could limit our ability to continue our operations.

If our technology infringes the intellectual property of our competitors or other third parties, we may be required to pay license fees or damages.

If any relevant claims of third-party patents that are adverse to us are upheld as valid and enforceable, we could be prevented from commercializing our technology or could be required to obtain licenses from the owners of such patents. We cannot assure you that such licenses would be available or, if available, would be on acceptable terms. Some licenses may be non-exclusive and, therefore, our competitors may have access to the same technology licensed to us. In addition, if any parties successfully claim that the creation or use of our technology infringes upon their intellectual property rights, we may be forced to pay damages, including treble damages.

Our security measures may not adequately protect our unpatented technology and, if we are unable to protect the confidentiality of our proprietary information and know-how, the value of our technology may be adversely affected.

Our success depends upon know-how, unpatentable trade secrets, and the skills, knowledge and experience of our scientific and technical personnel. As a result, we require all employees to agree to a confidentiality provision in their employment agreement that prohibits the disclosure of confidential information to anyone outside of our company, during the term of employment and thereafter. We also require all employees to disclose and assign to us the rights to their ideas, developments, discoveries and inventions. We also attempt to enter into similar agreements with our consultants, advisors and research collaborators. We cannot assure you that adequate protection for our trade secrets, know-how or other proprietary information against unauthorized use or disclosure will be available.

We occasionally provide information to research collaborators in academic institutions and request that the collaborators conduct certain tests. We cannot assure you that the academic institutions will not assert intellectual property rights in the results of the tests conducted by the research collaborators, or that the academic institutions will grant licenses under such intellectual property rights to us on acceptable terms, if at all. If the assertion of intellectual property rights

by an academic institution is substantiated, and the academic institution does not grant intellectual property rights to us, these events could limit our ability to commercialize our technology.

As we evolve from a company primarily involved in the research and development of our technology into one that is also involved in the commercialization of our technology, we may have difficulty managing our growth and expanding our operations.

As our business grows, we may need to add employees and enhance our management, systems and procedures. We may need to successfully integrate our internal operations with the operations of our marketing partners, manufacturers, distributors and suppliers to produce and market commercially viable products. We may also need to manage additional relationships with various collaborative partners, suppliers and other organizations. Although we do not presently conduct research and development activities in-house, we may undertake those activities in the future. Expanding our business may place a significant burden on our management and operations. We may not be able to implement improvements to our management information and control systems in an efficient and timely manner and we may discover deficiencies in our existing systems and controls. Our failure to effectively respond to such changes may make it difficult for us to manage our growth and expand our operations.

We have no marketing or sales history and depend on third-party marketing partners. Any failure of these parties to perform would delay or limit our commercialization efforts.

We have no history of marketing, distributing or selling biotechnology products and we are relying on our ability to successfully establish marketing partners or other arrangements with third parties to market, distribute and sell a commercially viable product both here and abroad. Our business plan envisions creating strategic alliances to access needed commercialization and marketing expertise. We may not be able to attract qualified sub-licensees, distributors or marketing partners, and even if qualified, these marketing partners may not be able to successfully market agricultural products or human health applications developed with our technology. If our current or potential future marketing partners fail to provide adequate levels of sales, our commercialization efforts will be delayed or limited and we may not be able to generate revenue.

We will depend on joint ventures and strategic alliances to develop and market our technology and, if these arrangements are not successful, our technology may not be developed and the expenses to commercialize our technology will increase.

In its current state of development, our technology is not ready to be marketed to consumers. We intend to follow a multi-faceted commercialization strategy that involves the licensing of our technology to business partners for the purpose of further technological development, marketing and distribution. We have and are seeking business partners who will share the burden of our development costs while our technology is still being developed, and who will pay us royalties when they market and distribute products incorporating our technology upon commercialization. The establishment of joint ventures and strategic alliances may create future competitors, especially in certain regions abroad where we do not pursue patent protection. If we fail to establish beneficial business partners and strategic alliances, our growth will suffer and the continued development of our technology may be harmed.

Competition in the human health and agricultural biotechnology industries is intense and technology is changing rapidly. If our competitors market their technology faster than we do, we may not be able to generate revenues from the commercialization of our technology.

Many human health and agricultural biotechnology companies are engaged in research and development activities relating to apoptosis and senescence. The market for plant protection and yield enhancement products is intensely competitive, rapidly changing and undergoing consolidation. We may be unable to compete successfully against our current and future competitors, which may result in price reductions, reduced margins and the inability to achieve market acceptance for products containing our technology. Our competitors in the field of plant senescence gene technology are companies that develop and produce transgenic plants and include major international agricultural companies, specialized biotechnology companies, research and academic institutions and, potentially, our joint venture and strategic alliance partners. These companies include: Mendel Biotechnology, Inc., Renessen LLC, Exelixis Plant Sciences, Inc., Syngenta International AG, and Eden Bioscience Corporation, among others. Some of our competitors that are involved in apoptosis research include: Amgen Inc.; Centocor, Inc.; Genzyme Corporation; OSI Pharmaceuticals, Inc.; Novartis AG; Introgen Therapeutics, Inc.; Genta, Inc.; and Vertex Pharmaceuticals, Inc. Many of these competitors have substantially greater financial, marketing, sales, distribution and technical resources than us and have more experience in research and development, clinical trials, regulatory matters, manufacturing and marketing. We anticipate increased competition in the future as new companies enter the market and new technologies become available. Our technology may be rendered obsolete or uneconomical by technological advances or entirely different approaches developed by one or more of our competitors, which will prevent or limit our ability to generate revenues from the commercialization of our technology.

Our business is subject to various government regulations and, if we or our licensees are unable to obtain regulatory approval, we may not be able to continue our operations.

At present, the U.S. federal government regulation of biotechnology is divided among three agencies:

- the USDA regulates the import, field testing and interstate movement of specific types of genetic engineering that may be used in the creation of transgenic plants;
- the EPA regulates activity related to the invention of plant pesticides and herbicides, which may include certain kinds of transgenic plants; and
- the FDA regulates foods derived from new plant varieties.

The FDA requires that transgenic plants meet the same standards for safety that are required for all other plants and foods in general. Except in the case of additives that significantly alter a food's structure, the FDA does not require any additional standards or specific approval for genetically engineered foods, but expects transgenic plant developers to consult the FDA before introducing a new food into the marketplace.

Use of our technology, if developed for human health applications, will also be subject to FDA regulation. The FDA must approve any drug or biologic product before it can be marketed

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in the United States. In addition, prior to being sold outside of the U.S., any products resulting from the application of our human health technology must be approved by the regulatory agencies of foreign governments. Prior to filing a new drug application or biologics license application with the FDA, we would have to perform extensive clinical trials, and prior to beginning any clinical trial, we would need to perform extensive preclinical testing which could take several years and may require substantial expenditures.

We believe that our current activities, which to date have been confined to research and development efforts, do not require licensing or approval by any governmental regulatory agency. However, we are planning on performing clinical trials, which would be subject to FDA approval. Additionally, federal, state and foreign regulations relating to crop protection products and human health applications developed through biotechnology are subject to public concerns and political circumstances, and, as a result, regulations have changed and may change substantially in the future. Accordingly, we may become subject to governmental regulations or approvals or become subject to licensing requirements in connection with our research and development efforts. We may also be required to obtain such licensing or approval from the governmental regulatory agencies described above, or from state agencies, prior to the commercialization of our genetically transformed plants and human health technology. In addition, our marketing partners who utilize our technology or sell products grown with our technology may be subject to government regulations. If unfavorable governmental regulations are imposed on our technology or if we fail to obtain licenses or approvals in a timely manner, we may not be able to continue our operations.

Preclinical studies and clinical trials of our human health applications may be unsuccessful, which could delay or prevent regulatory approval.

Preclinical studies may reveal that our human health technology is ineffective or harmful, and/or clinical trials may be unsuccessful in demonstrating efficacy and safety of our human health technology, which would significantly limit the possibility of obtaining regulatory approval for any drug or biologic product manufactured with our technology. The FDA requires submission of extensive preclinical, clinical and manufacturing data to assess the efficacy and safety of potential products. Furthermore, the success of preliminary studies does not ensure commercial success, and later-stage clinical trials may fail to confirm the results of the preliminary studies.

Any inability to license from third parties their proprietary technologies or processes which we use in connection with the development of our technology may impair our business.

Other companies, universities and research institutions have or may obtain patents that could limit our ability to use our technology in a product candidate or impair our competitive position. As a result, we would have to obtain licenses from other parties before we could continue using our technology in a product candidate. Any necessary licenses may not be available on commercially acceptable terms, if at all. If we do not obtain required licenses, we may not be able to develop our technology into a product candidate or we may encounter significant delays in development while we redesign methods that are found to infringe on the patents held by others.

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Clinical trials for our human health technology will be lengthy and expensive and their outcome is uncertain

Before obtaining regulatory approval for the commercial sales of any product containing our technology, we must demonstrate through clinical testing that our technology and product containing our technology is safe and effective for use in humans. Conducting clinical trials is a time-consuming, expensive and uncertain process and typically requires years to complete. In our industry, the results from preclinical studies and early clinical trials often are not predictive of results obtained in later-stage clinical trials. Some products and technologies that have shown promising results in preclinical studies or early clinical trials subsequently fail to establish sufficient safety and efficacy data necessary to obtain regulatory approval. At any time during clinical trials we or the FDA might delay or halt any clinical trial for various reasons, including:

- occurrence of unacceptable toxicities or side effects;
- ineffectiveness of the product candidate;
- negative or inconclusive results from the clinical trials, or results that necessitate additional studies or clinical trials;
- delays in obtaining or maintaining required approvals from institutions, review boards or other reviewing entities at clinical sites;
- delays in patient enrollment; or
- insufficient funding or a reprioritization of financial or other resources.

Any failure or substantial delay in successfully completing clinical trials and obtaining regulatory approval for our product candidates could severely harm our business.

Even if we receive regulatory approval, consumers may not accept products containing our technology, which will prevent us from being profitable since we have no other source of revenue.

We cannot guarantee that consumers will accept products containing our technology. Recently, there has been consumer concern and consumer advocate activism with respect to genetically-engineered agricultural consumer products. The adverse consequences from heightened consumer concern in this regard could affect the markets for agricultural products developed with our technology and could also result in increased government regulation in response to that concern. If the public or potential customers perceive our technology to be genetic modification or genetic engineering, agricultural products grown with our technology may not gain market acceptance.

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We depend on our key personnel and, if we are not able to attract and retain qualified scientific and business personnel, we may not be able to grow our business or develop and commercialize our technology.

We are highly dependent on our scientific advisors, consultants and third-party research partners. Our success will also depend in part on the continued service of our key employees and our ability to identify, hire and retain additional qualified personnel in an intensely competitive market. Although we have employment agreements with all of our key employees and a research agreement with Dr. John Thompson, these agreements may be terminated upon short or no notice. We do not maintain key person life insurance on any member of management. The failure to attract and retain key personnel could limit our growth and hinder our research and development efforts.

Certain provisions of our charter, by-laws and Delaware law could make a takeover difficult.

Certain provisions of our certificate of incorporation and by-laws could make it more difficult for a third party to acquire control of us, even if the change in control would be beneficial to stockholders. Our certificate of incorporation authorizes our board of directors to issue, without stockholder approval, except as may be required by the rules of the NYSE Amex Exchange, 5,000,000 shares of preferred stock with voting, conversion and other rights and preferences that could adversely affect the voting power or other rights of the holders of our common stock. Similarly, our by-laws do not restrict our board of directors from issuing preferred stock without stockholder approval.

In addition, we are subject to the Business Combination Act of the Delaware General Corporation Law which, subject to certain exceptions, restricts certain transactions and business combinations between a corporation and a stockholder owning 15% or more of the corporation's outstanding voting stock for a period of three years from the date such stockholder becomes a 15% owner. These provisions may have the effect of delaying or preventing a change of control of us without action by our stockholders and, therefore, could adversely affect the value of our common stock.

Furthermore, in the event of our merger or consolidation with or into another corporation, or the sale of all or substantially all of our assets in which the successor corporation does not assume our outstanding equity awards or issue equivalent equity awards, our current equity plans require the accelerated vesting of such outstanding equity awards.

Increasing political and social turmoil, such as terrorist and military actions, increase the difficulty for us and our strategic partners to forecast accurately and plan future business activities.

Recent political and social turmoil, can be expected to put further pressure on economic conditions in the United States and worldwide. These political, social and economic conditions may make it difficult for us to plan future business activities.

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Risks Related to Our Common Stock

Our management and other affiliates have significant control of our common stock and could significantly influence our actions in a manner that conflicts with our interests and the interests of other stockholders.

As of March 31, 2009, our executive officers, directors and affiliated entities together beneficially own approximately 59.7% of the outstanding shares of our common stock, assuming the exercise of options and warrants which are currently exercisable or will become exercisable within 60 days of March 31, 2009, held by these stockholders. As a result, these stockholders, acting together, will be able to exercise significant influence over matters requiring approval by our stockholders, including the election of directors, and may not always act in the best interests of other stockholders. Such a concentration of ownership may have the effect of delaying or preventing a change in control of us, including transactions in which our stockholders might otherwise receive a premium for their shares over then current market prices. Stanford is one such major stockholder of the Company. In February 2009, the SEC filed a civil lawsuit accusing certain executives of Stanford of fraud and the company's assets were subsequently placed in receivership. It is unclear at this point, what impact, if any, the ongoing investigation of Stanford may have on the Company.

A significant portion of our total outstanding shares of common stock may be sold in the market in the near future, which could cause the market price of our common stock to drop significantly.

As of March 31, 2009, we had 19,511,199 shares of our common stock issued and outstanding, of which approximately 5,319,639 shares are registered pursuant to registration statements on Form S-3 and the remainder of which are either eligible to be sold under SEC Rule 144 or are in the public float. In addition, we have registered 2,632,194 shares of our common stock underlying warrants previously issued on the Form S-3 registration statement and we registered 6,137,200 shares of our common stock underlying options granted or to be granted under our stock option plan. Consequently, sales of substantial amounts of our common stock in the public market, or the perception that such sales could occur, may have a material adverse effect on our stock price.

Our common stock has a limited trading market, which could limit your ability to resell your shares of common stock at or above your purchase price.

Our common stock is quoted on the NYSE Amex Exchange and currently has a limited trading market. The NYSE Amex Exchange requires us to meet minimum financial requirements in order to maintain our listing. We currently believe that we meet the continued listing requirements of the NYSE Amex Exchange. However, we cannot assure you that we will continue to meet such standards. If we do not meet the continued listing standards, we could be delisted. We cannot assure you that an active trading market will develop or, if developed, will be maintained. As a result, our stockholders may find it difficult to dispose of shares of our common stock and, as a result, may suffer a loss of all or a substantial portion of their investment.

If our common stock is delisted from the NYSE Amex Exchange, we may not be able to list on any other stock exchange, and our common stock may be subject to the “penny stock” regulations, which may affect the ability of our stockholders to sell their shares.

The NYSE Amex Exchange requires us to meet minimum financial requirements in order to maintain our listing. As of March 31, 2009, we believe that we continue to be in compliance with the NYSE Amex Exchange’s continued listing requirements. However, if we are unable to continue to be in compliance with the continued listing requirements, it is possible that we will be delisted. If we are delisted from the NYSE Amex Exchange, our common stock likely will become a “penny stock”. In general, regulations of the SEC define a “penny stock” to be an equity security that is not listed on a national securities exchange or the NASDAQ Stock Market and that has a market price of less than \$5.00 per share or with an exercise price of less than \$5.00 per share, subject to certain exceptions. If our common stock becomes a penny stock, additional sales practice requirements would be imposed on broker-dealers that sell such securities to persons other than certain qualified investors. For transactions involving a penny stock, unless exempt, a broker-dealer must make a special suitability determination for the purchaser and receive the purchaser’s written consent to the transaction prior to the sale. In addition, the rules on penny stocks require delivery, prior to and after any penny stock transaction, of disclosures required by the SEC.

If our stock is not accepted for listing on the NYSE Amex Exchange, we will make every possible effort to have it listed on the Over the Counter Bulletin Board, or the OTC Bulletin Board. If our common stock were to be traded on the OTC Bulletin Board, the Securities Exchange Act of 1934, as amended, and related SEC rules would impose additional sales practice requirements on broker-dealers that sell our securities. These rules may adversely affect the ability of stockholders to sell our common stock and otherwise negatively affect the liquidity, trading market and price of our common stock.

We believe that the listing of our common stock on a recognized national trading market, such as the NYSE Amex Exchange, is an important part of our business and strategy. Such a listing helps our stockholders by providing a readily available trading market with current quotations. Without that, stockholders may have a difficult time getting a quote for the sale or purchase of our stock, the sale or purchase of our stock would likely be made more difficult and the trading volume and liquidity of our stock would likely decline. The absence of such a listing may adversely affect the acceptance of our common stock as currency or the value accorded it by other parties. In that regard, the absence of a listing on a recognized national trading market will also affect our ability to benefit from the use of our operations and expansion plans, including for use in licensing agreements, joint ventures, the development of strategic relationships and acquisitions, which are critical to our business and strategy and none of which is currently the subject of any agreement, arrangement or understanding, with respect to any future financing or strategic relationship it may undertake. A delisting from the NYSE Amex Exchange could result in negative publicity and could negatively impact our ability to raise capital in the future.

The market price of our common stock may fluctuate and may drop below the price you paid.

We cannot assure you that you will be able to resell the shares of our common stock at or above your purchase price. The market price of our common stock may fluctuate significantly in response to a number of factors, some of which are beyond our control. These factors include:

- quarterly variations in operating results;
- the progress or perceived progress of our research and development efforts;
- changes in accounting treatments or principles;
- announcements by us or our competitors of new technology, product and service offerings, significant contracts, acquisitions or strategic relationships;
- additions or departures of key personnel;
- future offerings or resales of our common stock or other securities;
- stock market price and volume fluctuations of publicly-traded companies in general and development companies in particular; and
- general political, economic and market conditions.

Because we do not intend to pay, and have not paid, any cash dividends on our shares of common stock, our stockholders will not be able to receive a return on their shares unless the value of our common stock appreciates and they sell their shares.

We have never paid or declared any cash dividends on our common stock and we intend to retain any future earnings to finance the development and expansion of our business. We do not anticipate paying any cash dividends on our common stock in the foreseeable future. Therefore, our stockholders will not be able to receive a return on their investment unless the value of our common stock appreciates and they sell their shares.

Our stockholders may experience substantial dilution as a result of the conversion of outstanding convertible debentures, or the exercise of options and warrants to purchase our common stock.

As of March 31, 2009, we have granted options outside of our stock option plan to purchase 10,000 shares of our common stock and outstanding warrants to purchase 18,713,443 shares of our common stock. In addition, as of March 31, 2009, we have reserved 10,437,884 shares of our common stock for issuance upon the exercise of options granted pursuant to our stock option plan, all of which may be granted in the future. The exercise of these options and warrants will result in dilution to our existing stockholders and could have a material adverse effect on our stock price. In addition, any shares issued in connection with the YA Global financing or Stanford financing, as further discussed elsewhere in this Form 10-Q, can also have a dilutive effect and a possible material adverse effect on our stock price. The conversion price of the warrants are also subject to certain anti-dilution adjustments. The agreements with YA Global and Stanford provide for the potential issuance of up to a total of 61,833,332 shares of our common stock, of which 13,883,332 shares are included in outstanding warrants noted above.

[Table of Contents](#)**Item 6. Exhibits.**

Exhibits.

<u>Exhibit No.</u>	<u>Description</u>
31.1	Certification of principal executive officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002. (filed herewith)
31.2	Certification of principal financial and accounting officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002. (filed herewith)
32.1	Certification of principal executive officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, 18 U.S.C. 1350. (furnished herewith)
32.2	Certification of principal financial and accounting officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, 18 U.S.C. 1350. (furnished herewith)

[Table of Contents](#)**SIGNATURES**

In accordance with the requirements of the Securities Exchange Act of 1934, the registrant caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

SENESCO TECHNOLOGIES, INC.

DATE: May 1, 2009

By: /s/ Bruce C. Galton
 Bruce C. Galton, President and Chief Executive Officer
 (Principal Executive Officer)

DATE: May 1, 2009

By: /s/ Joel Brooks
 Joel Brooks, Chief Financial Officer and Treasurer
 (Principal Financial and Accounting Officer)

**CERTIFICATION PURSUANT TO SECTION 302
OF THE SARBANES-OXLEY ACT OF 2002**

I, Bruce C. Galton certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Senesco Technologies, 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)) 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; and
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 the registrant's board of directors (or persons performing the 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 1, 2009

/s/ Bruce C. Galton

Bruce C. Galton
President and Chief Executive Officer
(principal executive officer)

**CERTIFICATION PURSUANT TO SECTION 302
OF THE SARBANES-OXLEY ACT OF 2002**

I, Joel Brooks certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Senesco Technologies, 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)) 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; and
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 the registrant's board of directors (or persons performing the 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 1, 2009

/s/ Joel Brooks

Joel Brooks
Chief Financial Officer and Treasurer
(principal financial and accounting officer)

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report on Form 10-Q of Senesco Technologies, Inc. for the period ended March 31, 2009 as filed with the Securities and Exchange Commission on the date hereof, the undersigned, Bruce C. Galton, President and Chief Executive Officer, hereby certifies, pursuant to 18 U.S.C. Section 1350, that:

- (1) The Quarterly Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Quarterly Report fairly presents, in all material respects, the financial condition and results of operations of Senesco Technologies, Inc.

Dated: May 1, 2009

/s/ Bruce C. Galton *

Bruce C. Galton

President and Chief Executive Officer
(principal executive officer)

* A signed original of this written statement required by Section 906 has been provided to us and will be retained by us and furnished to the Securities and Exchange Commission or its staff upon request.

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report on Form 10-Q of Senesco Technologies, Inc. for the period ended March 31, 2009 as filed with the Securities and Exchange Commission on the date hereof, the undersigned, Joel Brooks, Chief Financial Officer and Treasurer, hereby certifies, pursuant to 18 U.S.C. Section 1350, that:

- (1) The Quarterly Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Quarterly Report fairly presents, in all material respects, the financial condition and results of operations of Senesco Technologies, Inc.

Dated: May 1, 2009

/s/ Joel Brooks *

Joel Brooks

Chief Financial Officer and Treasurer

(principal financial and accounting officer)

* A signed original of this written statement required by Section 906 has been provided to us and will be retained by us and furnished to the Securities and Exchange Commission or its staff upon request.
