SENESCO TECHNOLOGIES INC
Form 10-K
September 28, 2009

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

FORM 10-K

(Mark One)

x ANNUAL REPORT UNDER SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934.

For the fiscal year ended June 30, 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 number: 001-31326

SENESCO TECHNOLOGIES, INC.

(Exact name of registrant as specified in its charter)

Delaware	84-1368850
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
303 George Street, Suite 420, New Brunswick, New Jersey	08901
(Address of principal executive offices)	(Zip Code)

(732) 296-8400

(Registrant's telephone number, including area code)

None

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

Title of each class	Name of each exchange on which registered
Common Stock, $0.01 par value per share.	NYSE Amex

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

None.

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ¨ No x

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Exchange Act . Yes ¨ No x

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes x No ¨

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, in 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 if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. x

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 ¨
Non-accelerated filer ¨	Smaller reporting company x

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ¨ No x

As of September 15, 2009, the aggregate market value of the registrant’s common stock held by non-affiliates of the registrant was $7,899,030, based on the closing sales price as reported on the NYSE Amex on that date.

Indicate the number of shares outstanding of each of the registrant's classes of common stock, as of September 15, 2009:

Class	Number of Shares
Common Stock, $0.01 par value	22,604,007

DOCUMENTS INCORPORATED BY REFERENCE

As stated in Part III of this Annual Report on Form 10-K, portions of the registrant's definitive proxy statement for the registrant's 2009 Annual Meeting of Stockholders are incorporated by reference in Part III of this Annual Report on Form 10-K.

TABLE OF CONTENTS

PART I

Item 1. Business.

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 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 tumors 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 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 study 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 proposed 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 in the presence of IL-6;

- measured VEGF reduction in mouse lung tumors as a result of treatment with our genes;

- decreased ICAM and activation of NFkB in cancer cells employing siRNA against Factor 5A;

- increased the survival rate in H1N1 mouse influenza survival studies from 14% in untreated mice to 52% in mice treated with our siRNA against Factor 5A. Additionally, the treated mice reversed the weight loss typically seen in infected mice and had other reduced indicators of disease severity as measured by blood glucose and liver enzymes.

- increased the survival, while maintaining functionality, of mouse pancreatic islet cells isolated for transplantation, using intraperitaneal 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.

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 have performed 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.

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 eleven (11) 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 74% of our total research and development expenses for the year ended June 30, 2009. Our research and development expenses incurred on human health applications were approximately 56% of our total research and development expenses for the year ended June 30, 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 toxicology 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 approximately fifteen (15) months from June 30, 2009 to complete these objectives.

- Lung Inflammation. A mouse model system has been 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 recently completed private placements of $1.7 million of common stock and warrants. 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 any. 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, Incorporated., and Vertex Pharmaceuticals, Inc., amongst others.

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, lettuce, 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 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. Selected trees from the field trials were harvested and their wood chemistry and density was assessed. There were no differences in key economic characteristics of wood, such a lignin, cellulose and specific gravity, between the trees with the enhanced growth attributes and untreated control trees, which indicates that the faster growth does not result in lower wood quality. 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 resistance 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-K, 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 September 15, 2009, we have entered into eight (8) license agreements and one (1) 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 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 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 The Scotts Company was amended. Due to a change in the corporate financial policy at Scotts, Scotts requested to defer certain milestone payments, which were to be made on a calendar 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, and 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, and 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, and 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 the corporate restructuring of Harris Moran. 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 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 promising 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 owns 2.9% of the outstanding shares of our common stock, $0.01 par value, as of June 30, 2009. On September 1, 1998, we entered into, and have extended through August 31, 2010, 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 Agreements, 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 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; 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.

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, but 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.

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, may 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.

Employees

In addition to the eleven (11) scientists performing funded research for us at Mayo Clinic, the University of Virginia, and the University of Waterloo, we have five (5) employees and one (1) consultant, four (4) of whom are executive officers and who are involved in our management. We do not anticipate hiring any additional employees over the next twelve months.

The officers are assisted by a Scientific Advisory Board that consists of prominent experts in the fields of plant and human cell biology as follows:

- Alan Bennett, Ph.D., who serves as the Chairman of the Scientific Advisory Board, is the Associate Vice Chancellor of the Office of Technology Transfer at the University of California. His research interests include the molecular biology of tomato fruit development and ripening, the molecular basis of membrane transport, and cell wall disassembly.

- Charles A. Dinarello, M.D., who serves as a member of the Scientific Advisory Board, is a Professor of Medicine at the University of Colorado School of Medicine, a member of the U.S. National Academy of Sciences and the author of over 500 published research articles. In addition to his active academic research career, Dr. Dinarello has held advisory positions with two branches of the National Institutes of Health and positions on the Board of Governors of both the Weizmann Institute and Ben Gurion University.

- James E. Meier is an Associate Professor of Medicine at Beth Israel Deaconess Medical Center, a teaching hospital of Harvard Medical School. He is also a practicing physician in the Division of Hematology-Oncology at Beth Israel. Dr. Mier's research is funded by the NIH and he is a member of numerous professional societies.

Furthermore, pursuant to the Research and Development Agreements, a substantial amount of our research and development activities are conducted at the University of Waterloo under the supervision of Dr. Thompson, our Executive Vice President and Chief Scientific Officer. We utilize the University's research staff including graduate and post-graduate researchers.

We have also undertaken preclinical apoptosis research at the University of Colorado under the supervision of Dr. Dinarello. In addition to the research being conducted at the University of Colorado, we have also undertaken preclinical apoptosis research at Mayo Clinic, and the University of Virginia. This research is performed pursuant to specific project proposals that have agreed-upon research outlines, timelines and budgets. We may also contract research to additional university laboratories or to other companies in order to advance the development of our technology.

Safe Harbor Statement

The statements contained in this Annual Report on Form 10-K that are not historical facts are forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended, and the Private Securities Litigation Reform Act of 1995. Such forward-looking statements may be identified by, among other things, the use of forward-looking terminology such as “believes,” “expects,” “may,” “will,” “should,” or “anticipates” or the negative thereof or other variations thereon or comparable terminology, or by discussions of strategy that involve risks and uncertainties. In particular, our statements regarding the anticipated growth in the markets for our technologies, the continued advancement of our research, the approval of our patent applications, the possibility of governmental approval in order to sell or offer for sale to the general public a genetically engineered plant or plant product, the successful implementation of our commercialization strategy, including the success of the ArborGen Agreement, the Cal/West License, The Scotts License, the Broin License, the Bayer Licenses, the Monsanto License, and the Research and Development Agreements, the successful implementation of the Rahan Joint Venture, statements relating to our patent applications, the anticipated long term growth of our business, the results of our preclinical studies, if any, our ability to comply with the continued listing standards of the NYSE Amex, and the timing of the projects and trends in future operating performance are examples of such forward-looking statements. The forward-looking statements include risks and uncertainties, including, but not limited to,our limited operating history, our need for additional capital to fund our operations until we are able to generate a profit, the current economic environment, our dependence on a single principal technology, our outsourcing of our research and development activities, our significant future capital needs, our dependence on our patents and proprietary rights and the enforcement of these rights, the potential for our competitors to allege that we are infringing upon their intellectual property rights, the potential that our technology infringes the intellectual property of our competitors or other third parties, the potential that our security measures may not adequately protect our unpatented technology, potential difficulty in managing our growth and expanding our operations, our lack of marketing or sales history and dependence on third-party marketing partners, our potential future dependence on joint ventures and strategic alliances to develop and market our technology, the intense competition in the human health and agricultural biotechnology industries, the various government regulations that our business is subject to, the potential that our preclinical studies and clinical trials of our human health applications may be unsuccessful, any inability to license from third parties their proprietary technologies or processes which we use in connection with the development of our technology, the length, expense and uncertainty associated with clinical trials for our human health technology, the potential that, even if we receive regulatory approval, consumers may not accept products containing our technology, our dependence on key personnel, the potential that certain provisions of our charter, by-laws and Delaware law could make a takeover difficult, increasing political and social turmoil, the potential that our management and other affiliates, due to their significant control of our common stock ability to significantly influence our actions, the potential that a significant portion of our total outstanding shares of common stock may be sold in the market in the near future, the limited trading market of our common stock, the potential that our common stock may be delisted from the NYSE Amex Exchange, fluctuations in the market price of our common stock, our dividend policy and potential for our stockholders to be diluted.

ITEM 1A: Factors That May Affect Our Business, Future Operating Results and Financial Condition

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 $35,949,899 at June 30, 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 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.

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, and with the proceeds from the private placement completed in July 2009 and the proceeds from the proposed private placements pending NYSE AMEX approval, as of June 30, 2009, we should have sufficient cash and investments to maintain our present operations for the next six(6) months as of June 30, 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.

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 June 30, 2009, we had cash and highly-liquid investments of $1,430,569 and working capital of $1,259,300. In July 2009, we received aggregate net proceeds of approximately $900,000 from a private placement of our equity securities and entered into securities purchase agreements for an additional $725,000 of net proceeds from other private placement of our equity securities. The securities purchase agreements for the additional $725,000 of net proceeds is subject to NYSE AMEX approval before we may receive such net proceeds. Using our available reserves as of June 30, 2009 and the net proceeds from the private equity financings, we believe that we can operate according to our current business plan for the next six (6) months from June 30, 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, assuming the exercise of all options and warrants outstanding and the conversion of the notes into common stock, as of June 30, 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. In connection with our private placement of equity securities, in July 2009, we issued an aggregate of an additional 1,055,555 shares of common stock and warrants to purchase 2,902,778 shares of common stock. Therefore, assuming the exercise of all options and warrants granted as of July 2009, we had 424,995 shares of common stock authorized but unissued, which may be issued from time to time by our board of directors without stockholder approval. 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 June 30, 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 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.

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 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.

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.

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.

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 June 30, 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 June 30, 2009, held by these stockholders. As of July 9, 2009, upon the closing of our private placement of equity securities, our executive officers, directors and affiliated entities together beneficially own approximately 57.9% 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 July 9, 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 June 30, 2009, we had 19,812,041 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. As of July 9, 2009, upon closing of our private placement of equity securities and the exercise of warrants on July 14, 2009, we had 21,817,596 shares of our common stock issued and outstanding. 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 do not believe that we meet the continued listing requirements of the NYSE Amex Exchange. 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. Currently, we do not believe that we meet the $6,000,000 minimum net worth continued listing requirement of the NYSE AMEX Exchange. We have not yet received a notice of noncompliance from the NYSE AMEX Exchange. If we do receive a notice of noncompliance, we plan to submit a plan to the NYSE AMEX Exchange discussing how we intend to regain compliance with the continued listing requirements. If the NYSE AMEX does not accept our plan or we are unable to execute on the plan, 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 June 30, 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 June 30, 2009, we have reserved 9,437,884 shares of our common stock for issuance upon the exercise of options granted or available to be 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.

Item 1B. Unresolved Staff Comments.

None.

Item 2. Properties.

We lease office space in New Brunswick, New Jersey for a current monthly rental fee of $6,612, subject to certain escalations for our proportionate share of increases, over the base year of 2001, in the building's operating costs. The monthly rental fee will continue to increase by one percent each year through the expiration date of the lease. The lease expires in May 2011. The space is in good condition, and we believe it will adequately serve as our headquarters over the term of the lease. We also believe that this office space is adequately insured by the lessor.

Item 3. Legal Proceedings.

We are not currently a party to any legal proceedings; however, we may become involved in various claims and legal actions arising in the ordinary course of business.

Item 4. Submission of Matters to a Vote of Security Holders.

None.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.

Our common stock trades on the NYSE Amex Exchange under the symbol SNT.

The following table sets forth the range of the high and low sales price for our common stock for each of the quarters since the quarter ended September 30, 2007, as reported on the NYSE Amex Exchange.

Quarter Ended	Common Stock High	Common Stock Low
September 30, 2007	$ 1.25	$ 0.78
December 31, 2007	$ 1.05	$ 0.38
March 31, 2008	$ 1.28	$ 0.29
June 30, 2008	$ 1.99	$ 1.00
September 30, 2008	$ 1.81	$ 0.88
December 31, 2008	$ 1.25	$ 0.50
March 31, 2009	$ 0.87	$ 0.33
June 30, 2009	$ 0.97	$ 0.43

As of September 15, 2009, the approximate number of holders of record of our common stock was 240. This number does not include "street name" or beneficial holders, whose shares are held of record by banks, brokers and other financial institutions.

We have neither paid nor declared dividends on our common stock since our inception and we do not plan to pay dividends on our common stock in the foreseeable future. We expect that any earnings, which we may realize, will be retained to finance the growth of our company.

The following table provides information about the securities authorized for issuance under our equity compensation plans as of June 30, 2009.

EQUITY COMPENSATION PLAN INFORMATION

	Number of securities to be issued upon exercise of outstanding options, warrants and rights and restricted stock units	Weighted-average exercise price of outstanding options, warrants and rights and restricted stock units	Number of securities remaining available for future issuance under equity compensation plans
Equity compensation plans approved by security holders	4,550,412(1)	$ 1.70	5,887,472(2)
Equity compensation plans not approved by security holders	—	—	—

Total	4,550,412(1)	$	1.70	5,887,472(2)

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(1) Issued pursuant to our 1998 Stock Plan and 2008 Stock Plan.

(2) Available for future issuance pursuant to our 2008 Stock Plan.

RECENT SALES OF UNREGISTERED SECURITIES

Transaction with Partlet Holdings

On July 9, 2009, we entered into a Securities Purchase Agreement, referred to herein as the Partlet Securities Purchase Agreement, with Partlet Holdings Ltd., which is an accredited investor, pursuant to which we will issue and sell up to an aggregate of 1,111,111 shares, referred to herein as the Shares, of our common stock at $0.90 per share and each of a Series A warrant, referred to herein as the Partlet Series A Warrant, and a Series B warrant, referred to herein as the Partlet Series B Warrant, (collectively the Partlet Series A Warrant and Partlet Series B Warrant shall be referred to herein as the Partlet Warrants).

The Partlet Series A Warrant entitles the holder to purchase 1,000,000 shares of our common stock at $0.01 per warrant share. The Partlet Series A Warrant has a term of seven years and is exercisable immediately after the date of grant.

The Partlet Series B Warrant entitles the holder to purchase 2,055,555 shares of our common stock at $0.60 per warrant share. The Partlet Series B Warrant has a term of seven years and is not exercisable until after the six-month anniversary after the date of grant.

On July 9, 2009, we closed on $950,000 of aggregate proceeds of the private placement and, on that date, issued (i) a total of 1,055,555 Shares (ii) a Partlet Series A Warrant to purchase 950,000 shares of our common stock and (iii) a Partlet Series B Warrant to purchase 1,952,778 shares of our common stock. On September 22, 2009 we received stockholder approval to close on the remaining $50,000 in proceeds and will close on that amount upon receiving approval from the NYSE Amex Exchange.

Transaction with Each of Robert and Tim Forbes

On July 29, 2009, we entered into a Securities Purchase Agreement, referred to herein as the Forbes Securities Purchase Agreement, with each of Robert Forbes and Timothy Forbes, each of whom is an accredited investor, pursuant to which, subject to stockholder approval, it is anticipated that we will issue and sell an aggregate of 444,444 shares of common stock at $0.90, referred to herein as the Shares, per share and each of a Series A warrant, referred to herein as the Forbes Series A Warrants, and a Series B warrant, referred to herein as the Forbes Series B Warrants. Each of Robert Forbes and Timothy Forbes are the brothers of Christopher Forbes who is a director of Senesco. Mr. Christopher Forbes will not be deemed to be the beneficial owner of, nor will he have a pecuniary interest in the Shares or Warrants issued to his brothers.

The Forbes Series A Warrants entitle the holders to purchase, in the aggregate, up to 400,000 shares of our common stock at $0.01 per warrant share. The Forbes Series A Warrants have a term of seven years and are exercisable immediately after the date of grant.

The Forbes Series B Warrants entitle the holders to purchase, in the aggregate, up to 405,556 shares of our common stock at $0.60 per warrant share. The Forbes Series B Warrants have a term of seven years and are not exercisable until after the six-month anniversary after the date of grant.

On September 22, 2009 we received stockholder approval to close on the Forbes Securities Purchase Agreements and will close on the Forbes Securities Purchase Agreements upon receiving approval from the NYSE Amex Exchange.

Transaction with Insiders and Affiliates

On July 29, 2009, we entered into a Securities Purchase Agreement, referred to herein as the Affiliate's Securities Purchase Agreement with each of Harlan W. Waksal, M.D., Rudolf Stalder, Christopher Forbes, David Rector, John N. Braca, Jack Van Hulst, Warren Isabelle and the Thomas C. Quick Charitable Foundation, referred to herein as the Affiliate Investors. each of whom is an accredited investor, pursuant to which, subject to stockholder approval, it is anticipated that we will issue and sell an aggregate of 144,444 Shares of our common stock at $0.90 per share and each of a Series A warrant, referred to herein as the Affiliate's Series A Warrants, and a Series B warrant, referred to herein as the Affiliate's Series B Warrants. Each of Harlan W. Waksal, M.D., Rudolf Stalder, Christopher Forbes, David Rector, John N. Braca, Jack Van Hulst and Warren Isabelle serve on the Company's board. The Thomas C. Quick Charitable Foundation is an affiliate of our board member Thomas C. Quick.

The Affiliate's Series A Warrants entitle the holders to purchase in the aggregate, up to 130,000 shares of our common stock at $0.01 per warrant share. The Affiliates Series A Warrants have a term of seven years and are exercisable immediately after the date of grant.

The Affiliate's Series B Warrants entitle the holders to purchase, in the aggregate, up to 131,807 shares of our common stock at $0.60 per warrant share. The Affiliate's Series B Warrants have a term of seven years and are not exercisable until after the six-month anniversary after the date of grant.

On September 22, 2009 we received stockholder approval to close on the Affiliate's Securities Purchase Agreements and will close on the Affiliates Securities Purchase Agreements upon receiving approval from the NYSE Amex Exchange.

Transaction with Cato Research Ltd.

On July 29, 2009, we entered into a Securities Agreement with Cato Holding Company, referred to herein as Cato, who is an accredited investor, pursuant to which, subject to stockholder approval, it is anticipated that we will issue an aggregate of 194,444 Shares of the Company's common stock at $0.90 per share and each of a Series A warrant, referred to herein as the Cato Series A Warrant, and a Series B warrant, referred to herein as the Cato Series B Warrant. The Shares will be issued to Cato in exchange for amounts currently owed by us to Cato Research Ltd. in the amount of $175,000. Cato Research Ltd. is an affiliate of Cato.

The Cato Series A Warrant entitles the holder to purchase in the aggregate, up to 175,000 shares of our common stock at $0.01 per warrant share. The Cato Series A Warrant has a term of seven years and is exercisable immediately after the date of grant.

The Cato Series B Warrant entitles the holder to purchase, in the aggregate, up to 177,431 shares of our common stock at $0.60 per warrant share. The Cato Series B Warrant has a term of seven years and is not exercisable until after the six-month anniversary after the date of grant.

The foregoing proceeds cannot be closed upon until we receive approval for the transactions from the NYSE AMEX Exchange and comply with other customary closing conditions. Assuming all of the proceeds of the private placements can be closed upon, we anticipate that we will receive gross proceeds equal to $705,000.

Transactions with YA Global and Stanford

On August 1, 2007 and August 29, 2007, we entered into binding Securities Purchase Agreements with YA Global and Stanford to sell to each of YA Global and Stanford up to $5,000,000 of secured convertible notes and accompanying warrants for an aggregate gross proceeds of $10,000,000. The convertible notes convert into our common stock at a fixed price of $0.90 per share subject to certain adjustments, referred to herein as the Fixed Conversion Price, for a period of two years immediately following the signing date. After the second anniversary of the signing date, the convertible notes may convert into shares of our common stock at the lower of the fixed conversion price or 80% of the lowest daily volume-weighted average price, referred to herein as the VWAP, of our common stock during the five trading days prior to the conversion date. The maturity date of each of the convertible notes for YA Global is December 30, 2010. The maturity date of each of the convertible notes for Stanford is December 31, 2010. At the fixed conversion price, the number of shares of common stock issuable upon conversion of the $10,000,000 of convertible notes and shares of common stock to be issued upon exercise of the warrants represents, in the aggregate, 24,994,444 shares, plus an estimated additional 2,000,000 shares for the payment of interest in stock under the convertible notes.

The convertible notes accrue interest on their outstanding principal balances at an annual rate of 8%. We have the option to pay interest in cash or, upon certain conditions, common stock. If we pay interest in our 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, referred to herein as the Interest Shares.

At our option, we 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 our 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 our common stock that will be issued under the redemption or (B) we redeem a portion, or all, of the principal owed at a 20% premium above the principal then outstanding and any accrued interest thereupon. If we redeem all or any of the principal outstanding under the convertible notes, we 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 freely tradable under rule 144, we will have the option to force the investors to convert 50% and 100% of our then-outstanding convertible notes if our 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, referred to herein as the Call Option. If we exercise our Call Option prior to the third anniversary of the signing date, we will issue additional warrants to the investors equal to 50% of the number of shares underlying the convertible notes 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.

Our obligations under the convertible notes are secured by all of our and our subsidiary's assets and intellectual property, as evidenced by the Security Agreements and the Patent Security Agreements. Pursuant to a subordination agreement, YA Global is the senior secured creditor.

We have issued warrants to purchase an aggregate of 5,550,000 shares of our common stock to YA Global and warrants to purchase an aggregate of 8,333,333 of our common stock to Stanford. Such warrants are exercisable six months and one day from the date of issuance until their expiration on the date that is five years from the date of issuance. The warrants have been issued in two series. The exercise price of the Series A warrants is $1.01 per share, and the exercise price of the Series B warrants is $0.90 per share, subject to certain adjustments. The warrants provide a right of cashless exercise if, at the time of exercise, there is no effective registration statement registering the resale of the shares underlying the warrants.

The conversion rate of each convertible note and the exercise price of the Series B warrants are subject to adjustment for certain events, including dividends, stock splits, combinations and the sale of our common stock or securities convertible into or exercisable for our 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 our capital stock for so long as a portion of the convertible notes are outstanding.

The total gross proceeds from the issuance of the convertible notes and warrants is $10,000,000 before payment of 3.25% of the purchase price in commissions to Wainwright & Co., Inc., referred to herein as the Placement Agent. We have issued to the Placement Agent warrants to purchase 7% of the purchase price, or 777,777 shares, of our common stock with similar terms to the warrants that have been and will be issued to the investors. We have paid YA Global and Stanford a non-refundable structuring/due diligence fee of $30,000 each. We have also paid YA Global a commitment fee of 5% and Stanford a commitment fee of 7% of their respective purchase prices.

Specifics of YA Global Financing

Pursuant to the YA Global Securities Purchase Agreement, we have issued three convertible notes in the aggregate amount of $5,000,000 and two Series A warrants in the amount of 1,387,500 shares each on September 21, 2007 and October 16, 2007 and a Series B warrant in the amount of 2,775,000 shares on December 20, 2007. Through September 22, 2009, YA Global has converted $1,198,400 of the convertible notes into 2,310,844 shares of our common stock.

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 our common stock that can be issued upon the conversion of the convertible notes and the exercise of the warrants.

Specifics of Stanford Financing

Pursuant to the YA Global Securities Purchase Agreement, we have issued three convertible notes in the aggregate amount of $5,000,000 and Series A warrants in the aggregate amount of 4,166,666 shares and Series B warrants in the aggregate amount of 4,166,667 shares each on December 20, 2007 and June 30, 2008.

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

The costs associated with the issuances to YA Global and Stanford in the amount of $1,291,427, $639,645 of which represent the black-scholes value of the warrants issued to the placement agent, have been recorded as deferred financing costs and are being amortized ratably over the term of the convertible notes.

We plan to use the proceeds of the foregoing financings for funding our research and development and for general corporate purposes.

PERFORMANCE GRAPH

The following graph compares the cumulative total stockholder return on our common stock with the cumulative total return on the NYSE Amex Market Value (U.S.) Index and the RDG Microcap Biotechnology Index for the period beginning July 1, 2004 and ending on the last day of our last completed fiscal year. The stock performance shown on the graph below is not indicative of future price performance.

	7/1/04	6/30/05	6/30/06	6/30/07	6/30/08	6/30/09
Senesco Technologies, Inc.	$ 100.00	$ 56.83	$ 60.32	$ 36.51	$ 58.73	$ 26.35
NYSE Amex Composite Index	$ 100.00	$ 131.88	$ 164.58	$ 205.93	$ 204.46	$ 151.95
RDG Microcap Biotechnology Index	$ 100.00	$ 76.14	$ 62.90	$ 42.63	$ 22.12	$ 15.62

The information in the performance graph is not deemed to be “soliciting material” or to be “filed” with the Securities and Exchange Commission, nor shall such information be incorporated by reference into any future filing under the Securities Act of 1933 or Securities Exchange act of 1934, each as amended, except to the extent that we specifically incorporate it by reference into such filing.

Item 6.Selected Financial Data.

The following Selected Financial Data should be read in conjunction with “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations” and “Item 8. Financial Statements and Supplementary Data” included elsewhere in this Annual Report on Form 10-K.

SELECTED FINANCIAL DATA

	Year Ended June 30,				
	2009	2008	2007	2006	2005
	(In thousands, except per share data)				
Statement of Operations Data:					
Revenue	$ 275	$ 457	$ 300	$ 67	$ 125
Operating expenses:					
General and administrative	2,206	2,291	2,413	1,920	2,030
Research and development	2,354	1,765	1,208	1,566	1,417
Total operating expenses	4,560	4,056	3,621	3,486	3,447
Loss from operations	(4,285)	(3,599)	(3,321)	(3,419)	(3,322)
Noncash income	-	-	-	-	136
Sale of state income tax loss - net	-	-	-	-	153
Amortization of debt discount and financing costs	(478)	(668)	-	-	-
Interest expense – convertible notes	(1,007)	(434)	-	-	-
Interest income, net	43	100	69	104	54
Net loss	$ (5,727)	$ (4,601)	$ (3,252)	$ (3,315)	$ (2,979)
Basic and diluted net loss per common share	$ (.30)	$ (.26)	$ (.19)	$ (.21)	$ (.21)
Basic and diluted weighted average number of common shares outstanding	18,888	17,660	16,917	15,469	14,054
Balance Sheet Data:					
Cash, cash equivalents and investments	$ 1,431	$ 6,176	$ 658	$ 1,168	$ 4,481
Working capital	1,259	5,673	259	859	3,959
Total assets	7,122	10,643	3,322	3,535	6,113
Accumulated deficit	(35,950)	(30,223)	(25,622)	(22,370)	(19,055)
Total stockholders’ equity	5,668	9,836	2,690	2,952	5,590

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations.

The discussion in "Management's Discussion and Analysis of Financial Condition and Results of Operations" contains trend analysis, estimates and other forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. These forward-looking statements include, without limitation, statements containing the words "believes," "anticipates," "expects," "continue," and other words of similar import or the negative of those terms or expressions. Such forward-looking statements are subject to known and unknown risks, uncertainties, estimates and other factors that may cause our actual results, performance or achievements, or industry results, to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements. Actual results could differ materially from those set forth in such forward-looking statements as a result of, but not limited to, the "Risk Factors" described in Part I, Item 1A. You should read the following discussion and analysis along with the "Selected Financial Data" and the financial statements and notes attached to those statements included elsewhere in this report.

Overview

We are a development stage company. We do not expect to generate significant revenues for approximately the next one to three years, during which time we will engage in significant research and development efforts. However, we have eight active agricultural license agreements to develop and commercialize our technology in corn, soy, cotton, rice, canola, trees, alfalfa, bedding plants, turf grass, and ethanol. Seven of the licenses provide for upfront payments, milestone payments and royalty payments to us upon commercial introduction. The ethanol license provides for annual payments for each of the licensee's ethanol production facilities that incorporates our technology. We also have entered into a joint venture to develop and commercialize our technology in banana plants. In connection with the joint venture, we will receive 50% of the profits from the sale of enhanced banana plants.

Consistent with our commercialization strategy, we intend to license our technology for additional crops, as the opportunities may arise, that may result in additional license fees, revenues from contract research and other related revenues. Successful future operations will depend on our and our partners' ability to transform our research and development activities into a commercially feasible technology.

We plan to employ the same partnering strategy in both the human health and agricultural target markets.

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 performed by approximately thirteen third party researchers at our direction, at the University of Waterloo, Mayo Clinic and the University of Virginia.

Our primary human health initiative 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 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 and have contracted with a third party laboratory to conduct toxicology studies, Together with the assistance of our CRO, we will have the 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 the review and consideration in order to initiate a clinical trial. We estimate that it will take approximately fifteen (15) months from June 30, 2009 to complete these objectives.

Our preclinical human health 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 for our technology.

Critical Accounting Policies and Estimates

Revenue Recognition

We record revenue under technology license and development agreements related to the following. Actual fees received may vary from the recorded estimated revenues.

- Nonrefundable upfront license fees that are received in exchange for the transfer of our technology to licensees, for which no further obligations to the licensee exist with respect to the basic technology transferred, are recognized as revenue on the earlier of when payments are received or collections are assured.
- Nonrefundable upfront license fees that are received in connection with agreements that include time-based payments are, together with the time-based payments, deferred and amortized ratably over the estimated research period of the license.
- Milestone payments, which are contingent upon the achievement of certain research goals, are recognized as revenue when the milestones, as defined in the particular agreement, are achieved.

The effect of any change in revenues from technology license and development agreements would be reflected in revenues in the period such determination was made. Historically, no such adjustments have been made.

Estimates of Expenses

Our research and development agreements with third parties provide for an estimate of our expenses and costs, which are variable and are based on the actual services performed by the third party. We estimate the aggregate amount of the expenses based upon the projected amounts that are set forth in the agreements, and we accrue the expenses for which we have not yet been invoiced. In estimating the expenses, we consider, among other things, the following factors:

- the existence of any prior relationship between us and the third party provider;
- the past results of prior research and development services performed by the third party provider; and
- the scope and timing of the research and development services set forth in the agreement with the third party provider.

After the research services are performed and we are invoiced, we make any adjustments that are necessary to accurately report research and development expense for the period.

Valuation Allowances and Carrying Values

We have recorded valuation allowances against our entire deferred tax assets of $11,520,000 at June 30, 2009 and $9,152,000 at June 30, 2008. The valuation allowances relate primarily to the net operating loss carryforward deferred tax asset where the tax benefit of such asset is not assured.

As of June 30, 2009 and 2008, we have determined that the estimated future discounted cash flows related to our patent applications will be sufficient to recover their carrying value.

We have determined that we are receiving the economic benefit of the agricultural patent applications as well as all of the issued patents and are amortizing the agricultural patent application costs and all of the issued patents over seventeen years on a straight-line basis.

We do not have any off-balance sheet arrangements.

Stock-Based Compensation

The fair value of each stock option and warrant is estimated on the date of grant using the Black-Scholes option-pricing model. Expected volatility is based on the historical volatility of our stock and of similar companies. The expected term of stock options and warrants granted is based upon the simplified method whereby expected term is calculated using the weighted average term of the vesting period of such options and warrants. The expected term is calculated for and applied to all groups of stock options and warrants as we do not expect substantially different exercise or post-vesting termination behavior amongst our employee population. The risk-free rate of stock options is based on the U.S. Treasury rate in effect at the time of grant for the expected term of the stock options and warrants. Expected forfeitures are based on historical data.

In connection with our Short-Term and Long-Term incentive plans, our management reviews the specific goals of such plans to determine if such goals have been achieved or are probable that they will be achieved. If the goals have been achieved or are probable of being achieved, then the amount of compensation expense determined on the date of grant related to those specific goals is charged to compensation expense at such time.

Convertible Notes

During the year ended June 30, 2008, we issued convertible notes and warrants for gross proceeds in the amount of $10,000,000. The proceeds have been allocated between convertible notes and warrants based upon their fair values, whereby the fair value of the warrants have been determined using the Black-Scholes model. The remaining amounts were allocated to the beneficial conversion feature based upon the effective conversion price compared to the fair value of the common stock on the date of issuance of the convertible notes and warrants. As such, all of the proceeds of the convertible notes and warrants were recorded as equity. The convertible notes are being amortized to interest expense using the effective yield method over the term of the notes.

Research Program

We do not expect to generate significant revenues for approximately the next one to three years, during which time we will engage in significant research and development efforts. We expect to spend significant amounts on the research and development of our technology. We also expect our research and development costs to increase as we continue to develop and ultimately commercialize our technology. However, the successful development and commercialization of our technology is highly uncertain. We cannot reasonably estimate or know the nature, timing and expenses of the efforts necessary to complete the development of our technology, or the period in which material net cash inflows may commence from the commercialization of our technology, including the uncertainty of:

- the scope, rate of progress and expense of our research activities;
- the interim results of our research;
- the expense of additional research that may be required after review of the interim results;
- the terms and timing of any collaborative, licensing and other arrangements that we may establish;
- the expense and timing of regulatory approvals;
- the effect of competing technological and market developments; and
- the expense of filing, prosecuting, defending and enforcing any patent claims or other intellectual property rights.

Liquidity and Capital Resources

Overview

As of June 30, 2009, our cash balance and investments totaled $1,430,569, and we had working capital of $1,259,300. In addition, upon the closing of our private equity financing on July 9, 2009, we received aggregate net proceeds of approximately $900,000. As of June 30, 2009, we had a federal tax loss carryforward of approximately $25,582,000 and a state tax loss carry-forward of approximately $19,219,000 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 June 30, 2009:

	Payments Due by Period				
Contractual Obligations	Total	Less than 1 year	1 - 3 years	4 - 5 years	More than 5 years
Research and Development Agreements (1)	$ 1,702,050	$ 1,702,050	$ —	$ —	$ —
Facility, Rent and Operating Leases (2)	$ 152,989	$ 79,420	$ 73,569	$ —	$ —
Employment, Consulting and Scientific Advisory Board Agreements (3)	$ 531,970	$ 519,264	$ 12,706	$ —	$ —
Total Contractual Cash Obligations	$ 2,387,009	$ 2,300,734	$ 86,275	$ —	$ —

(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.

We expect our capital requirements to increase significantly over the next several years as we commence new research and development efforts, increase our business and administrative infrastructure and embark on developing in-house business capabilities and facilities. 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, 2009, we extended our research and development agreement with the University of Waterloo for an additional one-year period through August 31, 2010, in the amount of CAD $650,400 or approximately USD $650,400, which is not included in the above table of contractual obligations. Research and development expenses under this agreement aggregated $653,104 for the year ended June 30, 2009 and USD $730,960 for the year ended June 30, 2008 and USD $5,280,368 for the cumulative period from inception through June 30, 2009. Total research and development expenses aggregated $2,353,962 for the year ended June 30, 2009 and $1,764,426 for the year ended June 30, 2008 and $12,311,557 for the cumulative period from inception through June 30, 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 at least the next one to three years, 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.

License Agreements

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 license 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 license 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.

Financing

As discussed in Part II, Item 5, Recent Sales of Unregistered Securities, in this Annual Report on Form 10-K:

- On July 9, 2009, we entered into a Securities Purchase Agreement with Partlet Holdings Ltd., for the issuance of common stock and warrants for gross proceeds of $1,000,000.
- On July 29, 2009, we entered into Securities Purchase Agreements with each of Robert Forbes, Timothy Forbes and certain insiders and affiliates for the issuance of common stock and warrants for an aggregate gross proceeds of $530,000.
- On July 29, 2009, we entered into a Securities Purchase Agreement with Cato Holding Company for the issuance of common stock and warrants in exchange for amounts currently owed by us to Cato Research Ltd in the amount of $175,000.
- On August 1, 2007 and August 29, 2007, we entered into binding Securities Purchase Agreements with YA Global and Stanford and have sold to each of YA9 Global and Stanford $5,000,000 of secured convertible notes and accompanying warrants for aggregate gross proceeds in the amount of $10,000,000.

We anticipate that, based upon our current cash and investments and the proceeds from the above mentioned financings, we will be able to fund our operations for the next six (6) months from June 30, 2009. Over the next twelve months from June 30, 2009, 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 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.

Results of Operations

Fiscal Years ended June 30, 2008, 2007 and 2006

Revenue

Total revenues consisted of initial fees and milestone payments on our agricultural development and license agreements. During the fiscal year ended June 30, 2009, we earned revenue in the amount of $275,000, which consisted of milestone payments in connection with certain agricultural license agreements. During the fiscal year ended June 30, 2008, we earned revenue in the amount of $456,667, which consisted of the initial payments and the amortized portion of previous milestone payments received in connection with certain agricultural license agreements. During the year ended June 30, 2007, we earned revenue in the amount of $300,000 consisted of current milestone payments and the amortized portion of previous milestone payments 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

	Year Ended June 30,							
	2009	2008	Change	%	2008	2007	Change	%
	(In thousands, except % values)							
General and administrative	$ 2,206	$ 2,291	$ (85)	(4) %	$ 2,291	$ 2,413	$ (122)	(5)%
Research and development	2,354	1,765	589	33%	1,765	1,208	557	46%
Total operating expenses	$ 4,560	$ 4,056	$ 504	12%	$ 4,056	$ 3,621	$ 435	12%

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

General and administrative expenses

General and administrative expenses consist of the following:

	Year ended June 30,		
	2009	2008	2007
	(In thousands)		
Share-based compensation	$ 445	$ 749	$ 910
Payroll and benefits	690	669	616
Investor relations	245	305	278
Professional fees	416	261	217
Depreciation and amortization	112	97	166
Other general and administrative expenses	298	210	226
Total general and administrative expenses	$ 2,206	$ 2,291	$ 2,413

- Share-based compensation for Fiscal 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. During Fiscal 2009 and 2008, the following options, warrants and restricted stock units were granted:

	Fiscal 2009	Fiscal 2008
Options	834,812	1,069,600
Warrants	500	1,000
Restricted Stock Units	136,000	337,700

Additionally, during Fiscal 2008, 1,500,000 warrants were extended and repriced in connection with a financial advisory agreement.

Share-based compensation was lower in Fiscal 2009 primarily due to the extension and repricing of warrants in connection with the financial advisory agreement in fiscal 2008 The Black-Scholes value of the extension and repricing of warrants amounted to $385 in Fiscal 2008.

Share-based compensation was lower in Fiscal 2008 due to the extension and repricing of warrants in connection with a financial advisory agreement. The Black-Scholes value of the extension and repricing of warrants amounted to $385 in Fiscal 2008 compared to $683 in Fiscal 2007. This was partially offset by an increase in the Black-Scholes value of the options and warrants granted during Fiscal 2008 compared to the Black-Scholes value of the options and warrants granted during Fiscal 2007 because we granted more options during Fiscal 2008.

- Payroll and benefits increased primarily as a result of salary and health insurance rate increases.

- Investor relations expense for Fiscal 2009 is lower than Fiscal 2008 primarily as a result of a decrease in the cost of the annual report and investor relations consulting costs.

Investor relations expense for Fiscal 2008 is higher than Fiscal 2007 primarily as a result of an increase in the cost of the annual report due to the inclusion of additional disclosures and the services of a proxy solicitor.

- Professional fees increased during Fiscal 2009 compared to Fiscal 2008 primarily as a result of an increase in accounting and legal fees. Legal fees increased primarily due to our multiple myeloma project and employee compensation review. Accounting and legal fees also increased primarily due to the review and filing of our securities filings.

- Professional fees increased during Fiscal 2008 compared to Fiscal 2007 primarily as a result of an increase in accounting and legal fees in connection with the additional disclosure included in the annual report.

- Depreciation and amortization increased during Fiscal 2009 compared to Fiscal 2008 primarily as a result of an increase in amortization of patent costs. .

- Depreciation and amortization decreased during Fiscal 2008 compared to Fiscal 2007 primarily as a result of a decrease in amortization of patent costs. During Fiscal 2008, we did not amortize the cost of our human health pending patent applications.

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

Research and development expenses

	Year Ended June 30,							
	2009	2008	Change	%	2008	2007	Change	%
	(In thousands, except % values)							
Stock-based compensation	$ 62	$ 148	$ (86)	(58)%	$ 148	$ 60	$ 88	147%
Other research and development	2,292	1,617	675	38%	1,617	1,148	469	41%
Total research and development	$ 2,354	$ 1,765	$ 589	33%	$ 1,765	$ 1,208	$ 557	46%

- Stock-based compensation decreased during Fiscal 2009 compared to Fiscal 2008 primarily because the Black-Scholes calculated fair value of the options and warrants granted during Fiscal 2009 were lower than Fiscal 2008 because the number of options granted were lower in Fiscal 2009.

- Stock-based compensation increased during Fiscal 2008 compared to Fiscal 2007 primarily because the Black-Scholes calculated fair value of the options and warrants granted during Fiscal 2008 were higher than Fiscal 2007 because the number of options granted were higher in Fiscal 2008.

- Other research and development costs increased during Fiscal 2009 compared to Fiscal 2008 primarily as a result of the expansion of our human health programs, specifically our multiple myeloma project, 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. .

- Other research and development costs increased during Fiscal 2008 compared to Fiscal 2007 primarily as a result of the initiation of our multiple myeloma project during Fiscal 2008. Additionally, the budget in connection with the research agreement with the University of Waterloo was increased and the U.S. dollar was weaker against the Canadian dollar.

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

	Year ended June 30,					
	2009	%	2008	%	2007	%
	(In thousands, except % values)					
Agricultural research programs	$ 618	26%	$ 771	44%	$ 701	58%
Human health research programs	1,736	74%	994	56%	507	42%
Total research and development expenses	$ 2,354	100%	$ 1,765	100%	$ 1,208	100%

- Agricultural research expenses decreased during Fiscal 2009 compared to Fiscal 2008 primarily as a result of a decrease in the allocation of resources from agriculture to human health at the University of Waterloo and the strengthening of the U.S. dollar against the Canadian dollar.

- Agricultural research expenses increased during Fiscal 2008 compared to Fiscal 2007 primarily as a result of an increase in the budget in connection with our research agreement at the University of Waterloo, an increase in stock-based compensation, and the U.S. dollar was weaker against the Canadian dollar.

- Human health research expenses increased during Fiscal 2009 compared to Fiscal 2008 primarily as a result of the ongoing multiple myeloma project.

- Human health research expenses increased during Fiscal 2008 compared to Fiscal 2007 primarily as a result of the initiation of the multiple myeloma project.

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

Amortization of debt discount and financing costs

During Fiscal 2008, we issued $10,000,000 of convertible notes and warrants. 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 amortized on a straight line basis over the term of the convertible notes. As of June 30, 2009 there were $9,455,000 of convertible notes outstanding. As of June 30, 2008, there were $9,500,000 of the convertible notes outstanding.

Interest expense – convertible notes

Interest expense – convertible notes represents the fair value of the common stock issued in lieu of paying cash for the 8% coupon rate of interest related to the convertible notes issued during Fiscal 2008.

Interest income

	Year Ended June 30,								
	2007	2008	Change	%	2008	2007	Change	%	
	(In thousands, except % values)								
Interest income	$ 43	$ 100	$ (57)	(57)%	$ 100	$ 69	$ 31	45%	

The decrease in interest income for Fiscal 2009 compared to Fiscal 2008 is due to a lower average cash and investments balance during the year as well as lower interest rates.

The increase in interest income for Fiscal 2008 compared to Fiscal 2007 is due to a higher average cash and investments balance during the year.

From Inception on July 1, 1998 through June 30, 2009

From inception of operations on July 1, 1998 through June 30, 2009, we earned revenues in the amount 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 at least the next one to three years, during which time we will engage in significant research and development efforts.

We have incurred losses each year since inception and have an accumulated deficit of $35,949,899 at June 30, 2009. We expect to continue to incur losses as a result of expenditures on research, product development and administrative activities.

Item 7A. 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 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.

Item 8. Financial Statements and Supplementary Data.

The financial statements required to be filed pursuant to this Item 8 are included in this Annual Report on Form 10-K. A list of the financial statements filed herewith is found at "Item 15. Exhibits, Financial Statement Schedules."

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.

None.

Item 9A. Controls and Procedures.

Disclosure Controls and Procedures

Our management, with the participation of our chief executive officer and chief financial officer, evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) as of the end of the period covered by this Annual Report on Form 10-K. Based on this evaluation, our chief executive officer and chief financial officer have concluded that, as of the end of such period, our disclosure controls and procedures were effective.

Internal Control Over Financial Reporting

Management's Annual Report on Internal Control Over Financial Reporting

Our company’s management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act as a process designed by, or under the supervision of, our company’s principle executive and principal financial officers and effected by our company’s board of directors, management and other personnel 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 in the U.S. and includes those policies and procedures that:

- Pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of our company;
- Provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of our company are being made only in accordance with authorization of management and directors of our company; and
- Provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our company’s assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Projections of any evaluation of effectiveness to future periods are subject to the risks that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Management assessed the effectiveness of our company’s internal control over financial reporting as of June 30, 2009. In making this assessment, management used the criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission, or COSO.

Based on this assessment, management has concluded that, as of June 30, 2009 our company's internal control over financial reporting is effective.

Management's report was not subject to attestation by the company's registered public accounting firm pursuant to temporary rules of the Securities and Exchange Commission that permit the Company to provide only management's report in this annual report.

Changes in Internal Controls Over Financial Reporting

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 fiscal year ended June 30, 2009 that has materially affected, or is reasonably likely to materially affect, our internal controls over financial reporting.

Item 9B. Other Information.

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

The information relating to our directors, nominees for election as directors and executive officers under the headings "Election of Directors" and "Executive Officers" in our definitive proxy statement for the 2009 Annual Meeting of Stockholders is incorporated herein by reference to such proxy statement.

Item 11. Executive Compensation.

The discussion under the heading "Executive Compensation" in our definitive proxy statement for the 2009 Annual Meeting of Stockholders is incorporated herein by reference to such proxy statement.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

The discussion under the heading "Security Ownership of Certain Beneficial Owners and Management" in our definitive proxy statement for the 2009 Annual Meeting of Stockholders is incorporated herein by reference to such proxy statement.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

The discussion under the heading "Certain Relationships and Related Transactions" in our definitive proxy statement for the 2009 Annual Meeting of Stockholders is incorporated herein by reference to such proxy statement.

Item 14. Principal Accounting Fees and Services.

The discussion under the heading "Principal Accountant Fees and Services" in our definitive proxy statement for the 2009 Annual Meeting of Stockholders is incorporated herein by reference to such proxy statement.

PART IV

Item 15. Exhibits and Financial Statement Schedules.

(a) (1) Financial Statements.

Reference is made to the Index to Financial Statements on Page F-1.

(a) (2) Financial Statement Schedules.

None.

(a) (3) Exhibits.

Reference is made to the Exhibit Index on Page 55.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized this 28th day of September 2009.

SENESCO TECHNOLOGIES, INC.

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

By: /s/ Joel Brooks
Joel Brooks, Chief Financial Officer
(principal financial and accounting
officer)

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Harlan W. Waksal, M.D Harlan W. Waksal, M.D.	Chairman and Director	September 28, 2009
/s/ Bruce C. Galton Bruce C. Galton	President and Chief Executive Officer (principal executive officer) and Director	September 28, 2009
/s/ Joel Brooks Joel Brooks	Chief Financial Officer and Treasurer (principal financial and accounting officer)	September 28, 2009
/s/ John E. Thompson John E. Thompson	Executive Vice President, Chief Scientific Officer and Director	September 28, 2009
/s/ John Braca John Braca	Director	September 28, 2009
/s/ Christopher Forbes Christopher Forbes	Director	September 28, 2009
/s/ Warren J. Isabelle Warren J. Isabelle	Director	September 28, 2009
/s/ Thomas C. Quick Thomas C. Quick	Director	September 28, 2009
/s/ David Rector David Rector	Director	September 28, 2009
/s/ Rudolf Stalder Rudolf Stalder	Director	September 28, 2009
/s/ Jack Van Hulst Jack Van Hulst	Director	September 28, 2009

EXHIBIT INDEX

Exhibit No.	Description of Exhibit
2.1	Merger Agreement and Plan of Merger by and among Nava Leisure USA, Inc., an Idaho corporation, the Principal Stockholders (as defined therein), Nava Leisure Acquisition Corp., and Senesco, Inc., dated October 9, 1998. (Incorporated by reference to Senesco Technologies, Inc. definitive proxy statement on Schedule 14A dated January 11, 1999.)
2.2	Merger Agreement and Plan of Merger by and between Senesco Technologies, Inc., an Idaho corporation, and Senesco Technologies, Inc., a Delaware corporation, dated September 30, 1999. (Incorporated by reference to Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended September 30, 1999.)
3.1	Amended and Restated Certificate of Incorporation of Senesco Technologies, Inc. filed with the State of Delaware on January 22, 2007. (Incorporated by reference to Senesco Technologies, Inc. quarterly report on Form 10-Q for the period ended December 31, 2006.)
3.2	Certificate of Amendment to the Amended and Restated Certificate of Incorporation of Senesco Technologies, Inc. filed with the State of Delaware on January 22, 2008. (Incorporated by reference to Exhibit 3.1 of Senesco Technologies, Inc. quarterly report on Form 10-Q for the period ended December 31, 2007.)
3.3 †	Certificate of Amendment to the Amended and Restated Certificate of Incorporation of Senesco Technologies, Inc. filed with the State of Delaware on September 22, 2009.
3.4	Amended and Restated By-laws of Senesco Technologies, Inc. as adopted on October 2, 2000. (Incorporated by reference to Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended December 31, 2000.)
4.1	Form of Warrant with Parenteau Corporation. (Incorporated by reference to Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended December 31, 1999.)
4.2	Form of Warrant with Strategic Growth International, Inc. (Incorporated by reference to Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended December 31, 1999.)
4.3	Form of Warrant issued to Stanford Venture Capital Holdings, Inc. and certain officers of Stanford Venture Capital Holdings, Inc. (with attached schedule of parties and terms thereto). (Incorporated by reference to Exhibit 4.1 of Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended December 31, 2001.)
4.4	Form of Warrant issued to certain accredited investors (with attached schedule of parties and terms thereto). (Incorporated by reference to Exhibit 4.1 of Senesco Technologies, Inc. Current Report on Form 8-K, filed on May 4, 2005.)
4.5	Form of Warrant issued to Oppenheimer & Co. Inc. or its designees, dated as of May 9, 2005. (Incorporated by reference to Exhibit 4.2 of Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended March 31, 2005.)

Exhibit No.	Description of Exhibit
4.6	Form of Warrant issued to H.C. Wainwright & Co., Inc., or its designees, dated as of October 10, 2006 (Incorporated by reference to Exhibit 10.42 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2006.)
4.7	Form or Warrant issued to certain accredited investors dated October 10, 2006 (with attached schedule of parties and terms thereto). (Incorporated by reference to Exhibit 10.40 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2006.)
4.8	Form of Series A Warrant issued to YA Global Investments, L.P. (Incorporated by reference to Exhibit 4.15 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2007.)
4.9	Form of Series A Warrant issued to Stanford Venture Capital Holdings, Inc. (Incorporated by reference to Exhibit 4.16 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2007.)
4.10	Form of Debenture issued to YA Global Investments, L.P. (Incorporated by reference to Exhibit 4.17 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2007.)
4.11	Form of Debenture issued to Stanford Venture Capital Holdings, Inc. (Incorporated by reference to Exhibit 4.18 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2007.)
4.12	Form of Series B Warrant issued to YA Global Investments, L.P. (Incorporated by reference to Exhibit 4.19 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2007.)
4.13	Form of Series B Warrant issued to Stanford Venture Capital Holdings, Inc. (Incorporated by reference to Exhibit 4.20 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2007.)
4.14	Form of Warrant issued to H.C. Wainwright & Co., Inc or its designees. (Incorporated by reference to Exhibit 4.21 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30,2008.)
4.15	Form of Series A Warrant issued to Partlet Holdings Ltd. (Incorporated by reference to Exhibit 4.1 of Senesco Technologies, Inc. Current Report on Form 8-K, filed on July 10, 2009.)
4.16	Form of Series B Warrant issued to Partlet Holdings Ltd. (Incorporated by reference to Exhibit 4.1 of Senesco Technologies, Inc. Current Report on Form 8-K, filed on July 10, 2009.)
4.17	Form of Series A Warrant issued to each of Robert Forbes, Timothy Forbes, Harlan W. Waksal, M.D., Rudolf Stalder, Christopher Forbes, David Rector, John N. Braca, Jack Van Hulst, Warren Isabelle and the Thomas C. Quick Charitable Foundation. (Incorporated by reference to Exhibit 4.1 of Senesco Technologies, Inc. Current Report on Form 8-K, filed on July 30, 2009.)

Exhibit No.	Description of Exhibit
4.18	Form of Series B Warrant issued to each of Robert Forbes, Timothy Forbes, Harlan W. Waksal, M.D., Rudolf Stalder, Christopher Forbes, David Rector, John N. Braca, Jack Van Hulst, Warren Isabelle and the Thomas C. Quick Charitable Foundation. (Incorporated by reference to Exhibit 4.1 of Senesco Technologies, Inc. Current Report on Form 8-K, filed on July 30, 2009.)
4.19	Form of Series A Warrant issued to Cato Holding Company. (Incorporated by reference to Exhibit 4.1 of Senesco Technologies, Inc. Current Report on Form 8-K, filed on July 30, 2009.)
4.20	Form of Series B Warrant issued to Cato Holding Company. (Incorporated by reference to Exhibit 4.1 of Senesco Technologies, Inc. Current Report on Form 8-K, filed on July 30, 2009.)
10.1	Indemnification Agreement by and between Senesco Technologies, Inc. and Christopher Forbes, dated January 21, 1999. (Incorporated by reference to Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended December 31, 1998.)
10.2	Indemnification Agreement by and between Senesco Technologies, Inc. and Thomas C. Quick, dated February 23, 1999. (Incorporated by reference to Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended March 31, 1999.)
10.3	Indemnification Agreement by and between Senesco Technologies, Inc. and Ruedi Stalder, dated March 1, 1999. (Incorporated by reference to Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended March 31, 1999.)
10.4	Indemnification Agreement by and between Senesco Technologies, Inc. and Bruce C. Galton, dated October 4, 2001. (Incorporated by reference to Exhibit 10.10 of Senesco Technologies, Inc. quarterly report on Form 10-QSB for the quarterly period ended December 31, 2001.)
10.5	Indemnification Agreement by and between Senesco Technologies, Inc. and Jack Van Hulst, dated January 16, 2007. (Incorporated by reference to Exhibit 10.13 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2007)
10.6	Indemnification Agreement by and between Senesco Technologies, Inc. and John Braca, dated October 8, 2003. (Incorporated by reference to Exhibit 10.38 of Senesco Technologies, Inc. annual report on Form 10-KSB for the period ended June 30, 2004.)
10.7	Indemnification Agreement by and between Senesco Technologies, Inc. and David Rector dated as of April, 2002. (Incorporated by reference to Exhibit 10.1 of Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended September 30, 2004.)
10.8 †	Indemnification Agreement by and between Senesco Technologies, Inc. and Harlan W. Waksal, M.D. dated as of October 24, 2008.

Exhibit No.	Description of Exhibit
10.9 †	Indemnification Agreement by and between Senesco Technologies, Inc. and Warren Isabelle dated as of June 8, 2009.
10.10 *	Employment Agreement by and between Senesco, Inc. and Sascha P. Fedyszyn, dated January 21, 1999. (Incorporated by reference to Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended December 31, 1998.)
10.11 *	Employment Agreement by and between Senesco Technologies, Inc. and Bruce C. Galton, dated October 4, 2001. (Incorporated by reference to Exhibit 10.9 of Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended December 31, 2001.)
10.12 *	Employment Agreement by and between Senesco Technologies, Inc. and Joel Brooks, dated July 1, 2003. (Incorporated by reference to Exhibit 10.29 of Senesco Technologies, Inc. annual report on Form 10-KSB for the period ended June 30, 2003.)
10.13 *	Employment Agreement by and between Senesco Technologies, Inc. and Richard Dondero, dated July 19, 2004. (Incorporated by reference to Exhibit 10.39 of Senesco Technologies, Inc. annual report on Form 10-KSB for the period ended June 30, 2004.)
10.14 *	Consulting Agreement by and between Senesco Technologies, Inc. and John E. Thompson, Ph.D., dated July 12, 1999. (Incorporated by reference to Senesco Technologies, Inc. annual report on Form 10-KSB for the period ended June 30, 2000.)
10.15 *	Amendment to Consulting Agreement of July 12, 1999, as modified on February 8, 2001, by and between Senesco, Inc. and John E. Thompson, Ph.D., dated December 13, 2002. (Incorporated by reference to Exhibit 10.1 of Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended December 31, 2002.)
10.16 *	Amendment # 5 to Consulting Agreement of July 12, 1999, as modified, by and between Senesco, Inc. and John E. Thompson, Ph.D., dated June 15, 2007. (Incorporated by reference to Exhibit 10.49 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2007.)
10.17 *†	Amendment # 6 to Consulting Agreement of July 12, 1999, as modified, by and between Senesco, Inc. and John E. Thompson, Ph.D., dated June 25, 2009.
10.18 +	License Agreement by and between Senesco Technologies, Inc. and Harris Moran Seed Company, dated November 19, 2001. (Incorporated by reference to Exhibit 10.8 of Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended December 31, 2001.)
10.19 +	Development Agreement by and between Senesco Technologies, Inc. and ArborGen, LLC, dated June 28, 2002. (Incorporated by reference to Exhibit 10.31 of Senesco Technologies, Inc. annual report on Form 10-KSB for the year ended June 30, 2002.)

Exhibit No.	Description of Exhibit
10.20 +	Commercial License Agreement by and between Senesco Technologies, Inc. and ArborGen, LLC dated as of December 21, 2006. (Incorporated by reference to Senesco Technologies, Inc. quarterly report on Form 10-Q for the period ended December 31, 2006.)
10.21 +	Development and License Agreement by and between Senesco Technologies, Inc. and Calwest Seeds, dated September 14, 2002. (Incorporated by reference to Exhibit 10.1 of Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended September 30, 2002.)
10.22 +	Development and License Agreement by and between Senesco Technologies, Inc. and The Scotts Company, dated March 8, 2004. (Incorporated by reference to Exhibit 10.1 of Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended March 31, 2004.)
10.23 +	Development and License Agreement with Broin and Associates, Inc. (currently known as Poet) dated as of October 14, 2004. (Incorporated by reference to Exhibit 10.2 of Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended September 30, 2004.)
10.24 +	License Agreement by and between Senesco Technologies, Inc. and Bayer CropScience GmbH, dated as of November 8, 2006. (Incorporated by reference to Senesco Technologies, Inc. quarterly report on Form 10-Q for the quarterly period ended December 31, 2006.)
10.25 +	License Agreement with Bayer CropScience AG dated as of July 23, 2007. (Incorporated by reference to Exhibit 10.1 of Senesco Technologies, Inc. quarterly report on Form 10-Q for the period ended September 30, 2007.)
10.26 +	Patent License Agreement with Monsanto Company dated as of August 6, 2007. (Incorporated by reference to Exhibit 10.2 of Senesco Technologies, Inc. quarterly report on Form 10-Q for the period ended September 30, 2007.)
10.27 +	License Agreement with Bayer CropScience AG dated as of September 17, 2007. (Incorporated by reference to Exhibit 10.3 of Senesco Technologies, Inc. quarterly report on Form 10-Q for the period ended September 30, 2007.)
10.28	Research Agreement by and among Senesco Technologies, Inc., Dr. John E. Thompson and the University of Waterloo, dated September 1, 1998, as amended. (Incorporated by reference to Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended December 31, 1998.)
10.29	Research Agreement by and among Senesco Technologies, Inc., Dr. John E. Thompson and the University of Waterloo, dated May 1, 2002. (Incorporated by reference to Exhibit 10.29 of Senesco Technologies, Inc. annual report on Form 10-KSB for the year ended June 30, 2002.)
10.30	Amendment to Research Agreement by and among the University of Waterloo, Senesco, Inc., and Dr. John E. Thompson, Ph.D., dated August 1, 2007. (Incorporated by reference to Exhibit 10.42 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2007.)

Exhibit No.	Description of Exhibit
10.31	Amendment to Research Agreement by and among the University of Waterloo, Senesco, Inc. and Dr. John E. Thompson, Ph.D., dated August 25, 2008. (Incorporated by reference to Exhibit 10.28 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2008.)
10.32 †	Amendment to Research Agreement by and among the University of Waterloo, Senesco, Inc. and Dr. John E. Thompson, Ph.D., dated August 27, 2009.
10.33 +	Master Product Sale Agreement with VGXI, Inc. dated as of June 27, 2008. (Incorporated by reference to Exhibit 10.29 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2008.)
10.34	Master Product Sale Agreement with Polyplus-transfection dated as of June 30, 2008. (Incorporated by reference to Exhibit 10.30 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2008.)
10.35	Proposal for Manufacture and Supply by and between Avecia Biotechnology, Inc. and Senesco Technologies, Inc. dated as of September 4, 2008. (Incorporated by reference to Exhibit 10.1 of Senesco Technologies, Inc. quarterly report on Form 10-Q for the period ended September 30, 2008.)
10.36	Proposal for Biodistribution and Repeat Dose Toxicity Studies in Mice by and between BioReliance and Senesco Technologies, Inc. dated as of September 5, 2008. (Incorporated by reference to Exhibit 10.2 of Senesco Technologies, Inc. quarterly report on Form 10-Q for the period ended September 30, 2008.)
10.37	Services Agreement by and between KBI BioPharma, Inc. and Senesco Technologies, Inc. dated as of September 15, 2008. (Incorporated by reference to Exhibit 10.3 of Senesco Technologies, Inc. quarterly report on Form 10-Q for the period ended September 30, 2008.)
10.38	Agreement for Service on Senesco Technologies, Inc. Scientific Advisory Board by and between Senesco Technologies, Inc. and Dr. Charles A. Dinarello, dated February 12, 2002. (Incorporated by reference to Exhibit 10.6 of Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended March 31, 2002.)
10.39	Agreement for Service on Senesco Technologies, Inc. Scientific Advisory Board by and between Senesco Technologies, Inc. and James W. Mier, M.D., dated April 2, 2007. (Incorporated by reference to Exhibit 10.43 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2007.)
10.40	Financial Advisory Agreement by and among Senesco Technologies, Inc., Stanford Group Company, Stanford Venture Capital Holdings, Inc., Stanford International Bank, Ltd., Ronald Stein, Daniel Bogar, Osvaldo Pi and William Fusselmann dated October 11, 2006. (Incorporated by reference to Exhibit 10.35 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2006.)

Exhibit No.	Description of Exhibit
10.41	Amendment No. 1 to the financial advisory agreement by and between Stanford Group Company and Senesco Technologies, Inc., dated February 14, 2008. (Incorporated by reference to Exhibit 10.1 of Senesco Technologies, Inc. quarterly report on Form 10-Q for the period ended December 31, 2007.)
10.42	Form of Securities Purchase Agreement by and between Senesco Technologies, Inc. and certain accredited investors (with attached schedule of parties and terms thereto). (Incorporated by reference to Exhibit 10.1 of Senesco Technologies, Inc. Current Report on Form 8-K, filed on February 3, 2004.)
10.43	Amendment No. 1 to the Securities Purchase Agreement by and between Senesco Technologies, Inc. and Crestview Capital Master, L.L.C. (Incorporated by reference to Exhibit 10.1 of Senesco Technologies, Inc. Current Report on Form 8-K, filed on February 13, 2004.)
10.44	Form of Securities Purchase Agreement by and between Senesco Technologies, Inc. and certain accredited investors (with schedule of parties and terms thereto). (Incorporated by reference to Exhibit 10.1 of Senesco Technologies, Inc. Current Report on Form 8-K filed on May 4, 2005.)
10.45	Registration Rights Agreement by and among Senesco Technologies, Inc., Stanford Group Company, Stanford Venture Capital Holdings, Inc., Stanford International Bank, Ltd., Ronald Stein, Daniel Bogar, Osvaldo Pi and William Fusselmann dated October 11, 2006. (Incorporated by reference to Exhibit 10.36 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2006.)
10.46	Form of Securities Purchase Agreement by and between Senesco Technologies, Inc. and certain accredited investors dated October 10, 2006 (with attached schedule of parties and terms thereto). (Incorporated by reference to Exhibit 10.38 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2006.)
10.47	Form of Registration Rights Agreement by and between Senesco Technologies, Inc and certain accredited investors dated October 10, 2006 (with attached schedule of parties and terms thereto). (Incorporated by reference to Exhibit 10.39 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2006.)
10.48	Securities Purchase Agreement by and between Senesco Technologies, Inc. and YA Global Investments, L.P. (Incorporated by reference to Exhibit 10.44 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2007.)
10.49	Registration Rights Agreement by and between Senesco Technologies, Inc. and YA Global Investments, L.P. (Incorporated by reference to Exhibit 10.45 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2007.)
10.50	Securities Purchase Agreement by and between Senesco Technologies, Inc. and Stanford Venture Capital Holdings, Inc. (Incorporated by reference to Exhibit 10.46 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2007.)
10.51	Registration Rights Agreement by and between Senesco Technologies, Inc. and Stanford Venture Capital Holdings, Inc. (Incorporated by reference to Exhibit 10.47 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2007.)

Exhibit No.	Description of Exhibit
10.52	Security Agreement dated as of September 21, 2007 by and between Senesco Technologies, Inc. and its subsidiaries and YA Global Investments, L.P. (Incorporated by reference to Exhibit 10.48 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2007.)
10.53	Security Agreement dated as of December 20, 2007 by and between Senesco Technologies, Inc. and its subsidiaries and Stanford Venture Capital Holdings, Inc. (Incorporated by reference to Exhibit 10.50 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2008.)
10.54	Securities Purchase Agreement by and between Senesco Technologies, Inc. and Partlet Holdings Ltd. Dated as of July 9, 2009. (Incorporated by reference to Exhibit 10.1 of Senesco Technologies, Inc. Current Report on Form 8-K, filed on July 10, 2009.)
10.55	Securities Purchase Agreement by and between Senesco Technologies, Inc. and each of Robert Forbes, Timothy Forbes, Harlan W. Waksal, M.D., Rudolf Stalder, Christopher Forbes, David Rector, John N. Braca, Jack Van Hulst, Warren Isabelle and the Thomas C. Quick Charitable Foundation dated as of July 29, 2009. (Incorporated by reference to Exhibit 10.1 of Senesco Technologies, Inc. Current Report on Form 8-K , filed on July 30, 2009.)
10.56	Securities Purchase Agreement by and between Senesco Technologies, Inc. and Cato Holding Company dated as of July 29, 2009. (Incorporated by reference to Exhibit 10.2 of Senesco Technologies, Inc. Current Report on Form 8-K , filed on July 30, 2009.)
10.57	Office lease by and between Senesco Technologies, Inc. and Matrix/AEW NB, LLC, dated March 16, 2001. (Incorporated by reference to Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended March 31, 2001.)
10.58	First amendment of office lease by and between Senesco Technologies, Inc. and Matrix/AEW NB, LLC, dated May 13, 2005 (Incorporated by reference to Exhibit 10.8 of Senesco Technologies, Inc annual report on Form 10-KSB for the period ended June 30, 2005.)
10.59 *	1998 Stock Incentive Plan, as amended on December 13, 2002. (Incorporated by reference to Exhibit 10.7 of Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended December 31, 2002.)
10.60*	Senesco Technologies, Inc. 2008 Incentive Compensation Plan. (Incorporated by reference to Exhibit 10.1 of Senesco Technologies, Inc. quarterly report on Form 10-Q for the period ended December 31, 2008.)

Exhibit No.	Description of Exhibit
21	Subsidiaries of the Registrant. (Incorporated by reference to Senesco Technologies, Inc. annual report on Form 10-KSB for the period ended June 30, 1999.)
23.1 †	Consent of Goldstein Golub Kessler LLP.
23.2 †	Consent of McGladrey & Pullen, LLP.
31.1 †	Certification of the principal executive officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2 †	Certification of the principal financial and accounting officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1 †	Certification of the principal executive officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2 †	Certification of the principal financial and accounting officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

* A management contract or compensatory plan or arrangement required to be filed as an exhibit pursuant to Item 13(a) of Form 10-K.

† Filed herewith.

+ The SEC granted Confidential Treatment for portions of this Exhibit.

SENESCO TECHNOLOGIES, INC.
AND SUBSIDIARY
(a development stage company)

CONSOLIDATED FINANCIAL STATEMENTS

JUNE 30, 2009

SENESCO TECHNOLOGIES, INC. AND SUBSIDIARY
(a development stage company)

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders
Senesco Technologies, Inc.

We have audited the accompanying consolidated balance sheet of Senesco Technologies, Inc. and Subsidiary (a development stage company) as of June 30, 2009 and June 30, 2008, and the related consolidated statements of operations, stockholders' equity and cash flows for the years then ended and cumulative amounts from July 1, 1998 (inception) to June 30, 2009. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits. The financial statements for the period from July 1, 1998 (inception) to June 30, 2007 were audited by other auditors and our opinion, insofar as it relates to cumulative amounts included for such periods, is based solely on the reports of such auditors.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, based on our audits and the reports of other auditors, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Senesco Technologies, Inc. and Subsidiary as of June 30, 2009 and June 30, 2008, and the results of their operations and their cash flows for the years then ended and cumulative amounts from July 1, 1998 (inception) to June 30, 2009, in conformity with U.S. generally accepted accounting principles.

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the financial statements, the Company has suffered recurring losses from operations since inception. This raises substantial doubt about the Company's ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 1. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

We were not engaged to examine management’s assertion about the effectiveness of Senesco Technologies, Inc.'s internal control over financial reporting as of June 30, 2009, included in the accompanying Item 9A. Report on Internal Control Over Financial Reporting and, accordingly, we do not express an opinion thereon.

/s/ McGladrey & Pullen, LLP
New York, New York

September 25, 2009

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors of
Senesco Technologies, Inc.

We have audited the accompanying consolidated statements of operations, stockholders' equity, and cash flows for the year ended June 30, 2007 and cumulative amounts from July 1, 1998 (inception) to June 30, 2007 of Senesco Technologies, Inc. (a development stage company). These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audit.

We conducted our audit in accordance with the Standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the consolidated financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall consolidated financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated results of their operations and their cash flows for the year ended June 30, 2007 and cumulative amounts from July 1, 1998 (inception) to June 30, 2007 in conformity with United States generally accepted accounting principles.

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. The Company is a development stage company and has incurred recurring losses from operations that raise substantial doubt about its ability to continue as a going concern. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

GOLDSTEIN GOLUB KESSLER LLP
New York, New York

September 26, 2007

SENESCO TECHNOLOGIES, INC. AND SUBSIDIARY
(a development stage company)

CONSOLIDATED BALANCE SHEET

	June 30, 2009	June 30, 2008
ASSETS		
Current Assets:		
Cash and cash equivalents	$ 380,569	$ 5,676,985
Short-term investments	1,050,000	500,000
Prepaid expenses and other current assets	1,161,348	180,556
Total current assets	2,591,917	6,357,541
Property and Equipment, net	5,986	5,459
Intangibles, net	3,884,999	3,213,543
Deferred Financing Costs, net of amortization of $592,308 and $168,706, respectively	632,324	1,059,230
Deferred Income Tax Asset, net of valuation allowance of $11,520,000 and $9,152,000, respectively	-	-
Security Deposit	7,187	7,187
Total Assets	$ 7,122,413	$ 10,642,960
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current Liabilities:		
Accounts payable	$ 976,680	$ 370,167
Accrued expenses	355,937	314,267
Total current liabilities	1,332,617	684,434
Convertible Notes Payable, net of discount of $9,448,783 and $9,499,943, respectively	6,217	57
Grant Payable	99,728	99,728
Other Liability	16,017	23,062
Total liabilities	1,454,579	807,281
Commitments		
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 19,812,043 and 18,375,117, respectively	198,120	183,751
Capital in excess of par	41,419,613	39,874,958
Deficit accumulated during the development stage	(35,949,899)	(30,223,030)
Stockholders' equity	5,667,834	9,835,679
Total Liabilities and Stockholders' Equity	$ 7,122,413	$ 10,642,960

See Notes to Consolidated Financial Statements

F-4

SENESCO TECHNOLOGIES, INC. AND SUBSIDIARY
(a development stage company)

CONSOLIDATED STATEMENT OF OPERATIONS

	Year ended June 30,			Cumulative Amounts from Inception
	2009	2008	2007	
Revenue	$ 275,000	$ 456,667	$ 300,000	$ 1,450,000
Operating expenses:				
General and administrative	2,205,739	2,291,263	2,412,679	23,931,195
Research and development	2,353,962	1,764,426	1,208,321	12,311,557
Total operating expenses	4,559,701	4,055,689	3,621,000	36,242,752
Loss from operations	(4,284,701)	(3,599,022)	(3,321,000)	(34,792,752)
Noncash income	-	-	-	321,259
Sale of state income tax loss - net	-	-	-	586,442
Amortization of debt discount and financing costs	(478,000)	(668,763)	-	(1,146,763)
Interest expense – convertible notes	(1,007,244)	(434,154)	-	(1,441,398)
Interest income - net	43,076	100,449	69,303	523,313
Net loss	$ (5,726,869)	$ (4,601,490)	$ (3,251,697)	$ (35,949,899)
Basic and diluted net loss per common share	$ (.30)	$ (.26)	$ (.19)	-
Basic and diluted weighted-average number of common shares outstanding	18,888,142	17,660,466	16,916,918	-

See Notes to Consolidated Financial Statements

SENESCO TECHNOLOGIES, INC. AND SUBSIDIARY
(a development stage company)

CONSOLIDATED STATEMENT OF STOCKHOLDERS' EQUITY

Period from July 1, 1998 (date of inception) to June 30, 2009

	Common Stock Number of Shares	Amount	Capital in Excess of Par	Deficit Accumulated During the Development Stage	Total Stockholders' Equity (Deficiency)
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 for $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)	-	-
Net loss	-	-	-	$ (1,168,995)	(1,168,995)
Balance at June 30, 1999	6,212,800	62,128	2,019,033	(1,168,995)	912,166
Issuance of common stock for cash on January 26, 2000 for $2.867647 per share	17,436	174	49,826	-	50,000
Issuance of common stock for cash on January 31, 2000 for $2.87875 per share	34,737	347	99,653	-	100,000
Issuance of common stock for cash on February 4, 2000 for $2.924582 per share	85,191	852	249,148	-	250,000
Issuance of common stock for cash on March 15, 2000 for $2.527875 per share	51,428	514	129,486	-	130,000
Issuance of common stock for cash on June 22, 2000 for $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 granted and vested during the year ended June 30, 2000	-	-	1,475,927	-	1,475,927
Net loss	-	-	-	(3,346,491)	(3,346,491)
Balance at June 30, 2000	7,873,292	78,733	5,955,311	(4,515,486)	1,518,558

(continued)

See Notes to Consolidated Financial Statements

F-6

SENESCO TECHNOLOGIES, INC. AND SUBSIDIARY
(a development stage company)

CONSOLIDATED STATEMENT OF STOCKHOLDERS' EQUITY

Period from July 1, 1998 (date of inception) to June 30, 2009

	Common Stock Number of Shares	Common Stock Amount	Capital in Excess of Par	Deficit Accumulated During the Development Stage	Total Stockholders' Equity (Deficiency)
Fair market value of options and warrants granted and vested during the year ended June 30, 2001	-	-	$ 308,619	-	$ 308,619
Net loss	-	-	-	$ (2,033,890)	(2,033,890)
Balance at June 30, 2001	7,873,292	$ 78,733	6,263,930	(6,549,376)	(206,713)
Issuance of common stock and warrants for cash from November 30, 2001 through April 17, 2002 at $1.75 per unit	3,701,430	37,014	6,440,486	-	6,477,500
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 granted and vested during the year ended June 30, 2002	-	-	1,848,726	-	1,848,726
Net loss	-	-	-	(3,021,709)	(3,021,709)
Balance at June 30, 2002	11,880,045	118,800	14,237,961	(9,571,085)	4,785,676
Fair market value of options and warrants granted and vested during the year ended June 30, 2003	-	-	848,842	-	848,842
Net loss	-	-	-	(2,778,004)	(2,778,004)
Balance at June 30, 2003	11,880,045	118,800	15,086,803	(12,349,089)	2,856,514
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	-	-	(378,624)	-	(378,624)

associated with issuances from January 15, 2004 through February 12, 2004

(continued)

See Notes to Consolidated Financial Statements

SENESCO TECHNOLOGIES, INC. AND SUBSIDIARY
(a development stage company)

CONSOLIDATED STATEMENT OF STOCKHOLDERS' EQUITY

Period from July 1, 1998 (date of inception) to June 30, 2009

	Common Stock				
	Number of Shares	Amount	Capital in Excess of Par	Deficit Accumulated During the Development Stage	Total Stockholders' Equity