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SENESCO TECHNOLOGIES INC
Form S-8
March 28, 2003

As filed with the Securities and Exchange Commission on March 28, 2003
Registration No. 333- _____

SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM S-8

REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

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 Number)

303 GEORGE STREET, SUITE 420, NEW BRUNSWICK, NEW JERSEY 08901
(732) 296-8400

(Address, including zip code, and telephone number, including area code,
of registrant's principal executive offices)

1998 STOCK INCENTIVE PLAN, AS AMENDED

(Full title of the plan)

BRUCE C. GALTON, PRESIDENT AND CHIEF EXECUTIVE OFFICER
303 GEORGE STREET, SUITE 420, NEW BRUNSWICK, NEW JERSEY 08901
(732) 296-8400

(Name, address, including zip code, and telephone number, including area code,
of agent for service)

Copies of all communications, including all communications sent to the agent for
service, should be sent to:

DAVID J. SORIN, ESQ.
JOHN F. CINQUE, ESQ.
HALE AND DORR LLP
650 COLLEGE ROAD EAST
PRINCETON, NEW JERSEY 08540
(609) 750-7600

CALCULATION OF REGISTRATION FEE

| Title of Shares To Be Registered | Amount To Be Registered (1) | Proposed Maximum Aggregate Price Per Share | Proposed Maximum Aggregate Offering Price | Amount Registr Fe |
|-------------------------------------|-----------------------------------|---|---|-------------------------|
|-------------------------------------|-----------------------------------|---|---|-------------------------|

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Common Stock, \$0.01 par value per share 1,771,000 shares(2) \$2.60(3) \$4,604,600(3) \$372.

Issuable pursuant to options previously granted under the 1998 Stock Incentive Plan, as amended

Common Stock, \$0.01 par value per share 1,229,000 shares(2) \$2.02(4) \$2,482,580(4) \$200.

Issuable pursuant to options to be granted under the 1998 Stock Incentive Plan, as amended
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- (1) In accordance with Rule 416 under the Securities Act of 1933, this registration statement shall be deemed to cover any additional securities that may from time to time be offered or issued to prevent dilution resulting from stock splits, stock dividends or similar transactions.
- (2) An aggregate of three million (3,000,000) shares are issuable under the 1998 Stock Incentive Plan, as amended.
- (3) Pursuant to Rule 457(h) of the Securities Act of 1933, the proposed maximum offering price is calculated based on the weighted average exercise price of \$2.60 per share, covering 1,771,000 shares issuable under the 1998 Stock Incentive Plan, as amended.
- (4) Pursuant to Rules 457(c) and 457(h) of the Securities Act of 1933, the proposed maximum offering price is estimated solely for the purpose of calculating the registration fee, and is based on the average of the high and low prices of Senesco's common stock as reported on the American Stock Exchange on March 25, 2003.

EXPLANATORY NOTE

The documents containing the information specified in the instructions to Part I of Form S-8 will be sent or given to participants of Senesco's 1998 Stock Incentive Plan, as amended, referred to herein as the Plan, as required by Rule 428(b)(1) of the Securities Act of 1933. As permitted by the instructions to Part I of Form S-8, these documents are not filed with this registration statement.

This registration statement on Form S-8 has been filed by Senesco in order to register an aggregate of three million (3,000,000) shares of common stock, \$0.01 par value per share, issuable upon the exercise of stock options or restricted stock awards granted or to be granted under the Plan as follows:

The first part of this registration statement contains a reoffer prospectus prepared in accordance with the requirements of Part I of Form S-3 with respect to options granted to affiliates pursuant to the Plan prior to the date hereof.

The second part of this registration statement contains "Information

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Required in the Registration Statement" prepared in accordance with the requirements of Part II of Form S-8 with respect to options granted to non-affiliates pursuant to the Plan, prior to the date hereof, and that may be granted subsequent to the date hereof.

Prior to the date hereof, there have been no exercises of options granted under the Plan.

The information in this prospectus is not complete and may be changed. The selling stockholders named in this prospectus may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and the selling stockholders named in this prospectus are not soliciting offers to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED MARCH 28, 2003

PROSPECTUS

SENESCO TECHNOLOGIES, INC.

1,312,500 shares of common stock
issuable pursuant to options granted
under the 1998 Stock Incentive Plan, as amended

This prospectus relates to public resales, from time to time, of one million three hundred twelve thousand five hundred (1,312,500) shares of our common stock that may be acquired upon the exercise of stock options or restricted stock awards granted pursuant to our 1998 Stock Incentive Plan, as amended, referred to herein as the Plan, to the selling stockholders identified herein. Options or shares of common stock may be issued under the stock incentive plan in amounts and to persons not presently known by us. Such information, when known, may be included in an amendment or supplement to this prospectus.

The shares of our common stock may be offered and sold from time to time by the selling stockholders identified in this prospectus, or their pledgees, donees, transferees or other successors-in-interest through public or private transactions at prevailing market prices, at prices related to prevailing market prices or at privately negotiated prices. The selling stockholders will pay all underwriting discounts and selling commissions, if any, applicable to the sale of the shares. We will not receive any proceeds from the sale of the shares other than the exercise price payable to us upon the potential exercise of options and warrants held by the selling stockholders.

Our common stock is traded on the American Stock Exchange under the ticker symbol "SNT." On March 26, 2003, the last reported sale price of our common stock was \$[] per share. You are urged to obtain current market quotations for our common stock.

Investing in our common stock involves a high degree of risk. See "Risk Factors" beginning on page 3 to read about risks that you should consider before you invest in any of the common stock being offered with this prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this

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prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is _____, 2003.

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As used in this prospectus, references to "Senesco," "we," "us," and "our" refer to Senesco Technologies, Inc. and its subsidiary, Senesco, Inc., unless the context otherwise requires.

ABOUT THIS PROSPECTUS

This prospectus is a part of a registration statement on Form S-8 filed by us with the Securities and Exchange Commission to register 3,000,000 shares of our common stock, issuable upon the exercise of stock options or restricted stock awards granted or to be granted under the Plan. This prospectus does not contain all of the information set forth in the registration statement, certain parts of which are omitted in accordance with the rules and regulations of the SEC. Accordingly, you should refer to the registration statement and its exhibits for further information about us and our common stock. Copies of the registration statement and its exhibits are on file with the SEC. Statements contained in this prospectus concerning the documents we have filed with the SEC are not intended to be comprehensive, and in each instance we refer you to the copy of the actual document filed as an exhibit to the registration statement or

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otherwise filed with the SEC.

We have not authorized anyone to provide you with information different from that contained or incorporated by reference in this prospectus. The selling stockholders are offering to sell, and seeking offers to buy, shares of our common stock only in jurisdictions where offers and sales are permitted. The information contained in this prospectus is accurate only as of the date of this prospectus, regardless of the time of delivery of this prospectus or of any sale of common stock.

WHERE YOU CAN FIND MORE INFORMATION

We file reports, proxy statements and other documents with the SEC. You may read and copy any document we file at the SEC's public reference room at Judiciary Plaza Building, 450 Fifth Street, N.W., Room 1024, Washington, D.C. 20549. You should call 1-800-SEC-0330 for more information on the public reference room. Our SEC filings are also available to you on the SEC's Internet site at <http://www.sec.gov>.

This prospectus is part of a registration statement that we filed with the SEC. The registration statement contains more information than this prospectus regarding us and our common stock, including certain exhibits and schedules. You can obtain a copy of the registration statement from the SEC at the address listed above or from the SEC's Internet site.

INCORPORATION BY REFERENCE

The SEC allows us to "incorporate by reference" much of the information we file with them (former Commission File No. 0-22307 and current Commission File No. 001-31326), which means that we can disclose important information to you by referring you to those publicly available documents. The information that we incorporate by reference is considered to be part of this prospectus. You must look at all of the SEC filings that we incorporate by reference to determine if any of the statements in any document previously incorporated by reference have been modified or superseded. This prospectus incorporates by reference the following documents and any future filings made with the SEC pursuant to the Securities and Exchange Act of 1934 since June 30, 2002:

- o our registration statement on Form 8-A, dated May 14, 2002;
- o our current report on Form 8-K, dated July 2, 2002;
- o our annual report on Form 10-KSB for the fiscal year ended June 30, 2002, filed on September 30, 2002;
- o our quarterly report on Form 10-QSB for the quarter ended September 30, 2002, filed on November 14, 2002; and
- o our quarterly report on Form 10-QSB for the quarter ended December 31, 2002, filed on February 14, 2003.

You may request a copy of any or all of these filings, at no cost, by writing or telephoning us at: Senesco Technologies, Inc., 303 George Street, Suite 420, New Brunswick, New Jersey 08901; telephone (732) 296-8400.

You should rely only on the information incorporated by reference or provided in this prospectus or any supplement. We have not authorized anyone else to provide you with different information. The selling stockholders will not make an offer of these shares in any state where the offer is not permitted. You should not assume that information in this prospectus or any supplement is accurate as of any date other than the date on the front of these documents.

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ABOUT SENESCO

Our primary business is the research, development and commercial exploitation of a potentially significant platform technology involving the identification and characterization of genes that we believe control the aging of plant cells, also known as senescence, and the programmed cell death of mammalian cells, also known as apoptosis.

Our technology goals for plant applications are to:

- o extend the shelf-life of perishable plant products;
- o produce larger and more leafy crops;
- o increase crop production in horticultural and agronomic crops; and
- o reduce the harmful effects of environmental stress.

Our technology goals for mammalian research are to:

- o identify drug targets for treatment of diseases caused by abnormal apoptosis;
- o develop gene therapies which directly target the symptoms of these diseases; and
- o develop a screening assay system to enable the discovery and development of compounds to treat these diseases.

Senesco was formed in June 1998. We are a Delaware corporation and our business is currently operated through Senesco and our wholly-owned subsidiary Senesco, Inc., a New Jersey corporation.

Our executive offices are located at 303 George Street, Suite 420, New Brunswick, New Jersey 08901, our telephone number is (732) 296-8400 and our Internet address is <http://www.senesco.com>. The information on our Internet website is not incorporated by reference in this prospectus, and our website address is included in this prospectus as a textual reference only.

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RISK FACTORS

Investing in our common stock involves a high degree of risk. Before you invest in our common stock, you should carefully consider the following factors and cautionary statements, as well as the other information set forth herein. 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. As a result, the trading price of our common stock could decline, and you could lose all or a substantial portion of your investment in our common stock.

WE HAVE A LIMITED OPERATING HISTORY AND HAVE INCURRED SUBSTANTIAL LOSSES AND EXPECT FUTURE LOSSES.

We are a developmental stage biotechnology company with a limited operating history and limited assets and capital. We have incurred losses each year since inception and have an accumulated deficit of \$7,430,321 at June 30, 2002 and \$8,507,363 at December 31, 2002. We have generated minimal revenues by licensing certain of our technology to companies willing to share in our development costs. However, our technology may not be ready for widespread commercialization for several years. We expect to continue to incur losses over the next two to

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three years because we anticipate that our expenditures on research and development, commercialization and administrative activities will significantly exceed our revenues during that period. We cannot predict when, if ever, we will become profitable.

WE DEPEND ON A SINGLE PRINCIPAL TECHNOLOGY.

Our primary business is the development and commercial exploitation of technology to identify, isolate, characterize, and silence genes which control the aging and death of cells in plants and mammals. Our future revenue and profitability critically depend upon our ability to successfully develop senescence and apoptosis gene technology and later market and license such technology at a profit. We have conducted experiments on certain crops with favorable results and have conducted certain preliminary cell-line 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 all crops or mammalian 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 plants or mammals or reduced benefits in terms of crop yield or protection. Our failure to obtain market acceptance of our technology, to successfully commercialize such technology or to develop a commercially viable product would have a material adverse effect on our business.

WE OUTSOURCE ALL OF OUR RESEARCH AND DEVELOPMENT ACTIVITIES.

We rely on third parties to perform all of our research and development activities. Our primary research and development efforts take place at the University of Waterloo in Ontario, Canada, where our technology was developed, at the University of Colorado, at Anawah, Inc., formerly known as Tilligen, Inc., 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, such as the University of Waterloo, to perform under agreements entered into with us, or our failure to renew important research agreements with these third parties, would have a material adverse effect on our ability to develop and exploit our technology.

WE HAVE SIGNIFICANT FUTURE CAPITAL NEEDS.

We had cash and highly-liquid investments valued at \$4,664,678 as of June 30, 2002 and \$3,573,575 as of December 31, 2002, and working capital of \$3,425,367 as of June 30, 2002 and \$3,443,925 as of December 31, 2002. We believe that we can operate according to our current business plan for at least twelve months using our available reserves. To date, we have generated minimal revenues and we anticipate that our operating costs will exceed any revenues generated over the next several years. Therefore, we anticipate that we will be required to raise additional capital in the future in

order to operate according to our current business plan. We may require additional funding in less than twelve months, and additional funding may not be available on favorable terms, if at all. In addition, in connection with such funding, if we need to issue more equity securities than our certificate of incorporation currently authorizes, or more than 20% of the shares of common stock outstanding, we may need stockholder approval. If stockholder approval is

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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 granted, we had 2,301,802 shares of common stock as of June 30, 2002 and 12,131,802 shares of common stock as of December 31, 2002, 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 inception, we have financed all of our operations through private equity financings. Our future capital requirements depend on numerous factors, including:

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

OUR BUSINESS DEPENDS ON OUR PATENTS, LICENSES AND PROPRIETARY RIGHTS AND THE ENFORCEMENT OF THESE RIGHTS.

As a result of the substantial length of time and expense associated with developing products and bringing them to the marketplace in the agricultural and biotechnology 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:

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

We have been issued one patent by the U.S. Patent and Trademark Office. We have also filed patent applications in the United States and internationally for our technology which is vital to our primary business, as well as several Continuations in Part on these patent applications. Our success depends in part upon the enforcement of our patent rights and whether patents are granted from our pending patent applications.

Furthermore, although we believe that our technology is unique and will not violate or infringe upon the proprietary rights of any third party, there can be no assurance that such 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

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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.

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In addition, among other things, we cannot guarantee that:

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

If any relevant claims of third-party patents which 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 guarantee that such licenses would be available or, even if available, would be on acceptable terms.

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.

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.

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 U.S. Patent and Trademark Office 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 value of our proprietary rights.

Our success also 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 that prohibits the disclosure of confidential information to anyone outside of our

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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 guarantee adequate protection for our trade secrets, know-how or other proprietary information against unauthorized use or disclosure. We occasionally provide information to research collaborators in academic institutions and request the collaborators to conduct certain tests. We cannot guarantee 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 have a material adverse effect on our business and financial results.

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WE WILL HAVE TO PROPERLY MANAGE OUR GROWTH.

As our business grows, we may need to add employees and enhance our management, systems and procedures. We will 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. Although we do not presently intend to conduct research and development activities in-house, we may undertake those activities in the future. Expanding our business will place a significant burden on our management and operations. Our failure to effectively respond to changes brought about by our growth may have a material adverse effect on our business and financial results.

WE HAVE NO MARKETING OR SALES HISTORY AND DEPEND ON THIRD-PARTY MARKETING PARTNERS.

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 also 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, such marketing partners may not be able to successfully market products or human health applications developed with our technology. If we fail to successfully establish distribution channels, or if our marketing partners fail to provide adequate levels of sales, we will not be able to generate significant revenue.

WE DEPEND ON PARTNERS TO DEVELOP AND MARKET OUR TECHNOLOGY.

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 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 our technological

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development may be harmed.

COMPETITION IN THE AGRICULTURAL AND BIOTECHNOLOGY INDUSTRIES IS INTENSE AND TECHNOLOGY IS CHANGING RAPIDLY.

Many agricultural and biotechnology companies are engaged in research and development activities relating to senescence and apoptosis. 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 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. Such companies include: Paradigm Genetics; Aventis Crop Science; Mendel Biotechnology; Renessen LLC; Exelixis Plant Sciences, Inc.; PlantGenix, Inc.; and Eden Bioscience, among others. Some of the companies involved in apoptosis research include: Cell Pathways, Inc.; Trevigen, Inc.; Idun Pharmaceuticals; Novartis; Introgen Therapeutics, Inc.; Genta, Inc.; and Oncogene, 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.

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OUR BUSINESS IS SUBJECT TO VARIOUS GOVERNMENT REGULATIONS.

At present, the U.S. federal government regulation of biotechnology is divided among three agencies: (i) 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; (ii) the EPA regulates activity related to the invention of plant pesticides and herbicides, which may include certain kinds of transgenic plants; and (iii) 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.

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, 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 mammalian technology. In addition, our

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marketing partners who utilize our technology or sell products grown with our technology may be subject to government regulations. The imposition of unfavorable governmental regulations on our technology or the failure to obtain licenses or approvals in a timely manner would have a material adverse effect on our business.

THE HUMAN HEALTH APPLICATIONS OF OUR TECHNOLOGY ARE SUBJECT TO A LENGTHY AND UNCERTAIN REGULATORY PROCESS.

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 mammalian 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 pre-clinical testing and clinical trials, which could take several years and may require substantial expenditures. Any failure to obtain regulatory approval could delay or prevent us from commercializing our mammalian technology.

CLINICAL TRIALS ON OUR HUMAN HEALTH APPLICATIONS MAY BE UNSUCCESSFUL IN DEMONSTRATING EFFICACY AND SAFETY, WHICH COULD DELAY OR PREVENT REGULATORY APPROVAL.

Clinical trials may reveal that our mammalian technology is ineffective or harmful, 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 pre-clinical, 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.

CONSUMERS MAY NOT ACCEPT OUR TECHNOLOGY.

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 consumer products. The adverse consequences from heightened consumer concern in this regard could affect the markets for products developed with our technology and could also result in increased government regulation in response to that concern. If the public or potential customers perceive our technology to be genetic modification or genetic engineering, agricultural products grown with our technology may not gain market acceptance.

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WE DEPEND ON OUR KEY RESEARCH PERSONNEL.

We are highly dependent on our scientific advisors, consultants and third-party research partners. Dr. Thompson is the inventor of our technology and the driving force behind our current research. The loss of Dr. Thompson would severely hinder our technological development. 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. 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

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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 American Stock 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 our company 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 outstanding options or issue equivalent options, our board of directors is required to provide accelerated vesting of outstanding options.

OUR MANAGEMENT AND OTHER AFFILIATES HAVE SIGNIFICANT CONTROL OF OUR COMMON STOCK AND COULD CONTROL OUR ACTIONS IN A MANNER THAT CONFLICTS WITH OUR INTERESTS AND THE INTERESTS OF OTHER STOCKHOLDERS.

Our executive officers, directors and affiliated entities together beneficially own approximately 51.62% of the outstanding shares of our common stock as of June 30, 2002 and 45.9% as of December 31, 2002, assuming the exercise of options and warrants which are currently exercisable, held by these stockholders. As a result, these stockholders, acting together, will be able to exercise considerable 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.

OUR STOCKHOLDERS MAY EXPERIENCE SUBSTANTIAL DILUTION AS A RESULT OF OUTSTANDING OPTIONS AND WARRANTS TO PURCHASE OUR COMMON STOCK.

As of December 31, 2002, we have granted options outside of our stock option plan to purchase 10,000 shares of our common stock and warrants to purchase 4,207,153 shares of our common stock. In addition, we have reserved 3,000,000 shares of our common stock for issuance upon the exercise of options granted pursuant to our stock option plan, 1,771,000 of which have been granted as of December 31, 2002 and 1,229,000 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.

SHARES ELIGIBLE FOR PUBLIC SALE.

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As of December 31, 2002, we had 11,880,045 shares of our common stock issued and outstanding, of which approximately 8,000,000 shares are registered pursuant to a registration statement on Form S-3, which was deemed effective on June 28, 2002, and the remainder of which are in the public float. In addition, we are registering 3,000,000 shares of our common stock underlying options granted or to be granted under our stock option plan. Consequently, sales of substantial amounts of our common stock in the public market, whether by purchasers in this offering or stockholders holding shares of our registered common stock, or the perception that such sales could occur, may adversely affect the market price of our common stock.

RISKS RELATED TO THIS OFFERING.

Our common stock is quoted on the American Stock Exchange and currently has a limited trading market. We cannot assure you that an active trading market will develop or, if developed, will be maintained. As a result, you may find it difficult to dispose of, or to obtain accurate quotations as to the value of, shares of our common stock and may suffer a loss of all or a substantial portion of your investment.

OUR STOCK PRICE MAY FLUCTUATE AFTER THIS OFFERING.

We cannot guarantee 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:

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

IF OUR COMMON STOCK IS DELISTED FROM THE AMERICAN STOCK EXCHANGE, IT MAY BE SUBJECT TO THE "PENNY STOCK" REGULATIONS WHICH MAY AFFECT THE ABILITY OF OUR STOCKHOLDERS TO SELL THEIR SHARES.

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 Nasdaq 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 the American Stock Exchange delists our common stock, it could be deemed a penny stock, which imposes additional sales practice requirements 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 common stock were subject to the rules on penny stocks, the market liquidity for our common stock could be severely and adversely affected. Accordingly, the ability of holders of our common stock to sell their shares in

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the secondary market may also be adversely affected.

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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, including the terrorist attacks of September 11, 2001 and the current crisis in the Middle East, 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. Specifically, if the current crisis in Israel continues to escalate, our joint venture with Rahan Meristem Ltd. could be adversely affected.

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus includes and incorporates forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934 based upon the beliefs of our management, as well as assumptions made by, and the information currently available to, our management. All statements, other than statements of historical facts, included or incorporated in this prospectus regarding our strategy, future operations, financial position, future revenues, projected costs, prospects, plans and objectives of management are forward-looking statements. The words "anticipates," "believes," "estimates," "expects," "intends," "may," "plans," "projects," "will," "would" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. We cannot guarantee that we actually will achieve the plans, intentions or expectations disclosed in our forward-looking statements and you should not place undue reliance on our forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements we make. We have included important factors in the cautionary statements included or incorporated in this prospectus, particularly under the heading "Risk Factors," that we believe could cause actual results or events to differ materially from the forward-looking statements that we make. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures or investments we may make. You are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date of this prospectus. Except for special circumstances in which a duty to update arises when prior disclosure becomes materially misleading in light of subsequent circumstances, we do not intend to update any of these forward-looking statements to reflect events or circumstances after the date of this prospectus or to reflect the occurrence of unanticipated events.

USE OF PROCEEDS

We will not receive any proceeds from the sale of our common stock by the selling stockholders. We will receive the proceeds from the exercise of options held by the selling stockholders, if any are exercised. The options entitle the

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selling stockholders to purchase shares of our common stock at exercise prices ranging from \$1.50 to \$4.00 per share and with a weighted average exercise price of \$2.60 per share.

The selling stockholders will pay any underwriting discounts and commissions and expenses incurred by the selling stockholders in disposing of the shares. We will bear all other costs, fees and expenses incurred in effecting the registration of the shares covered by this prospectus, including, without limitation, all registration and filing fees, American Stock Exchange listing fees and fees and expenses of our counsel and our accountants.

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SELLING STOCKHOLDERS

The selling stockholders listed in the following table may acquire 1,312,500 shares of our common stock being registered pursuant to this prospectus through the exercise of options previously granted to them by us. These shares of common stock may not be sold or otherwise transferred by the selling stockholders unless and until the applicable options are exercised in accordance with their terms.

The 1,312,500 shares covered by this prospectus represent approximately 10% of our outstanding shares of common stock as of February 28, 2003. Such percentage calculation is based on 11,880,045 shares of common stock outstanding as of February 28, 2003, and the issuance of an additional 1,312,500 shares of common stock assuming the exercise of all the options held by the selling stockholders.

The following table sets forth: (i) the name of each selling stockholder whose name is known as of the date of the filing of this prospectus; (ii) his or her position(s), office or other material relationship with us and our predecessors or affiliates over the last three years; (iii) the number of shares of common stock owned (or subject to options or warrants) by each selling stockholder as of February 28, 2003 and prior to this offering; (iv) the number of shares of common stock which may be offered and are being registered for the account of each selling stockholder by this prospectus (all of which may be acquired by the selling stockholders pursuant to the exercise of options subject to the appropriate vesting of such options); and (v) the amount of common stock to be owned by each such selling stockholder if such selling stockholder were to sell all of their shares of common stock covered by this prospectus.

The selling stockholders may sell none of the shares or less than all of the shares listed on the table. In addition, the shares listed below may be sold pursuant to this prospectus or in privately negotiated transactions. Accordingly, we cannot estimate the number of shares of common stock that the selling stockholders will sell under this prospectus.

In addition, options or shares of common stock may be issued under the Plan in amounts and to persons not presently known by us. Such information, when known, may be included in an amendment or supplement to this prospectus.

| Name and Position (1) | Ownership of Selling Stockholders Prior to Offering (2) | Number of Shares Offered Hereby (3) | Ownership Selling Stock After Offering |
|-----------------------|---|--|--|
| | | | |

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| | Number ----- | Percent (%) ----- | Number ----- | Number ----- | Pe --- |
|---|-----------------|----------------------|-----------------|-----------------|-----------|
| Ruedi Stalder, Chairman of the Board of Directors | 456,667 (4) | 3.72% | 390,000 | 66,667 | |
| Bruce C. Galton, President, Chief Executive Officer and Director | 432,000 (5) | 3.51% | 430,000 | 2,000 | |
| John E. Thompson, Ph.D., Executive Vice President of Research and Development and Director | 712,000 (6) | 5.92% | 140,000 | 572,000 | |
| Christopher Forbes, Director | 826,029 (7) | 6.90% | 100,000 | 726,029 | |
| Thomas C. Quick, Director | 328,787 (8) | 2.74% | 100,000 | 228,787 | |
| Joel Brooks, Chief Financial Officer and Treasurer | 54,500 (9) | * | 52,500 | 2,000 | |
| Sascha P. Fedyszyn, Vice President of Corporate Development and Secretary | 123,360 (10) | 1.03% | 85,000 | 38,360 | |
| David Rector, Director | 15,000 (11) | * | 15,000 | -- | |

* Less than one percent.

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(1) At the time of this offering, there are no unnamed non-affiliates of Senesco holding less than the lesser of 1,000 shares or one percent of the shares issuable under the Plan from the exercise of stock options, excluding options to purchase additional shares of common stock that may be held by each such individual, which may be sold pursuant to this offering.

(2) Applicable percentage of ownership is based on 11,880,045 shares of common stock outstanding as of February 28, 2003, plus the issuance of additional shares of common stock assuming the exercise of all the options and warrants held by such selling stockholder (whether vested or unvested).

(3) Assumes that all of the shares of common stock to be offered by the selling stockholder, as set forth above, are sold pursuant to this offering and that no other shares of common stock are acquired or disposed of by the selling stockholders prior to the termination of this offering. Because the selling stockholders may sell all, some or none of the shares registered under this prospectus or may acquire or dispose of other shares of common stock, no reliable estimate can be made of the aggregated number of shares that will be sold pursuant to this offering or the number or percentage of shares of common stock that each selling stockholder will own upon completion of this offering.

(4) Includes 390,000 shares of common stock underlying directly held vested and unvested options granted prior to this offering.

(5) Includes 430,000 shares of common stock underlying directly held vested and unvested options granted prior to this offering.

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(6) Includes 140,000 shares of common stock underlying directly held vested and unvested options granted prior to this offering.

(7) Includes 100,000 shares of common stock underlying directly held vested and unvested options and 178,106 shares of common stock underlying directly held vested warrants granted prior to this offering.

(8) Includes 100,000 shares of common stock underlying directly held vested and unvested options and 89,053 shares of common stock underlying directly held vested warrants granted prior to this offering.

(9) Includes 52,500 shares of common stock underlying directly held vested and unvested options granted prior to this offering.

(10) Includes 85,000 shares of common stock underlying directly held vested and unvested options granted prior to this offering.

(11) Represents 15,000 shares of common stock underlying directly held vested and unvested options granted prior to this offering.

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PLAN OF DISTRIBUTION

The shares covered by this prospectus may be offered and sold from time to time by the selling stockholders. The term "selling stockholders" includes donees, pledgees, transferees or other successors-in-interest selling shares received after the date of this prospectus from a selling stockholder as a gift, pledge, partnership distribution or other non-sale related transfer. The selling stockholders will act independently of us in making decisions with respect to the timing, manner and size of each sale. Such sales may be made on one or more exchanges or in the over-the-counter market or otherwise, at prices and under terms then prevailing or at prices related to the then current market price or in negotiated transactions. The selling stockholders may sell their shares by one or more of, or a combination of, the following methods:

- o purchases by a broker-dealer as principal and resale by such broker-dealer for its own account pursuant to this prospectus;
- o ordinary brokerage transactions and transactions in which the broker solicits purchasers;
- o block trades in which the broker-dealer so engaged will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- o an over-the-counter distribution in accordance with the rules of the Nasdaq National Market;
- o in privately negotiated transactions; and
- o in options transactions.

In addition, any shares that qualify for sale pursuant to Rule 144 may be sold under Rule 144 rather than pursuant to this prospectus.

To the extent required, this prospectus may be amended or supplemented from time to time to describe a specific plan of distribution. In connection with distributions of the shares or otherwise, the selling stockholders may enter into hedging transactions with broker-dealers or other financial institutions. In connection with such transactions, broker-dealers or other financial institutions may engage in short sales of the common stock in the course of

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hedging the positions they assume with selling stockholders. The selling stockholders may also sell the common stock short and redeliver the shares to close out such short positions. The selling stockholders may also enter into option or other transactions with broker-dealers or other financial institutions which require the delivery to such broker-dealer or other financial institution of shares offered by this prospectus, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction). The selling stockholders may also pledge shares to a broker-dealer or other financial institution, and, upon a default, such broker-dealer or other financial institution, may effect sales of the pledged shares pursuant to this prospectus (as supplemented or amended to reflect such transaction).

In effecting sales, broker-dealers or agents engaged by the selling stockholders may arrange for other broker-dealers to participate. Broker-dealers or agents may receive commissions, discounts or concessions from the selling stockholders in amounts to be negotiated immediately prior to the sale.

In offering the shares covered by this prospectus, the selling stockholders and any broker-dealers who execute sales for the selling stockholders may be deemed to be "underwriters" within the meaning of the Securities Act of 1933 in connection with such sales. Any profits realized by the selling stockholders and the compensation of any broker-dealer may be deemed to be underwriting discounts and commissions.

In order to comply with the securities laws of certain states, if applicable, the shares must be sold in such jurisdictions only through registered or licensed brokers or dealers. In addition, in certain states the shares may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and is complied with.

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We have advised the selling stockholders that the anti-manipulation rules of Regulation M under the Exchange Act may apply to sales of shares in the market and to the activities of the selling stockholders and their affiliates. In addition, we will make copies of this prospectus available to the selling stockholders for the purpose of satisfying the prospectus delivery requirements of the Securities Act of 1933. The selling stockholders may indemnify any broker-dealer that participates in transactions involving the sale of the shares against certain liabilities, including liabilities arising under the Securities Act of 1933.

At the time a particular offer of shares is made, if required, a prospectus supplement will be distributed that will set forth the number of shares being offered and the terms of the offering, including the name of any underwriter, dealer or agent, the purchase price paid by any underwriter, any discount, commission and other item constituting compensation, any discount, commission or concession allowed or reallocated or paid to any dealer, and the proposed selling price to the public.

EXPERTS

The audited consolidated financial statements incorporated by reference in this prospectus and elsewhere in the registration statement have been audited by Goldstein Golub Kessler LLP, independent public accountants, as indicated in their report with respect thereto, and are incorporated by reference in reliance upon the authority of said firm as experts in accounting and auditing in giving

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said report.

LEGAL MATTERS

The validity of the shares of common stock offered by this prospectus have been passed upon for us by Hale and Dorr LLP, Princeton, New Jersey. We have granted to Hale and Dorr LLP a warrant to purchase 15,000 shares of our common stock.

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INDEMNIFICATION OF DIRECTORS AND OFFICERS

Section 145 of the Delaware General Corporation Law empowers a Delaware corporation to indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of such corporation) by reason of the fact that such person is or was a director, officer, employee or agent of such corporation, or is or was serving at the request of such corporation as a director, officer, employee or agent of another corporation or enterprise. A corporation may, in advance of the final disposition of any civil, criminal, administrative or investigative action, suit or proceeding, pay the expenses (including attorneys' fees) incurred by any officer, director, employee or agent in defending such action, provided that the director or officer undertakes to repay such amount if it shall ultimately be determined that he is not entitled to be indemnified by the corporation. A corporation may indemnify such person against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding if he acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful.

A Delaware corporation may indemnify officers and directors in an action by or in the right of the corporation to procure a judgment in its favor under the same conditions, except that no indemnification is permitted without judicial approval if the officer or director is adjudged to be liable to the corporation. Where an officer or director is successful on the merits or otherwise in the defense of any action referred to above, the corporation must indemnify him against the expenses (including attorneys fees) which he actually and reasonably incurred in connection therewith. The indemnification provided is not deemed to be exclusive of any other rights to which an officer or director may be entitled under any corporation's by-law, agreement, vote or otherwise.

Our certificate of incorporation includes a provision that eliminates the personal liability of our directors to us or our stockholders for monetary damages for breach of their fiduciary duty to the maximum extent permitted by the DGCL. The DGCL does not permit liability to be eliminated (i) for any breach of a director's duty of loyalty to us or our stockholders, (ii) for acts or omissions not in good faith or that involve intentional misconduct or a knowing violation of law, (iii) for unlawful payments of dividends or unlawful stock repurchases or redemptions, as provided in Section 174 of the DGCL, or (iv) for any transaction from which the director derived an improper personal benefit. In addition, as permitted in Section 145 of the DGCL, our certificate of incorporation and by-laws provide that we shall indemnify our directors and officers to the fullest extent permitted by the DGCL, including those circumstances in which indemnification would otherwise be discretionary, subject

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to certain exceptions. Our by-laws also provide that we shall advance expenses to directors and officers incurred in connection with an action or proceeding as to which they may be entitled to indemnification, subject to certain exceptions.

Each of our indemnification agreements with each of our executive officers and directors provides for indemnification to the maximum extent permitted by applicable law. We also indemnify each of our directors and executive officers with the maximum indemnification allowed to directors and executive officers by the DGCL, subject to certain exceptions, as well as certain additional procedural protections. In addition, we will generally advance expenses incurred by directors and executive officers in any action or proceeding as to which they may be entitled to indemnification, subject to certain exceptions.

The indemnification provisions in our certificate of incorporation and by-laws also permit indemnification for liabilities arising under the Securities Act of 1933. Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons pursuant to the foregoing provisions, or otherwise, we have been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act of 1933 and is, therefore, unenforceable.

We currently carry director and officer liability insurance in the amount of \$2,000,000.

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PART II INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

ITEM 3. INCORPORATION OF DOCUMENTS BY REFERENCE.

The SEC permits us to "incorporate by reference" the information we file with the SEC, which means that we can disclose important information to you by referring to those documents. The information incorporated by reference is an important part of this Prospectus, and information that we file later with the SEC will automatically update and supercede this information. We incorporate by reference the documents listed below and any future filings made by us with the SEC under Sections 13(a), 13(c), 14, and 15(d) of the Securities Exchange Act of 1934, as amended, until the filing of a post-effective amendment to this Prospectus which indicates that all Shares registered here have been sold or which deregisters all Shares then remaining unsold. The following documents, which are on file with the Commission, are incorporated in this registration statement by reference:

(a) Senesco's annual report filed pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, which includes audited financial statements for our latest fiscal year for which such statements have been filed.

(b) All other reports filed pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 since the end of the fiscal year covered by the document referred to in (a) above.

(c) The description of Senesco's common stock, \$0.01 par value, which is contained in our registration statement on Form 8-A filed on May 14, 2002, under the Securities Exchange Act of 1934, including any amendment or report filed for the purpose of updating such description.

All documents subsequently filed by the registrant pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Securities Exchange Act of 1934, prior to the

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filing of a post-effective amendment which indicates that all securities offered hereby have been sold or which deregisters all securities then remaining unsold, shall be deemed to be incorporated by reference in this registration statement and to be part hereof from the date of the filing of such documents. Any statement contained in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for the purposes of this registration statement to the extent that a statement contained herein or in any other subsequently filed document which also is or is deemed to be incorporated by reference herein modifies or supersedes such statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this registration statement.

ITEM 4. DESCRIPTION OF SECURITIES.

Not applicable.

ITEM 5. INTERESTS OF NAMED EXPERTS AND COUNSEL.

Hale and Dorr LLP has opined as to the legality of the securities being offered by this registration statement. Hale and Dorr LLP is the holder of a warrant to purchase 15,000 shares of our common stock.

ITEM 6. INDEMNIFICATION OF DIRECTORS AND OFFICERS.

Section 145 of the Delaware General Corporation Law empowers a Delaware corporation to indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of such corporation) by reason of the fact that such person is or was a director,

officer, employee or agent of such corporation, or is or was serving at the request of such corporation as a director, officer, employee or agent of another corporation or enterprise. A corporation may, in advance of the final disposition of any civil, criminal, administrative or investigative action, suit or proceeding, pay the expenses (including attorneys' fees) incurred by any officer, director, employee or agent in defending such action, provided that the director or officer undertakes to repay such amount if it shall ultimately be determined that he is not entitled to be indemnified by the corporation. A corporation may indemnify such person against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding if he acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful.

A Delaware corporation may indemnify officers and directors in an action by or in the right of the corporation to procure a judgment in its favor under the same conditions, except that no indemnification is permitted without judicial approval if the officer or director is adjudged to be liable to the corporation. Where an officer or director is successful on the merits or otherwise in the defense of any action referred to above, the corporation must indemnify him against the expenses (including attorneys fees) which he actually and reasonably incurred in connection therewith. The indemnification provided is not deemed to be exclusive of any other rights to which an officer or director may be entitled under any corporation's by-law, agreement, vote or otherwise.

Our certificate of incorporation includes a provision that eliminates the

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personal liability of our directors to us or our stockholders for monetary damages for breach of their fiduciary duty to the maximum extent permitted by the DGCL. The DGCL does not permit liability to be eliminated (i) for any breach of a director's duty of loyalty to us or our stockholders, (ii) for acts or omissions not in good faith or that involve intentional misconduct or a knowing violation of law, (iii) for unlawful payments of dividends or unlawful stock repurchases or redemptions, as provided in Section 174 of the DGCL, or (iv) for any transaction from which the director derived an improper personal benefit. In addition, as permitted in Section 145 of the DGCL, our certificate of incorporation and by-laws provide that we shall indemnify our directors and officers to the fullest extent permitted by the DGCL, including those circumstances in which indemnification would otherwise be discretionary, subject to certain exceptions. Our by-laws also provide that we shall advance expenses to directors and officers incurred in connection with an action or proceeding as to which they may be entitled to indemnification, subject to certain exceptions.

Each of our indemnification agreements with each of our executive officers and directors provides for indemnification to the maximum extent permitted by applicable law. We also indemnify each of our directors and executive officers with the maximum indemnification allowed to directors and executive officers by the DGCL, subject to certain exceptions, as well as certain additional procedural protections. In addition, we will generally advance expenses incurred by directors and executive officers in any action or proceeding as to which they may be entitled to indemnification, subject to certain exceptions.

The indemnification provisions in our certificate of incorporation and by-laws also permit indemnification for liabilities arising under the Securities Act of 1933. Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons pursuant to the foregoing provisions, or otherwise, we have been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act of 1933 and is, therefore, unenforceable.

We currently carry director and officer liability insurance in the amount of \$2,000,000.

ITEM 7. EXEMPTION FROM REGISTRATION CLAIMED.

The issuance of the shares being offered by this registration statement were deemed exempt from registration under the Securities Act of 1933 in reliance upon either Section 4(2) of the Securities Act of 1933 as transactions not involving any public offering or Rule 701 under the Securities Act of 1933 as transactions made pursuant to a written compensatory plan or pursuant to a written contract relating to compensation.

ITEM 8. EXHIBITS.

| Number | Description |
|--------|---|
| ----- | ----- |
| 4.1 + | Amended and Restated Certificate of Incorporation of Senesco Technologies, Inc., filed with the State of Delaware on December 26, 2002. |
| 4.2 * | Amended and Restated Bylaws of Senesco. |
| 5.1 | Opinion of Hale and Dorr LLP, counsel to Senesco. |

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- 23.1 Consent of Hale and Dorr LLP (included in Exhibit 5.1).
- 23.2 Consent of Goldstein Golub Kessler LLP.
- 24.1 Power of attorney (included on the signature pages of this registration statement).
- 99.1 + Senesco's 1998 Stock Incentive Plan, as amended.

+ Previously filed with the Securities and Exchange Commission as an Exhibit to Senesco's quarterly report on Form 10-QSB for the period ended December 31, 2002, and incorporated herein by reference.

* Previously filed with the Securities and Exchange Commission as an Exhibit to Senesco's quarterly report on Form 10-QSB for the period ended September 30, 1999, and incorporated herein by reference.

ITEM 9. UNDERTAKINGS.

(a) Senesco hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement; and

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

provided, however, that paragraphs (i) and (ii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(b) Senesco hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's

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annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(c) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, Senesco has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act of 1933 and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act of 1933 and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of New Brunswick, State of New Jersey, on this 28th day of March, 2003.

SENESCO TECHNOLOGIES, INC.

By: /s/ Bruce C. Galton

Bruce C. Galton
President and Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Bruce C. Galton and Joel Brooks, jointly and severally, his true and lawful attorneys-in-fact and agents, each with full power of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities, to sign any and all amendments to this registration statement, and to file the same, with exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite or necessary to be done in and about the premises, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that each of said attorneys-in-fact and agents, or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

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Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed below by the following persons in the capacities and on the dates indicated.

| Signature ----- | Title ----- | Date ----- |
|---|--|----------------|
| /s/ Bruce C. Galton ----- Bruce C. Galton | President, Chief Executive Officer and Director (Principal Executive Officer) | March 17, 2003 |
| /s/ Joel Brooks ----- Joel Brooks | Chief Financial Officer and Treasurer (Principal Financial and Accounting Officer) | March 17, 2003 |
| /s/ Ruedi Stalder ----- Ruedi Stalder | Chairman of the Board and Director | March 17, 2003 |
| /s/ John E. Thompson ----- John E. Thompson, Ph.D. | Executive Vice President of Research and Development and Director | March 17, 2003 |
| /s/ Christopher Forbes ----- Christopher Forbes | Director | March 17, 2003 |
| /s/ Thomas C. Quick ----- Thomas C. Quick | Director | March 28, 2003 |
| /s/ David Rector ----- David Rector | Director | March 17, 2003 |
| /s/ Philip B. Livingston ----- Philip B. Livingston | Director | March 17, 2003 |

INDEX TO EXHIBITS

| Number ----- | Description ----- |
|-----------------|---|
| 4.1 + | Amended and Restated Certificate of Incorporation of Senesco Technologies, Inc., filed with the State of Delaware on December 26, 2002. |
| 4.2 * | Amended and Restated Bylaws of Senesco. |
| 5.1 | Opinion of Hale and Dorr LLP, counsel to Senesco. |

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- 23.1 Consent of Hale and Dorr LLP (included in Exhibit 5.1).
- 23.2 Consent of Goldstein Golub Kessler LLP.
- 24.1 Power of attorney (included on the signature pages of this registration statement).
- 99.1 + Senesco's 1998 Stock Incentive Plan, as amended.

- + Previously filed with the Securities and Exchange Commission as an Exhibit to Senesco's quarterly report on Form 10-QSB for the period ended December 31, 2002, and incorporated herein by reference.
- * Previously filed with the Securities and Exchange Commission as an Exhibit to Senesco's quarterly report on Form 10-QSB for the period ended September 30, 1999, and incorporated herein by reference.