A FIRM’S PERSPECTIVE ON BIODIESEL

Paul T. Prentice Ph.D.
Vice President
Agriculture Blue Sun Biodiesel, LLC
“Superior Diesel Fuel. Guaranteed.”
Fusion B20: Guarantee

We can offer this because we maintain superior quality throughout our entire distribution network…

If Blue Sun B20 is ever proven to be the direct cause of damage to your OEM-warranted fuel system materials, Blue Sun will repair or replace the damaged material at no cost to you.
Renewable Energy Headwinds

- Food v. Fuel
- High feedstock cost
- Net environmental footprint
- Government mandates
The Biodiesel Process

1. Energy Crop R&D
2. Farming
3. Oilseed Crushing
4. Crop Oil
5. Meal
6. B100 Processing
7. Biodiesel
8. Blending
9. Glycerin
10. Market
Blue Sun Seed Division

- U.S. Market Potential
- Market Drivers
- Canola – Camelina
- Blue Sun Genetics
- Paths to Market
Blue Sun Feedstock Sources

Our B100 incorporates only the best quality feedstock oils...
Potential New U.S. Oilseed Acres (total potential 35 million)

• Market signals are telling farmers to plant more non-soy oilseed acres.
• U.S. winter wheat acres of 45 million can be rotated one-third into canola-camelina for a potential of 15 million acres.
• U.S. spring wheat acres of 15 million can be rotated one-third into canola-camelina for a potential of 5 million acres.
• U.S. feedgrain-soybean acres of 175 million can be double-cropped in about 15 million acres.
Oil content of seed is increasing in value making oilseeds a better investment for farmers and for Blue Sun...
Bunge
World’s Largest Oilseed Processor

• Stock up five-fold in five years
Canola is primarily grown in Canada
14 million acres vs. 1 million acres in the U.S.
US Canola Market

U.S. Canola-Camelina Potential is Huge

Rotation Crop for one-third of 45 million winter wheat acres (15 million)...

Winter Wheat 2006
Planted Acres by County

US Department of Agriculture: National Agricultural Statistics Service
U.S. Canola-Camelina Potential is Huge

Rotation Crop for one-third of 15 million spring wheat acres (5 million)...

Other Spring Wheat 2006
Production by County

Bushels
Not Estimated
< 500,000
500,000 - 1,499,999
1,500,000 - 2,999,999
3,000,000 - 4,999,999
5,000,000 - 7,999,999
8,000,000 +

U.S. Department of Agriculture, National Agricultural Statistics Service
Double-crop for 10% of feedgrain-soybean acres (15 million)…
Double-crop for 10% of feedgrain-soybean acres (15 million)...
Additional Potential for a Share of 35 Million Conservation Reserve Acres
(crops designed for marginal land)

CRP Enrollment, 2004

- 10,000 acres originally enrolled between 1986-1992 that were re-enrolled between 1993-2004
- 10,000 acres of newly enrolled land between 1993-2004

Source: ERS analysis of contracts database of USDA’s Farm Service Agency.
Canadain Canola Yeild

![Chart showing Canadian Canola Seed Market from 1986 to 2006. The chart displays historical data with a trend line indicating a steady increase in yield over time. The x-axis represents years from 1986 to 2006, and the y-axis represents yield in pounds per acre ranging from 600 to 2200 lbs/acre. The chart is labeled "Total Canada."
Blue Sun Genetics

Charlie Rife
5174 Road 72, Torrington, WY

2005-Present, Blue Sun Oilseed Breeder
1993-2004, Canola Breeder, Kansas State University
1993, PhD. Plant Breeding, Kansas State University
1987, MS. Plant Breeding, University of Wyoming
Improved oilseed genetics mean higher yield and lower cost for Blue Sun...

- Proprietary genetics create intellectual property for Blue Sun
- Dr. Charlie Rife has been breeding canola since 1993
- Developed the successful Wichita winter canola while at KSU
- Blue Sun has breeding headquarters in Torrington, WY
- Currently breeding canola, camelina, and other mustards exclusively for Blue Sun
- Low water-use crops for dry land farming on marginal acres

Blue Sun’s breeding focus: high yield, high oil content, low input cost, high meal value oilseeds that have low saturated and polyunsaturated fatty acid levels.
Focus on Canola & Camelina

Superior Oilseed

High oil content (40% v. soy at 20%)
Low Saturated Fatty Acid Profile (7% saturated v. soy at 15%)
## OP vs Hybrid

<table>
<thead>
<tr>
<th>Open Pollinated</th>
<th>Specialized Hybrid</th>
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</thead>
<tbody>
<tr>
<td>• Marketable within 2 years</td>
<td>• At least 3 years to market</td>
</tr>
<tr>
<td>• Proven technology</td>
<td>• Unproven technology</td>
</tr>
<tr>
<td>• Growers can plant OP back</td>
<td>• Improved nutrient use efficiency</td>
</tr>
<tr>
<td>• Nobody can sell our OP cultivars</td>
<td>• “Only game in town”</td>
</tr>
<tr>
<td>• Released OP cultivars does not constitute our germplasm</td>
<td>• Growers can’t plant back seed</td>
</tr>
<tr>
<td>• $1-$3/lb Market Price</td>
<td>• $3-$4/lb Market price</td>
</tr>
</tbody>
</table>
Herbicide Technology

- Many Available
  - Clear Field
  - Roundup-Ready
  - Liberty-Linked
  - Others not yet labeled
    - Atrazine
    - Etc.
Camelina

- Fills a specific market niche (very low water use)
- Rotate as a “non-food” crop
- Very low production costs

![Graph comparing water usage of Camelina and Canola]