



Annual Report 2009



“Our previous investments in science led to the birth of the semiconductor, computer, and bio-technology industries that have added greatly to our economic prosperity. Now, we need similar breakthroughs on energy.”

—*Steven Chu, Secretary of Energy,
March 2009*

Vision

During the next 20 years, with an expanding global population, improved diets and rapidly growing energy demands, society will need to produce plants enhanced for food, feed, fiber and energy benefit without significant increases in production acreage. With the growth of energy generation from agricultural feedstocks, agricultural and energy supply chains serving the needs of a growing bio-economy are expected to become integrated. Agricultural systems have had a major impact on the global environment; our technologies can contribute substantially to minimizing environmental consequences of agriculture for future generations.

Mission

To create value from our knowledge about the regulation of plant gene and pathway function – knowledge that enables advanced improvement in plant variety performance, and the delivery of associated services, to meet global agricultural and energy production needs.

We will capture value by:

- Distributing genetics for major row crops through differentiated customer seed products; and,
- Distributing genetics for biomass crops serving the BioEnergy industry through differentiated Mendel plant and seed products.

Core Corporate Values:

Sustainability – our planet, our business, our people

Restless innovation – constant change, fueling our drive to innovate

Scientific excellence – world-class science solving global problems

Effective collaboration – dynamic teamwork, critical to success

D Dear Shareholder:

This is the third time I'm writing you about our progress in the prior year. Much has changed at Mendel since I became CEO in February of 2007, and so I felt it would be valuable to take a long view of the development of the company, and the growth in its value, through the end of 2009.

Three years ago, when I first became CEO, we had recently entered into a new program with Monsanto focused on developing products from our lead technologies. We had realized some of our initial technology vision, but recognized already then that if we were to remain a premier technology company in the application of plant sciences to crop improvement, we would need to reinvent ourselves, building new technology platforms, and positioning ourselves for a new era of gene and technology discovery.

We invested in these new platforms, which meant a commitment also to new science, new scientists and to computational biology as an underpinning critical to capitalizing on emerging themes in biology and technology. Regulatory networks; signaling pathways; chemical genetics; building on a unique foundation in plant gene regulation from the first decade of Mendel's life.

2009 was a watershed year in which the technology organization matured and we reached a new plateau in our science.

This has been demonstrated by the ***execution of an expanded collaboration with Bayer Crop Science***, with an expansion in the scope of the collaboration. We will be developing chemical products which make crops more resistant to biotic and abiotic stress factors, which in turn will stabilize yields and improve crop productivity.

This has been demonstrated by the ***initial deployment of our platforms to accelerate development and discovery with Monsanto***, advancements well recognized by their science team, and which are contributing to deeper understanding of and support for regulatory dossiers to cover products such as Monsanto's improved yield soybean.

This has been demonstrated by the ***development of a new discovery-focused, computational biology-rich program*** that provides the core platforms for a new round of gene and technology discovery that the agricultural seed industry needs.

In 2007, we were just beginning a full technology development program as the underpinning of a future seed business, which was merely a glimmer. We had not yet acquired the Timplant breeding program, we were just starting our collection of new miscanthus accessions in China. We hadn't planted a single miscanthus plant in the field yet, we didn't even own a single miscanthus variety. Flash

“Low carbon growth is going to be the only growth story of the future.”

—Lord Nicholas Stern,
Former President, World Bank



forward three years. While we have had some challenges this year trying to move very rapidly from research to development in our larger-scale demonstration and pilot projects, we have made great strides overall in our Mendel BioEnergy Seeds (MBS) division.

We now have real data from our own first year trials that indicate that we have clonal products, *our first generation of products*, that gives Mendel a unique commercial opportunity. Our offering of multiple clonal products provides power companies or biorefineries with improved biomass supply risk management.

We now have real data from our own 2nd year trials that indicate that *we can develop our first seeded products* in a timeframe that we had merely hoped we would be able to do so back in 2007.

We now have developed *molecular tools to understand the germplasm* and to determine how best to deploy that germplasm for variety improvement.

And we're making good headway finally in establishing miscanthus as being a primary feedstock crop opportunity, no longer viewed by government agencies just as a curious opportunity with switchgrass as the premier energy grass, based on our work and advocacy.

Mendel is participating in project bids for several hundred acre or even thousand acre projects in 2011. We couldn't even have contemplated involvement in these bids 18 months ago. But if we execute on development of our own supply chain, up through the effective establishment of productive acres with our varieties, we could have key commercial projects in development by the end of 2011 supporting full product launch and commercial operations in 2013.

The Forces Shaping our Business

While the world looks quite different than it did in the middle of 2008, the long forces that give us confidence in the growing value of our business have not changed. Increased agricultural productivity could not be more important as the world recognizes the need to produce not just food and fiber but renewable energy and renewable industrial products. Our business strategy is driven by major long-term, durable changes in the global agriculture and energy economy; the challenge is to manage through short-term shocks to the economy, threats to acceptance of biofuels, and a changing policy environment.

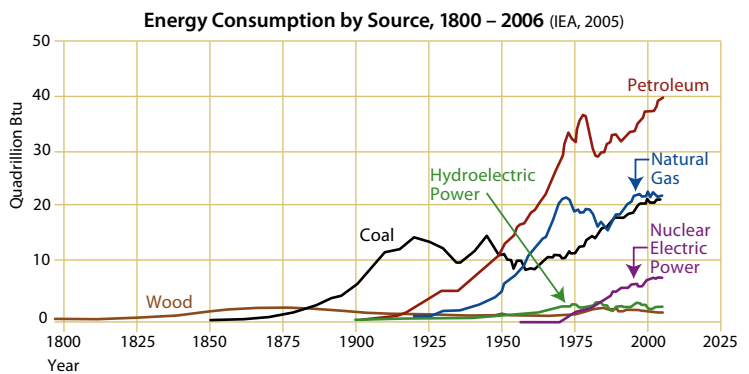
We find ourselves in 2010 in the early stages of a major revolution in primary global production of the materials and energy needed to serve human needs, particularly global agricultural production. In this framework, I'm borrowing heavily from Lee Lynd, on the faculty of Dartmouth. The first revolution was the agrarian revolution, in which the human species moved beyond its hunter-gather lifestyle to manage agricultural landscapes and their production for the first time. The second major shift was the industrial revolution, which included the industrialization of agriculture. The use of combustion engine-driven machinery and petroleum-derived agrochemicals have revolutionized and dramatically improved the productivity of an acre of farm land. The "Green Revolution" represents the impact of genetics on agricultural productivity, and this came towards the end of the industrialization of agriculture.

Our business strategy is driven by major long-term, durable changes in the global agriculture and energy economy.

Agricultural production of food, feed, fiber and fuel must be done in a sustainable manner.

These revolutions were driven by the opportunity to improve productivity, essentially a focus on improved use of inputs rather than quality of the output. And they were likely only recognized as revolutionary in hindsight. We are now envisaging a third major revolution, but one that we enter into with foresight of a future in which there are significant constraints on inputs, and which therefore requires a new set of sustainable practices in agriculture. We can think of this as a *sustainable revolution*, or a *renewable revolution*. We can also think of this as a *greener revolution*. The first green revolution deployed energy to drive productivity gains (e.g., fertilizer applications, pumping water); whereas the projected greener revolution will deploy information more effectively to drive productivity gains while reducing non-renewable energy inputs and minimizing other environmental impacts. Mendel is committed to this revolution, and to providing technology and products to serve the revolution.

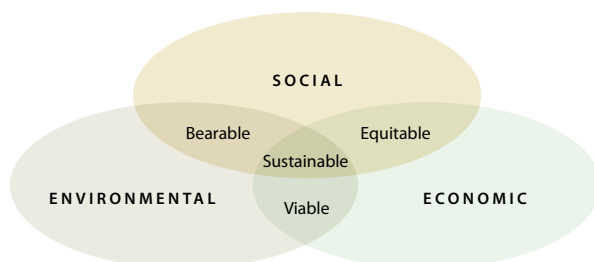
One important theme of this new revolution is ***the production of renewable energy through agriculture***, relying on plants as devices for capturing and storing solar energy in a cost-effective manner. The dominance of fossil fuels continues in the first half of the 21st century; however, we project renewable energy – sourced partly from agricultural systems – to be a major contributor before the century is over.



Agricultural production of food, feed, fiber and fuel must be done in a *sustainable* manner. Sustainability is one of the core values underlying our vision and our business, and motivating our employees. Amongst the many definitions of sustainability proffered in recent years, we have embraced the following one:

“Adopting practices and developing products that are environmentally, socially and economically sound, and that can meet present needs without compromising the ability of future generations to meet their needs.”

The three pillars of sustainability and sustainable development, and their interactions, are represented in a figure below.





Mendel scientists propagating miscanthus.

A major development in 2009 was the growth of the renewable, biomass market for generation of electricity. Many power companies now see biomass as a major long-term, reliable source of baseload electricity, particular in parts of the country where wind or solar are either not significant sources, or less reliable sources.

A major development in 2009 was the growth of the renewable, biomass market for generation of electricity.

Unfortunately, the regulatory environment for biotech traits has become more challenging in the past 2-3 years. The USDA has lost important legal battles challenging the legitimacy of their actions approving recent biotech products for alfalfa and bent grass. As a result, the time required for approval of field trial permits has lengthened, and the process for approval of products is becoming more cumbersome. Uncertainty remains about the complexity and time requirements for product approvals and field trial permits for a range of biotech products, with new regulations under consideration at the USDA for several years without final resolution. The importance of effective stewardship of our plant products and those of our customers, whether containing biotech traits or not, has continued to grow. Mendel is a founding member of the Excellence Through Stewardship® program; we passed our first audit of our R&D stage activities in 2009.

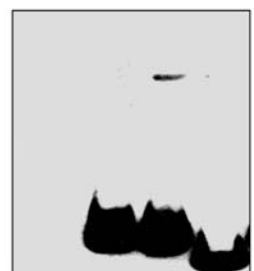
Core Technology and Traits Platform

Mendel has worked since its inception on the development and patenting of “traits” for improved plant performance, based on genomics and biotechnology tools and insights. We have done this using *Arabidopsis thaliana* as a model organism, taking advantage of the extensive international academic effort (over 12,000 scientists) to understand the function of all the genes and pathways of arabidopsis. We have focused on a large class of genes called transcription factors because each transcription factor can regulate and coordinate the expression of a set of effector genes that together determine specific plant traits.

We have identified **transcription factors** which control traits that are increasingly critical to sustainable agricultural production: efficient use of water and nitrogen, increased inherent crop yield per acre, efficient use of light energy, and reduced losses due to environmental stresses such as drought, heat, cold and disease. We have made many inventions in which altered expression of a transcription factor can be used to confer these desired traits. We have been increasingly successful in securing patents on these inventions, with a growing number of issued patents and pending patent filings in the U.S. and around the world. We also maintain a leading position scientifically through publication of some of our key results.

A new example from 2009 is shown below in work to identify the functional components of the interaction of a well-known transcription factor, Constans (CO), with sequences in the genome of *Arabidopsis*. The results, published in 2010, identify the genomic sequence through which Constans binds. Although Constans was identified 15 years ago, Mendel scientists were the first to demonstrate that Constans binds directly to DNA, and to identify the specific sequence.

CO Protein	+	+	+	+
CORE2	-	-	+	-
CORE2m	-	+	-	-
CCAAT-Box	-	-	-	+



We have identified transcription factors which control traits that are increasingly critical to sustainable agricultural production: efficient use of water and nitrogen, increased inherent crop yield per acre, efficient use of light energy, and reduced losses due to environmental stresses such as drought, heat, cold and disease.

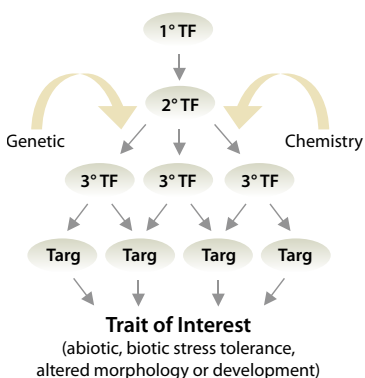
A transcription factor (TF) – a protein that directly or indirectly regulates the expression of plant genes – provides an important entry point to define the structure and organization of plant pathways, and to improve their regulation for improved plant performance. However, plants regulate pathway function using other protein types – the key insights for improvement of plant performance pertain to the pathways themselves. Mendel’s rapidly growing knowledge of plant pathway structure and function provides us with our key competitive advantage for improvement of crop performance through biotech traits and core crop genetics with customers such as Monsanto and in our own crop portfolio.

The agricultural biotechnology industry is developing new products based on the first phase of genomics-derived biological insights. Mendel has emerged as a leader in providing yield and stress-tolerance trait technologies to this industry. Our transcription factor, regulatory gene strategy has been validated through the advancement in January 2009 of a Monsanto product relying on a Mendel technology into Phase III development, which Monsanto describes as indicating a 75 % likelihood of commercial launch.



Dayton, Iowa — 2008: Higher-yielding soybean advanced to Phase 3 with continued demonstration of improved yield over conventional controls. (Photo Courtesy of Monsanto Company)

While there is great uncertainty and significant costs for the development of new trait products for each crop in which a new trait is introduced, the regulatory regime for agricultural chemistry has remained largely unchanged globally. One key advantage of the chemical approach to crop performance improvement is the low-cost extension of product registrations to new crops. However, the agrochemical industry has focused on the same product types for decades now, and is only now considering new uses of chemistry for new markets. Mendel’s knowledge of plant pathways and their role in specific plant processes offers a unique opportunity to open up this new market.



We have expanded our collaboration with Bayer CropSciences on the discovery of new types of chemicals that can be applied to crops to enhance their performance. The rationale is summarized in the figure below, which indicates that we can either use genetics or chemistry to regulate traits of high value to farmers. This chemical discovery program is based on high throughput chemical screening of synthetic chemical libraries, using our pathway knowledge, which allows us to find chemicals that regulate complex plant traits. Rather than having to measure drought tolerance or disease resistance of large numbers of plants in soil, which is very challenging and costly, we measure

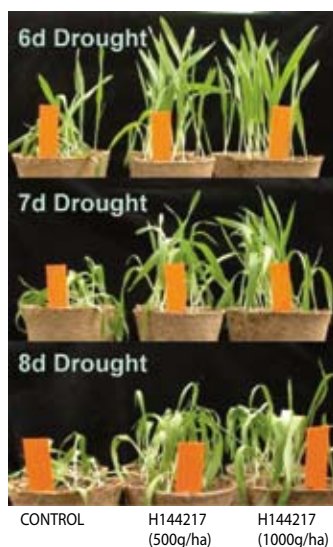
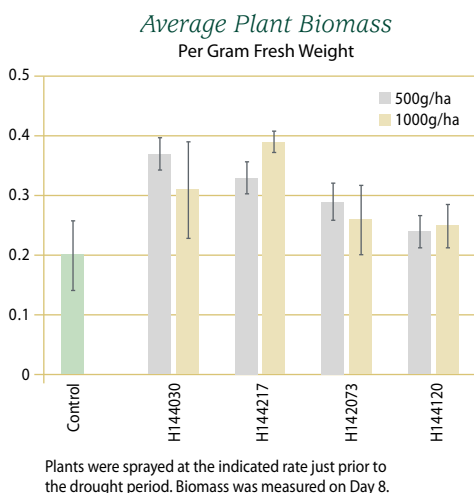
indirectly the function of a pathway known to control such traits in a low-cost, high throughput fashion. We have already been successful

“Any serious solution [for climate change] must rely mainly on creating a system that gives everyone a self-interested reason to produce fewer emissions.”

— *Paul Krugman, Nobel Laureate
Economist, New York Times*

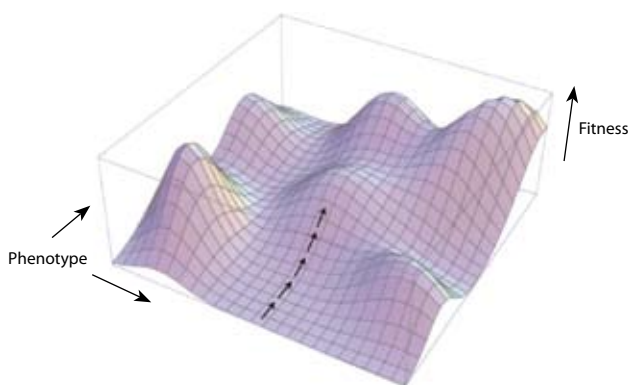


using arabidopsis to identify chemistries that have been applied to crop plants to confer stress tolerance. (See the example below, in which barley plants are more drought-tolerant following chemical treatment.) We expect to deploy this technology to develop novel agricultural chemistries that regulate additional plant traits.



Sustaining Our Technology Leadership

By 2011, we will be in the 14th year of an extended technology collaboration with Monsanto, who continues to be an outstanding collaborator and investor. As outlined above, we have developed a new suite of technologies and capabilities to support future value creation. Mendel has some unique advantages as a technology provider, based in equal measures on a) the unique intellectual property and technology portfolio we provide, b) the platforms we have developed, c) our outstanding scientific staff, and d) our early successes in identifying pathways that have been successfully deployed in crops. We will not only identify new pathways in the coming years that increase plant performance, we will use our already successful pathways as a platform for focused value creation.



For crops such as corn and soybean, yields continue to increase due to both improved genetics and management practices. Over the next 20 years, major yield and performance improvements are projected from genomics and biotechnology in all major crops. Through these tools, many ways have been identified, and are in development throughout the biotech industry, for improvement of inherent yield and stress tolerance.

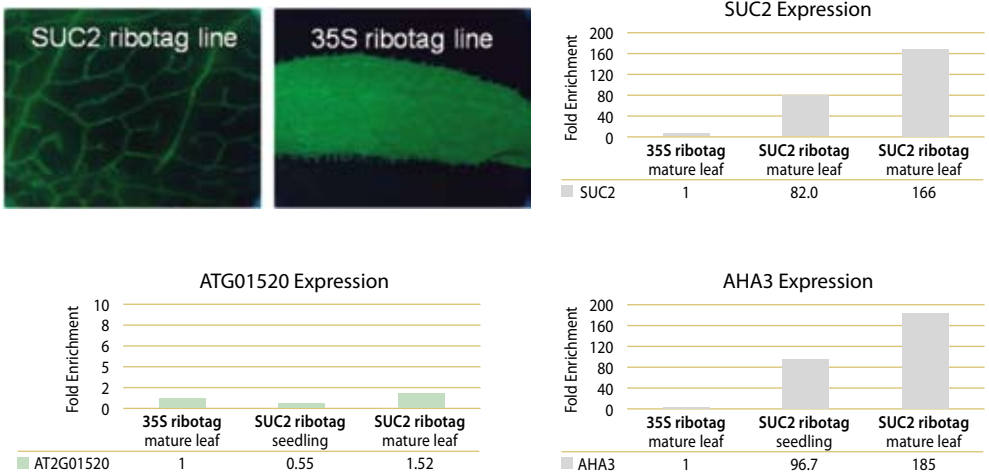
The key to continuous improvement is ensuring that each biotech improvement can be effectively stacked with other mechanisms of crop improvement. Mendel's broad knowledge about plant pathways and their regulatory control enables us to ensure that the crops we produce, and those of our customers, can continually climb up "fitness peaks", rather than being locked into local peaks with reduced potential. Since such "fitness curves" (see below) depend on the specific environment in which a crop is grown, we must also ensure that we can produce varieties performing optimally in different environments.

Mendel has emerged as a leader in providing yield and stress-tolerance trait technologies to the ag biotech industry.

Over the next several years, we intend to build upon our foundation in plant pathway biology by deploying the latest tools in computational and network biology to develop an understanding of gene regulatory networks in plants. Like a circuit diagram for an electrical appliance or an automobile, we are developing a biological circuit diagram that will provide an understanding of how our genetic technologies impact specific aspects of plant function, how multiple genetic technologies can be combined effectively, and ultimately providing novel insights for new inventions. Over the past two years, we made great strides with new technology platforms that we consider critical to the assembly of both local and global regulatory networks. We believe these new platforms and the insights we will develop with them will keep Mendel at the front of the innovation curve and provide major competitive advantage for genetic and chemical applications to crop improvement.

We have invested in new technology platforms over the past 3 years. Two of these provide unique insights into plant pathway structure and organization: cell type-specific global expression analysis; ChIP-Seq analysis of the locations in the plant genome where transcription factors bind to regulate gene function.

The figure below shows the capability of one of our cell-type specific global expression systems to provide a novel view of gene expression in individual cell types or tissues. Using such a tool, Mendel is able to specifically reveal the regulation of pathways that are critical to function of specific cell types. Since each plant cell type uses an overlapping but distinct suite of pathways, this knowledge gives us a competitive advantage in identifying novel strategies to improve plant performance.



When transcripts are specifically enriched in the cell type tagged by the SUC2 promoter, they are more abundant in the SUC2 ribotag than the 35S ribotag. Thus, the fold enrichment is high in both stages of plant development for SUC2 and AHA3 transcripts.

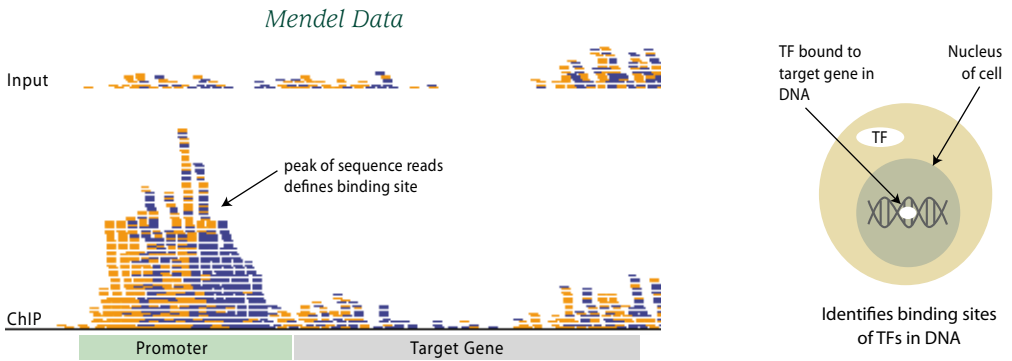
Our second new platform, ChIP-Seq, is a powerful tool for understanding the global function of the transcription factors, and other regulatory proteins, that are the focus of our technology business. Transcription factors bind to specific locations in a genome, and a knowledge of those locations enables us to better support the development of current biotech products and to develop new biotech products.

“To reach and exceed our biofuels targets, we will need to take a new strategic approach that continues to support the existing biofuels industry and accelerates the creation and rapid commercial deployment of new technologies so our Nation’s efforts to establish an advanced biofuels industry are met.”

— *Quote from “Growing America’s Fuels”,
February 2010*



A Transcription Factor (TF) operates by binding to short pieces of DNA in the chromosome in the nucleus of a cell (right side). We can detect this binding in a process that utilizes high throughput detection of the TF bound to these pieces of DNA, and by counting the number of DNA molecules, as represented by the lines below (left side).



The very specialized data on the interaction of specific regulatory proteins with the genome of any given plant, such as can be derived from these new technology platforms, enables Mendel to better understand the global regulatory circuits that are responsible for determining plant performance. With such information, we are better able to understand how to create future products in which each product is “fitter”, in a Darwinian sense, for the agricultural systems in which crops are produced today.

M Mendel BioEnergy Seeds (MBS)

Our MBS division entered a new phase in 2009. We began a new project with BP whose goal is to validate miscanthus as a premier, cost-effective temperate region biomass crop for biofuels. This program with BP also includes effort to validate other elements of our overall feedstock offering, including sorghum as an annual component. Feedstock production is evaluated in a range of geographies, since crop variety performance always varies in different geographies and climates.

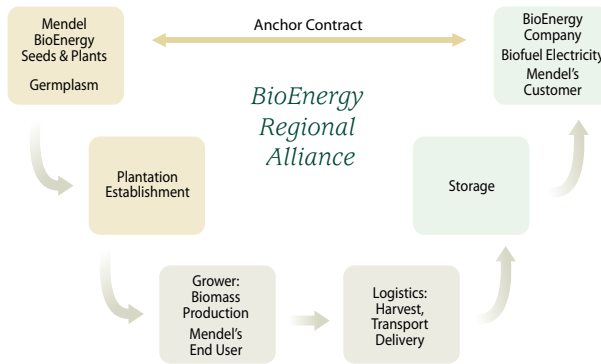
We have developed a new suite of technologies and capabilities to support future value creation for both agricultural traits and chemistries.

The Energy Independence and Security Act, signed into law December of 2007, mandates that a significant portion of U.S. transportation fuels be derived from cellulosic biomass. The market size for the feedstock component alone to meet this mandate is potentially well over five billion dollars by 2020. A dedicated crop which is a perennial – a plant that re-grows each year and does not require annual planting – is an ideal feedstock solution for lignocellulosic bioenergy, as annual energy and chemical inputs are minimized, and the period of light capture is extended compared to similar annuals. However, progress toward the targets set in EISA has been slower than anticipated, with the industry falling far short of the 2010 target of 100 million gallons of cellulosic ethanol. It seems unlikely that the industry will meet the mandates for 2011 or 2012 either, but will then be able to catch up as the mandates increase in volumes throughout the remainder of this decade. Fortunately, the biopower industry has grown more rapidly than we anticipated in 2009. We are focusing greater energy on demonstration scale projects with power companies.

While the bioenergy industry, and the production of biomass from purpose-grown energy crops to serve that industry, is in its infancy, we can envision likely future supply chain structure, from germplasm developers such as Mendel, through to the biorefineries or power companies that will consume the feedstocks produced by farmers utilizing our plant and seed products (see next page). Since

grass-derived biomass has low energy density, we project that the dominant bioenergy system will have a highly integrated and local structure, with as much as 40,000 acres serving a 50 million gallon/year biorefinery within a 25 mile radius of a new facility. Significant steps are being taken to densify biomass near its production site to enable greater logistical flexibility.

The need to pretreat biomass for co-generation with coal, for example, can be addressed by pelletization, with the resulting material more economically transported. Companies that source feedstock from growers using Mendel genetics to produce pellets become an additional customer for Mendel products.



The biopower industry grew more rapidly than we anticipated in 2009. We are focusing greater energy on demonstration scale projects with power companies.

Mendel has chosen to focus on **C4 grasses** (a class that includes, for example, *miscanthus*, switchgrass, sugarcane, sorghum) as the primary focus of our future business serving the bioenergy industry. This new business leverages the technology portfolio and knowledge of plant pathways that Mendel developed as a technology company during our first 10 years in existence. Unlike some other businesses we've considered entering over the years, there are no significant barriers to entry and a true green field exists to develop this new seeds business.

We began in 2005 on the development path to create what we refer to as our **BioEnergy Seeds** business. We recognized at the time that we would need significantly more growth capital than the company had available to pursue the opportunity and some new corporate competencies. We also recognized we would benefit in many ways from collaboration with a potential future customer of our seed, genetics products. We entered into a long-term collaboration with BP in May of 2007 towards the development of this seeds and feedstocks business, largely focused on perennial grasses, and at the same time executed a financing that was led by BP.

We have now grown the seeds effort to include multiple locations, including a research site we own in Tifton, Georgia, along with our leased research site in West Lafayette, Indiana. We also have a major demonstration project with Don Halcomb, of Walnut Grove Farms in southwestern Kentucky. We expect to have nearly 200 acres of miscanthus growing in 2010. We are working to develop and support much larger projects in 2011, with individual projects having several hundred or even a thousand acres.

We have received some funding from the Department of Energy to support applied research on the genetics of *Miscanthus*, and downstream logistics development. The former is being conducted with Andy Paterson at the University of Georgia, in a project that will take advantage of Dr. Paterson's expertise in sorghum to advance knowledge about the genome of *Miscanthus*, a closely related species.



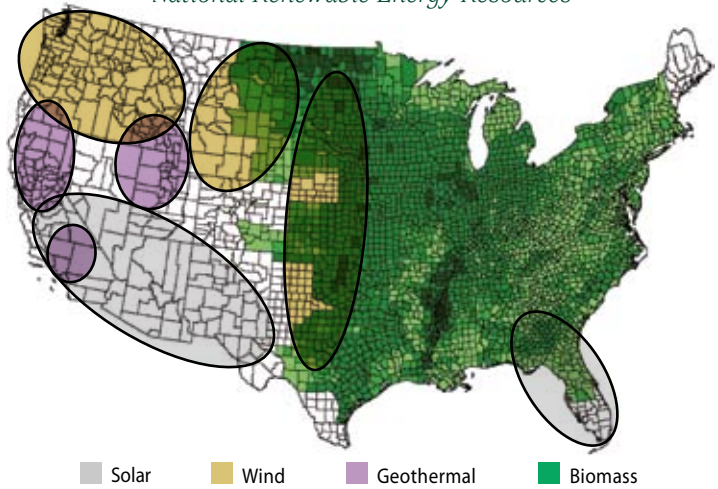
Mendel has an industry-leading collection of miscanthus varieties.

Emerging Markets for Our Energy Grass Products

When we first contemplated a bioenergy seeds business, our primary focus was on the projected emerging biofuels market. This market has been slowed by the difficulty of financing the first commercial scale biorefineries in the recent difficult financial environment, as well as the typical challenges getting entirely new supply chains and refinery processes built and validated. Fortunately, the power sector has become increasingly interested in renewable electricity generation, motivated in part by renewable electricity standards (RES) in many states.

As the figure below shows, wind and solar energy are promising sources for renewable generation in some parts of the country, but not generally in the eastern half of the country. The green-colored regions in the figure indicate where perennial grasses can be productively grown, and where they can also offer growers an economically attractive option to current crop choices. For these reasons, a number of power companies have identified biomass as an attractive option, and some are beginning to recognize the advantages of a “closed-loop” system for producing biomass from purpose-grown energy crops. The demand for biomass for electricity is growing rapidly.

National Renewable Energy Resources



A major near-term use for biomass in electricity generation is for co-generation of electricity with coal, displacing perhaps 10-20% of coal-based generation. Fortunately, the map above and the following map indicate strong co-location of biomass production capability from purpose-grown energy crops with coal-fired power generation.



We are working to develop and support much larger biomass projects in 2011, with individual projects having several hundred or even a thousand acres.

Miscanthus as a Premium Feedstock for Power Generation

As we have been developing our new varieties, our variety development capability, and the systems for establishing fields and producing miscanthus biomass, we have also been evaluating the specific potential for miscanthus to be co-fired with coal. This includes analysis of the specific properties of miscanthus compared with target specifications, and pre-treatment of miscanthus biomass to prepare the material for co-firing. The photo below illustrates one common form of densified biomass for co-firing, pellets. Such pellets have been used to generate heat and power for generations

The table below summarizes the properties of our miscanthus product candidates compared with other common biomass sources for power generation. Both our initial clonal and seeded product candidates have very competitive properties for this use.

Fuel Properties	Mendel <i>Miscanthus</i>	Switchgrass	Woody	Ag Residues
Energy density (<i>BTU per lb</i>)	7800 – 8300	=	+	= / -
Moisture	≤ 15%	=	-	= / -
Ash (%)	2 – 5%	-	+ / -	-
Pre-processing costs (<i>pellets</i>)	20 – 30% reduced variable costs	=	-	+ / -
Grind-ability (<i>particle size</i>)	Good	-	=	-

KEY: + Favorable by comparison
 - Unfavorable by comparison
 + / - Varies by source
 = Similar by comparison

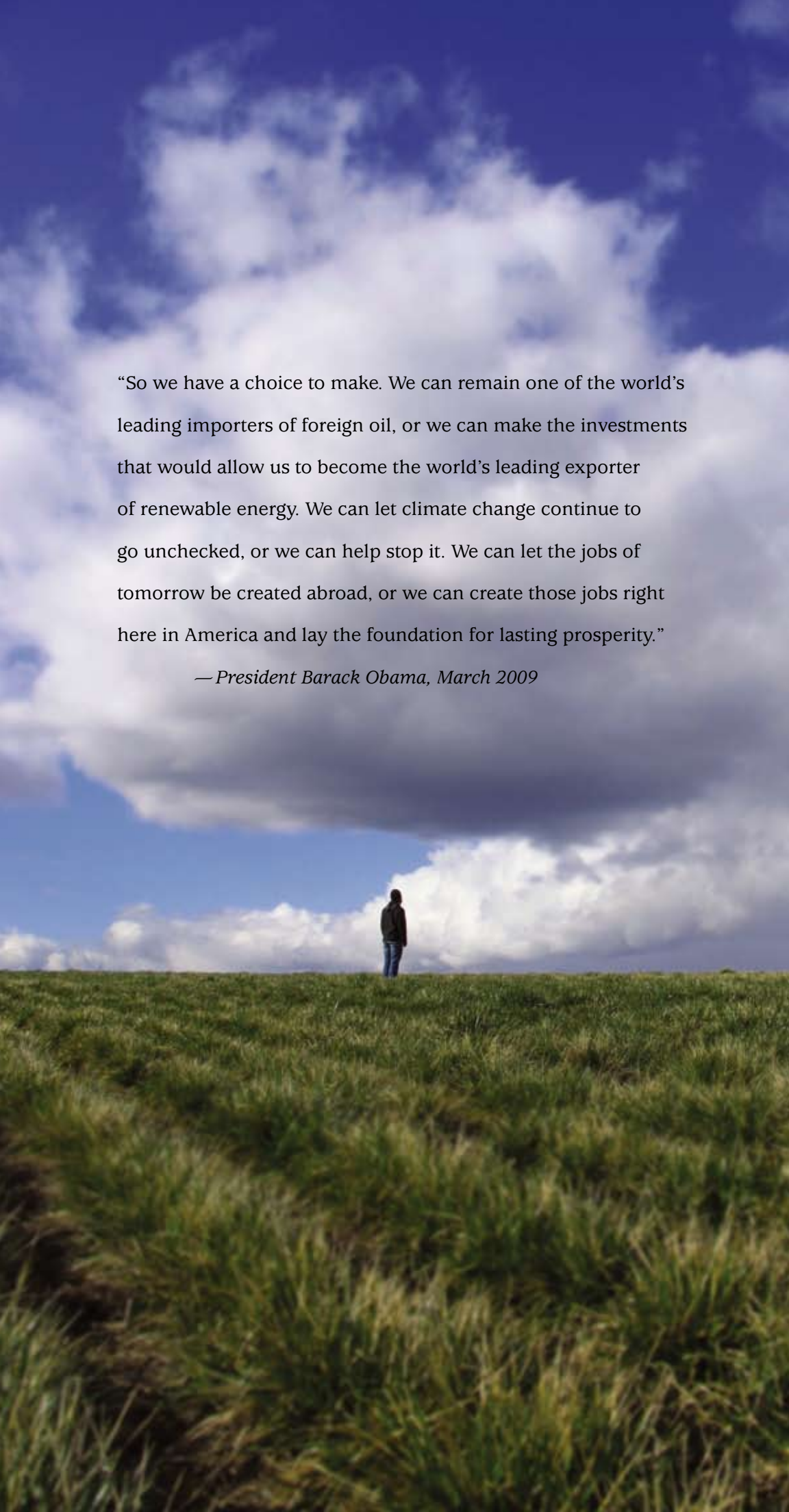
The Importance of Seed-derived Products

While we are taking strides to commercialize our first generation miscanthus products, based on proprietary clonal varieties, we have a very clear goal of being the first company to market biomass-type miscanthus varieties produced from seed. The cost of establishing an acre of miscanthus can be reduced several fold if produced from seed and established from transplant plugs (small living plants that are directly planted into a commercial field). The cost of establishing an acre can be further reduced by directly planting seed into a commercial field. The inventory management and scalability of miscanthus from seed is superior to clonal miscanthus.

Mendel made significant strides in 2009 towards the commercialization of seeded miscanthus for bioenergy projects. We identified a set of very promising candidates for our first seeded products, with parental lines identified for those products. We gathered data on the growth of some of the candidates at a few locations in the United States, with initial validation that these seeded products can perform comparably to current clonal products in at least some locations.

Mendel is committed to the development and release of new miscanthus varieties with little potential for invasiveness and to the development of management practices that limit invasiveness potential. We are also committed to the establishment of a stewardship program to manage our entire portfolio of grass products for the bioenergy industry.

We have a very clear goal of being the first company to market biomass-type miscanthus varieties produced from seed.

A person stands in the distance on a vast, green, grassy field. The sky is a deep blue with large, white, fluffy clouds. The person is wearing a dark jacket and blue jeans. The overall scene is serene and expansive.

“So we have a choice to make. We can remain one of the world’s leading importers of foreign oil, or we can make the investments that would allow us to become the world’s leading exporter of renewable energy. We can let climate change continue to go unchecked, or we can help stop it. We can let the jobs of tomorrow be created abroad, or we can create those jobs right here in America and lay the foundation for lasting prosperity.”

— *President Barack Obama, March 2009*

Our Strategic Collaborators

I feel fortunate having top-notch, premier companies as collaborators for our two major business divisions: Monsanto for genetic traits, and Bayer for chemistries, in our Technology business; BP for our BioEnergy Seeds business. Our relationship structures and the role we play for each of these companies differ significantly.

MONSANTO
imagine®



Monsanto has an ongoing, premier seeds and ag biotech traits business, and we develop and license to them technologies for incorporation into their R&D pipeline. Monsanto funds us to do this, and we receive royalty and milestone payments on the developed products – a fairly typical biotechnology industry relationship. We collaborate closely with Monsanto through their biotechnology/genomics group.



Bayer CropScience

Bayer CropScience collaborates with us for the discovery of novel agrochemicals that improve plant performance. The program is a continuation of previous joint activities which focused on the elucidation of stress response mode of actions of Bayer agrochemicals. The program aims to discover and develop chemical products that regulate plant stress tolerance, or that strengthen plants and increase yield. The program leverages Mendel's knowledge of plant transcription factor pathways with the expertise of Bayer CropScience as a leader in agricultural chemistry. Bayer represents an excellent channel for commercialization of novel agrochemicals.



BP is developing advanced biofuels and foresees a need for the types of biomass feedstock genetics Mendel is developing. While they are focused on their first commercial biofuel project in Florida today using energycane as feedstock, they continue to work with us to evaluate miscanthus for future biofuel projects in more northern locations. Their funding supports development of a new Mendel business, offering dedicated energy crops to refinery and power customers, with BP as a preferred customer. We have been working closely with BP's Biofuels Business Unit in the past year, and have made significant strides in building an outstanding collaborative environment.

Future Prospects and Directions

Mendel is in a major transition from a company with a strong brand in the plant sciences industry and a focus on technology creation, to one that is additionally known for its leading products in an emerging agricultural sector. We have identified our first miscanthus products, both clonal products for the near-term market, and seeded products for the longer-term market. We are working to secure many hundreds or a thousand acres of demonstration scale projects in 2011, with a promise of many thousands of acres of projects in 2012. Our success will have substantial implications for the company's organization in 2011 and beyond, a topic for next year's shareholder letter I hope.

I am – as always – grateful to be a part of the Mendel team, which I've been for nearly 8 years now, and to have the distinct pleasure of leading this organization towards realization of shared *agricultural and energy visions* through differentiated genetics, which I've done for over three years now. The renewed technology strategy we adopted in 2007, with a strong commitment to new tools for gene discovery and understanding network biology, are bearing fruit already through novel insights in our current technology program with Monsanto. The breeding and agronomy programs in the United States for miscanthus improvement and production are bringing value already as we envision the products of today and tomorrow.

As a management team, we remain committed to our shareholders to grow the value of the company and to help you realize that value in the years ahead.

Yours,

Neal Gutterson, Ph.D.
President & CEO
May 15, 2010

D Directors, Management, and Scientific Advisors

Board of Directors

Peter Davis, Ph.D.
Chairman

Neal Gutterson, Ph.D.
President & CEO

Justin Adams
Business Unit Leader
for Venturing,
Alternative Energy, BP

Richard T. Crowder
Professor, Strategic Management
and International Trade,
Virginia Tech

Mark Lampert
General Partner
Biotech Value Fund

Stephen Padgett, Ph.D.
Vice President, Biotechnology
Monsanto Co.

Brian Staskawicz, Ph.D.
Chair, Department of Plant and
Microbial Biology, UC Berkeley

Neil Wallack
President
ZBI Ventures

Executive Team

Neal Gutterson, Ph.D.
President & CEO

Ajay Sabherwal
CFO

Greg Ikonen
General Counsel

Oliver Ratcliffe, Ph.D.
Sr. VP Research

Don Panter, Ph.D.
Sr. VP BioEnergy Seeds

Aaron Schuchart
VP Business Development

Chris Williams-Campbell
VP Human Resources

Scientific Advisory Board

Chairman

Brian Staskawicz, Ph.D.
UC Berkeley
(National Academy of Sciences)

Fred Ausubel, Ph.D.
Harvard University
(National Academy of Sciences)

Joseph Ecker, Ph.D.
Salk Institute
(National Academy of Sciences)

Jonathan Jones, Ph.D.
Sainsbury Laboratory
(Royal Academy of Sciences)

Elliott Meyerowitz, Ph.D.
Cal Tech
(National Academy of Sciences)

Andrew Millar, Ph.D.
Edinburgh University

Andrew Paterson, Ph.D.
University of Georgia

Ulrich Schirmer, Ph.D.
ex-BASF VP R&D

Charles Wyman, Ph.D.
UC Riverside



“The irony is that most farmers in Africa today are already de facto organic, because they do not use any GMOs, or any nitrogen fertilizers, or any synthetic pesticides. This has not made them either productive or prosperous. Nor has it provided any protection to Africa’s rural environment, where deforestation, soil erosion, and habitat loss caused by the relentless expansion of low-yield farming is a growing crisis.”

— Robert Paarlberg, March 2009



Mendel greenhouse,
Hayward, California.



Mendel Biotechnology

3935 Point Eden Way

Hayward, CA 94545

Phone 510-264-0280

Fax 510-264-0254

www.Mendelbio.com