Panel: Private Investing in Biotechnology

Trends Impacting Financing & Innovation in Agbiotech

David McElroy, President – Targeted Growth, Inc.

Farm Foundation Meeting – Second Decade of Crop Biotechnology
Washington, D.C. – January 16th – 17th, 2008

Trends Impacting Financing & Innovation in Agbiotech

Targeted Growth, Inc.

Headquartered in Seattle with satellite office locations in Canada and several other states in the US.

Historically focused on developing agronomic traits to optimize crop productivity for nearly a decade.
•Research and commercial partnerships with leading seed companies

Core focus is currently renewable energy - using technology to create dedicated fuel crops
•Leveraging science and biology to ensure the living things that serve as energy feedstocks are as renewable, sustainable, affordable and optimized

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Disclaimer #1

The views expressed in this presentation are those of the author and not necessarily those of the authors past or present employers or anyone affiliated with the authors past or present employers

Trends Impacting Financing & Innovation in Agbiotech

What are the trends impacting financing and innovation in crop biotechnology?

What might be the shifts in the types of crop biotech products that are developed as a result of these trends?

Trends Impacting Financing & Innovation in Agbiotech

Definitions:

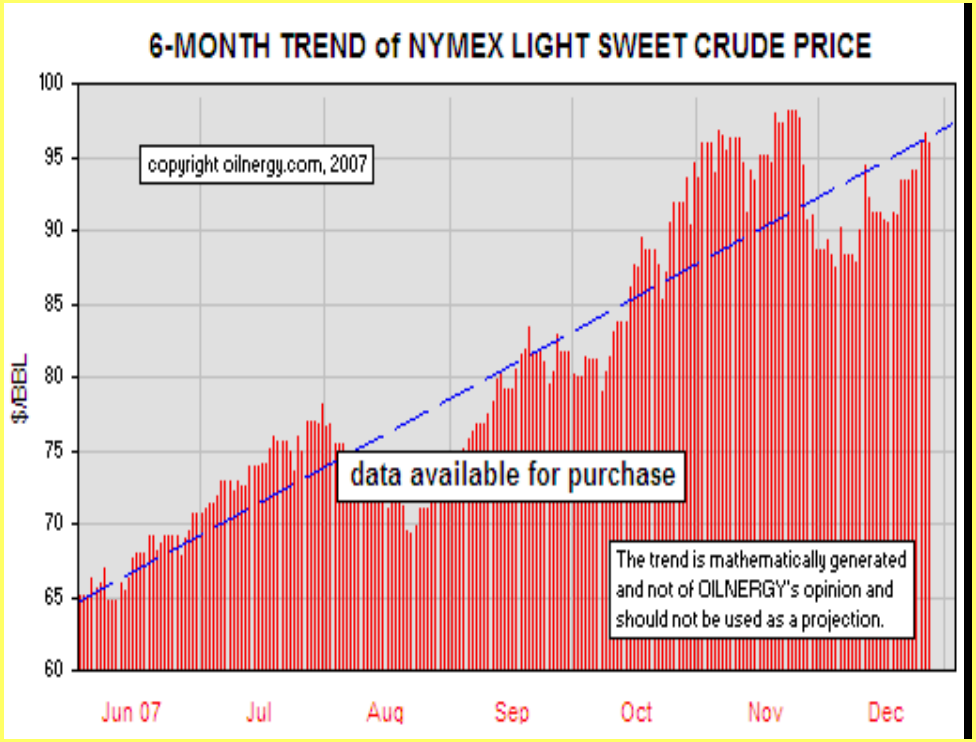
•*Trend* – An observed relationship used to predicted future activity based upon historical data

•*Financing* - The obtaining of money resources

•*Innovation* – The invention and commercial exploitation of something new

•*Agbiotech* – Traits, enabling technologies and genomics technologies used in row crop products

Trends Impacting Financing & Innovation in Agbiotech



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Oil “crisis” (~60 years supply left) and the resulting push on prices paid for agricultural feedstuffs used in biofuels

- New agbiotech product targets –petrochem. substitution products, e.g. bioplastics, biofuels, etc.
- More “bandwidth” for exotic lignocellulose energy crops despite business model issues. e,g., switchgrass, Miscanthus, etc.
- Leveraging of agbiotech assets into new biorenewable areas, e.g. algae
- New sources of financing for crop-based biofuel projects, e.g. big oil, green VCs, Government

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Increasing domestic and international governments support of strategic innovation in crop research to help kick start new growth businesses of the future

- Large corporate “rebranding”/financing efforts in the crop-based biofuels space, e.g. DuPont, DOW, Cargill, etc
- Startups “reinventing” themselves as energy companies in order to secure government and/or oil co. financing, e.g. Ceres, Mendel, Targeted Growth, etc
- “Insourcing” of corp. R&D close to crop talent/funding pools, e.g. China, India

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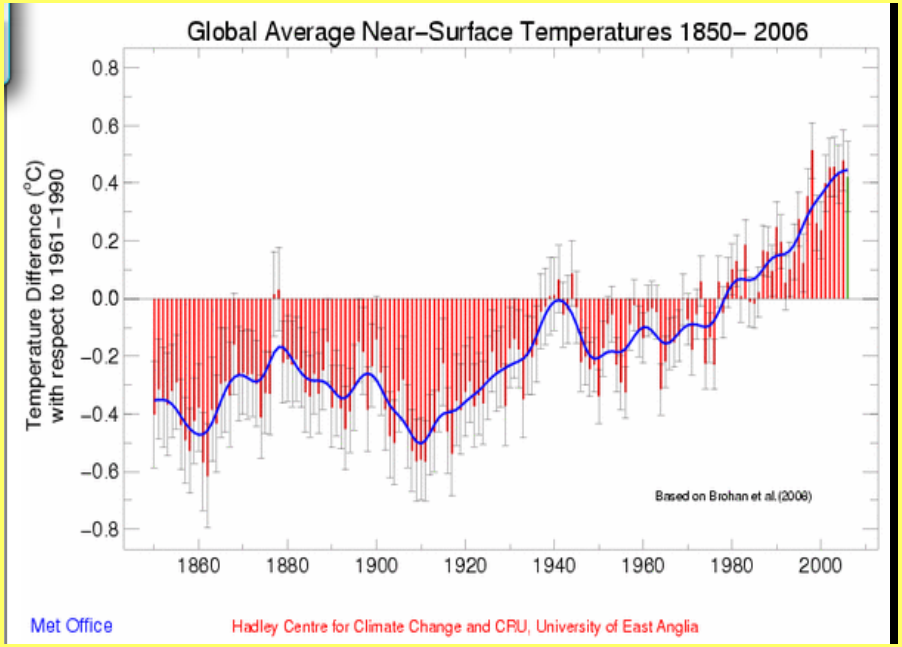

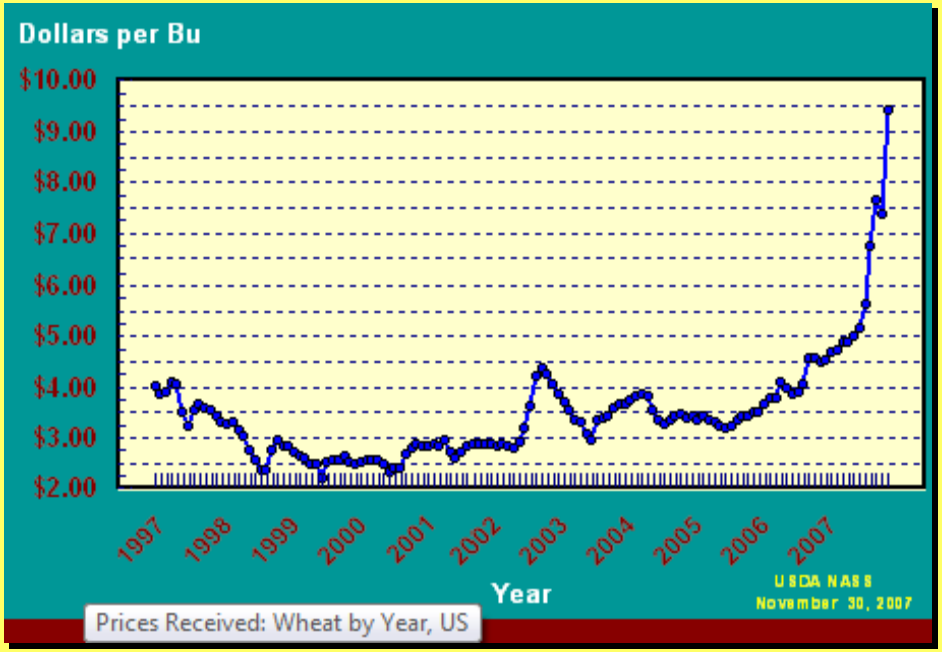

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Food “crisis” (~ 60 days inventory left) - global warming/climate change, environmental issues compromising food inventories, increases in commodity prices and the desire for a more carbon neutral economy

- New opportunities and sources of creative financing for plant-based climate solutions, e.g. Arcadia NUE rice carbon trading scheme
- Ever increasing emphasis on deploying “sexy” abiotic stress tolerance technologies, e.g. MON:BASF relationship

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Increased competition between feed/food vs. fuel demand for crop products and concerns about the “green-ness” of current commodity corn-base ethanol

- Development of new biofuels crops targeting “marginal land”
- Development of superefficient biofuel crops targeting prime land
- Continuing emphasis on *per se* yield as a key target for agbiotech

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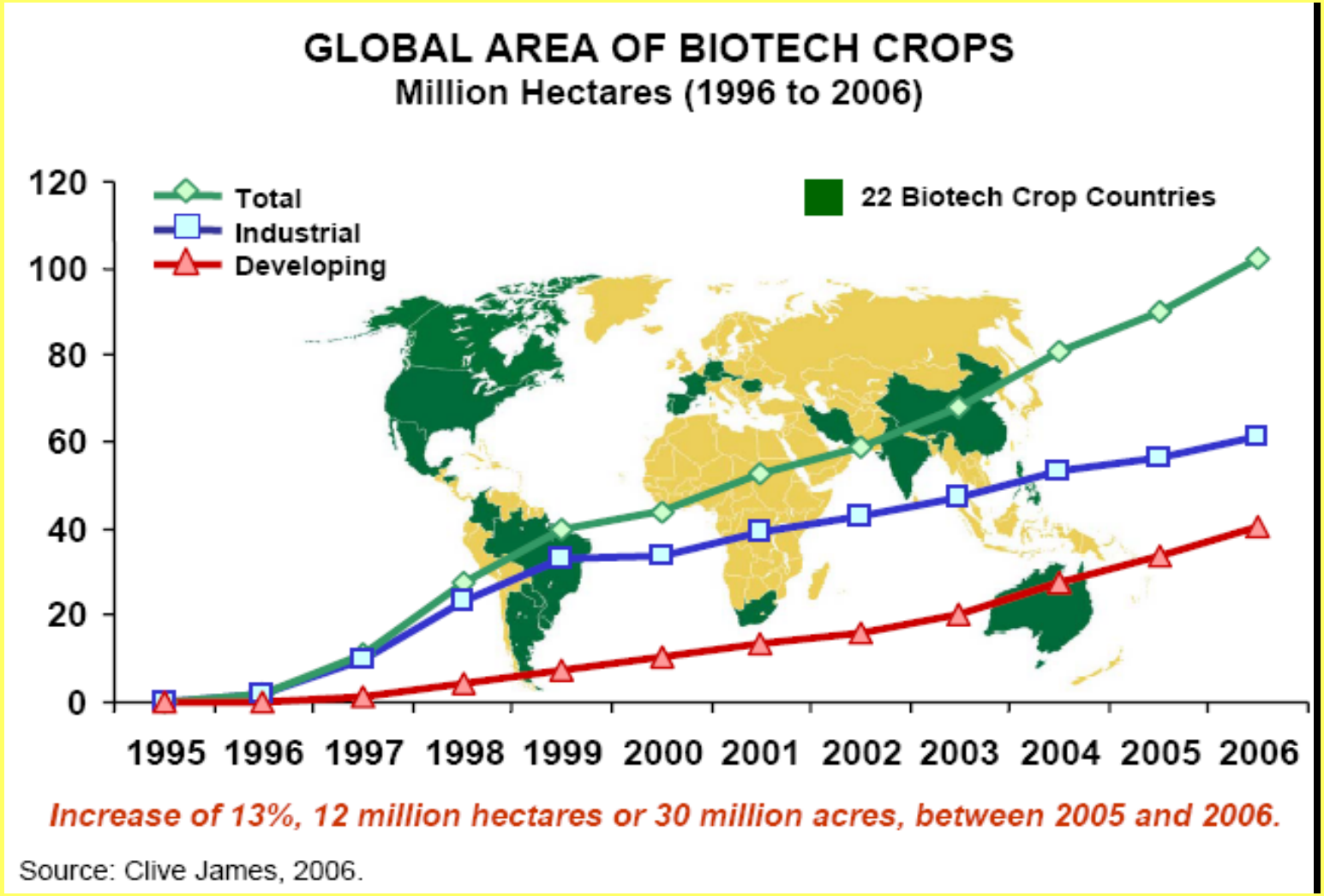

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Ever increasing pressure (subsidy issues, demographics, etc) on farmers to improve productivity through the adoption of new technologies, including crop biotechnologies

- Opportunities to develop trait products targeting large ex-US markets rather than simply leveraging traits developed primarily for N. America

Increasing globalization of agbiotech coupled with key enabling agbiotech IP coming off patent in the 2010 – 2015 timeframe

- Opportunities for agbiotech “generics” from new competitors in India and China

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Escalating cost of regulatory approvals for transgenic products

- Increasing emphasis on genomics-based non-GM trait solutions

Increasing complexity of agbiotech products – today triple stacks … tomorrow OctiStax™

- Opportunities for new process (enabling) technologies that simplify and/or modularize transgenic product development, e.g. minichromosomes, homologous recombination, etc.

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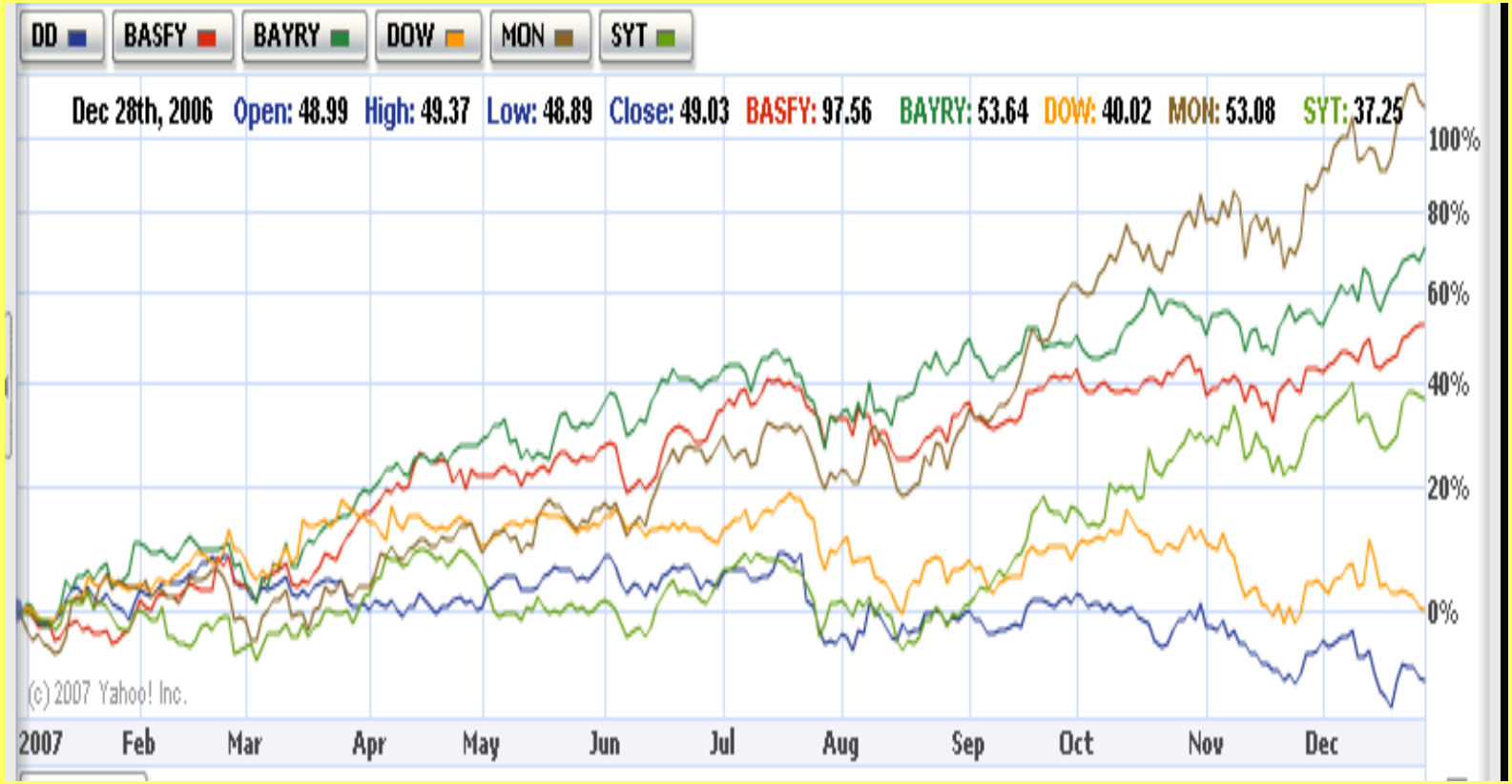

P/E – Dec 28th, 2007
MON – 62.2
SYT – 28.0
DOW – 11.5
DD – 12.5

P/E – Dec 28th, 2007
FSLR – 194.2
MON – 62.2
GOOG - 55.0
MSFT – 23.7
WFG – 11.5

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Ongoing over demand for crop products globally, especially in China (adding ~40mm new middle class food consumers per year), and the continuing adoption of primarily Monsanto's crop biotech. products

- Increase ability of Monsanto to drive revenue-based R&D arms race beyond the grasp of the other five of the "big six".
- Pressure on diversified conglomerates to rebrand themselves as pure play agribusinesses in order to garner Monsanto-esque P/E ratios
- Pressure on large agribusinesses to maximize R&D scale while minimizing the impact of R&D expenses on "E" through creative financing of research
- Ongoing agribusiness consolidation/agbiotech R&D asset concentration
    - Enabling technology IP cartel issues and impact on proof-of-concept invention by startups especially in the commodity ag. trait space
    - Limited number of customers for agbiotech startup M&A – need

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Disclaimer #2

Information in this presentation includes forward-looking statements that involve undefined risks and uncertainties likely not captured in a simplistic analysis of current trends. Actual outcomes can be 100% guaranteed to differ materially from the outcomes predicted here.

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