IMPACT OF CHANGING MRL STANDARDS ON THE ALMOND AND SOYBEAN INDUSTRY

Riya Deb, Evan Kern, Evan Pinkett, Garrett Johnston, Marianne Benyamin, Nigel Good
AGENDA

01. OVERVIEW

02. The Current State of the Soybean & Almond Markets

03. Trends in Pesticides and MRLs

04. Concluding Thoughts
Maximum Residue Limits are the highest level of pesticide residue allowed in or on food or feed.
FARM-TO-FORK AND THE EU GREEN DEAL

Farm-to-Fork Strategy’s Overall Goals

- “Ensure sustainable primary production”
- “Stimulate sustainable food processing, retail, hospitality and food services’ practices”
- “Promote sustainable food consumption, facilitating the shift towards healthy, sustainable diets”
- “Reduce food loss and waste”
CURRENT STATE OF FARM-TO-FORK STRATEGY

Farm to Fork Implementation Controversy

- Covid-19 has delayed plans to implement Farm to Fork
- Significant social pressures have mounted to release the plan details
- COPA-COGECA has been a big voice of opposition, arguing the agriculture industry is under too much pressure to adhere to new regulations
WHY ALMONDS AND SOYBEANS?

1. The US is the largest almond supplier to the EU

2. Soybeans were the 12th most valuable U.S export in 2019 at $18.7 billion
ALMONDS
US ALMOND INDUSTRY OVERVIEW

- California produces 80% of the world’s almonds
- Largest exports go to India, China, and the EU
- $5.6 billion industry
ALMOND MARKET SUPPLY CHAIN

Largest Almond Producing Countries

- United States (Almost 80% of world production)
- Spain (10% of world production)
- Italy (<4% of world production)
- Greece (3.7% of world production)
- Iran (1.8% of world production)

Largest Almond Buying Countries

- Spain (27% of EU Market)
- Germany (24% of EU Market)
- The Netherlands (8% of EU Market)

(In other Markets)

- India ($600 Million)
- China ($538 Million)
- UAE ($389 Million)
US ALMOND MARKET ADVANTAGES

1. Highly Centralized
2. Head Start on Pesticide Reduction
3. Majority Market Share
# EFFECTS OF COVID-19 ON THE US ALMOND INDUSTRY

<table>
<thead>
<tr>
<th>01</th>
<th>02</th>
<th>03</th>
</tr>
</thead>
<tbody>
<tr>
<td>Besides the EU, China is the second largest export market for US almonds</td>
<td>Almond shipments are currently being offloaded due to closed ports in China</td>
<td>Almond harvests are being stockpiled in the US potentially decreasing future prices for US Consumers</td>
</tr>
</tbody>
</table>
SOYBEANS
US SOYBEAN INDUSTRY GROWTH DRIVERS

Record 2.1B bushels of soybean crush in 2020

Domestic use of soybean oil projected to grow 2%

Exports projected to grow by 225M

USDA projects China's soybean imports will increase to 89 mmt in 2020

24.7%

Decrease in US projected ending stock in 2020

12.6%

Projected growth in exports in 2020/21
THE US SOYBEAN EXPORTS

Top 10 U.S. Export Markets for Soybeans

- China
- EU27/UK
- Mexico
- Egypt
- Japan
- Taiwan
- Pakistan
- Thailand
- Bangladesh
- Indonesia

Soybeans in metric tons: 0, 2,000,000, 4,000,000, 6,000,000, 8,000,000, 10,000,000, 12,000,000

Export Markets:
- Oct.-Feb. 2019
- Oct.-Feb. 2020
CATTLE ON FEED
US Total, Monthly

Data Source: USDA-NASS
Livestock Marketing Information Center

CATTLE SLAUGHTER
Federally Inspected, Weekly

Data Source: USDA-AMS & USDA-NASS
Livestock Marketing Information Center
PESTICIDES
GLYPHOSATE

Current MRL: 20 mg/kg

2500–10,000 metric tonnes of glyphosate enter the global supply chain yearly from USA, Argentina, and Brazil!
Precedent Cases

Phosphonate - 2013

The EU imposed new legislation lowering MRL to 2 PPM effective in 2016 with a 75 PPM MRL until then.

US tree nut industry submitted an information package explaining their proposed timeline for compliance; received an extension to February 2019.

Chlorothalonil - April 2014

The EU notified the WTO that they were reducing the MRL from 2 PPM to .01 PPM.

Many berry farmers were forced to quickly switch their pesticide use to accommodate the change and crops suffered from increased disease pressure and issues with resistance to alternative pesticides.
## ALMOND MRL CHANGES

<table>
<thead>
<tr>
<th>Active Substance</th>
<th>US</th>
<th>EU</th>
<th>Difference</th>
<th>Functional Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D</td>
<td>0.2</td>
<td>0.2</td>
<td></td>
<td>Herbicide</td>
</tr>
<tr>
<td>Boscalid</td>
<td>0.7</td>
<td>0.05</td>
<td></td>
<td>Fungicide</td>
</tr>
<tr>
<td>Chlorantraniliprole</td>
<td>0.02</td>
<td>0.05</td>
<td></td>
<td>Insecticide</td>
</tr>
<tr>
<td>Chlorpyrifos</td>
<td>0.2</td>
<td>0.05</td>
<td></td>
<td>Insecticide</td>
</tr>
<tr>
<td>Dichlorvos</td>
<td>2</td>
<td>0.1</td>
<td></td>
<td>Insecticide</td>
</tr>
<tr>
<td>Flumioxazin</td>
<td>0.02</td>
<td>0.05</td>
<td></td>
<td>Herbicide</td>
</tr>
<tr>
<td>Glyphosate</td>
<td>1</td>
<td>0.1</td>
<td></td>
<td>Herbicide</td>
</tr>
<tr>
<td>Methoxyfenozide</td>
<td>0.1</td>
<td>0.1</td>
<td></td>
<td>Insecticide</td>
</tr>
<tr>
<td>Phosmet</td>
<td>0.1</td>
<td>2</td>
<td></td>
<td>Insecticide</td>
</tr>
<tr>
<td>Piperonyl Butoxide</td>
<td>8</td>
<td>--</td>
<td></td>
<td>Synergist</td>
</tr>
<tr>
<td>Ziram</td>
<td>0.1</td>
<td>0.1</td>
<td></td>
<td>Fungicide</td>
</tr>
</tbody>
</table>

- Red = US currently allows more PPM than the EU
- Yellow = US & EU currently have the same MRL standards
- Green = US currently allows fewer PPM than the EU
FINAL CONCLUSIONS

1. Soybean and Almond supply chains could look to delay Farm-to-Fork measures in short-term.

2. The almond production market is concentrated enough within a small community of Californian suppliers that the market could easily respond to changes in MRL standards by pivoting to other pesticide applications or competing import markets.

3. The soybean pesticide market is dominated by a few key stakeholders, namely Bayer (Monsanto) and DowDuPont, allowing them to adapt to regulatory changes quickly and efficiently.
THANK YOU

Questions?
Green New Deal Risk Factor and indications
• IGG on Tea has helped to harmonize MRLs for tea and reduce compliance costs

TEA
Outstanding U.S. export soybean sales lack signs of previous-summer revivals

Source: USDA, Foreign Agricultural Service, Export Sales.
ALMOND MARKET SUPPLY CHAIN
MRLs and Trade

- Lack of consensus on impacts