Fayette and Tipton Row Crop Marketing Meeting: Crop Outlook

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Overview

• Corn and Soybean Outlook
  – Supply and Demand
  – 2021 Price Projections
  – Weather Comments

• Marketing Plans
  – Budgets
  – Basis Trends
  – Pre-Harvest and Post-Harvest Plans

• Closing Comments
Outlook

CORN
Factors Effecting Supply for Corn

Positive for Prices
• Tight ending stocks / low stocks-to-use ratios.
• High prices for many crops make acreage decisions competitive and regional.
• Concerns in South America (second crop corn).

Negative/Uncertain for Prices
• Planted acres 2021
• 2021 weather – can we grow our way out of a rally in one production cycle?
• Added acres/global production regions - high prices often cure high prices.
• Rising input costs.
• Near record long managed money positions in corn, cotton, soybean, and wheat futures.
Factors Effecting Demand for Corn

Positive for Prices
• Record US beef, pork, and broiler production forecast for 2021.
• Ethanol bounce back (exports and carbon policy).
• Near 5-year low in the US dollar index (stimulates export demand).
• Exports (China purchases) are projected to remain strong in 2021.
• Increased global meat consumption.

Negative/Uncertain for Crop Prices
• COVID-19 uncertainty.
• African swine fever other animal infectious disease outbreaks.
• High prices can limit demand and result in substitution.
• China (policy, geopolitics etc.)
• Global economic uncertainty.
Global Corn Production, Consumption, and Ending Stocks, 2006-2020

Consumption exceeding demand and stocks falling 4 years in a row.

Data Source: USDA FAS
Share of Global Corn Exports, 2006/07 to 2020/21

Three countries responsible for 75% of global corn exports. Production/weather in these countries will direct prices. China Phase One bump.

Data Source: USDA FAS
US Corn Exports to China, 2017/18 to 2020/21

Very strong sales to China this marketing year.
No sales for the next marketing year at this time.

Data Source: USDA FAS
Corn - U.S. Production, Consumption, Exports, Ending Stocks, and MYA Price, 2006-2021

Data Source: USDA FAS and USDA NASS

*B = Estimated
** = Projected
Managed Money and Nearby Corn Futures Price

- About $88 billion in corn futures markets.
  - Managed money is long $7.7 billion.
- About $105 billion in soybean futures markets.
  - Managed money is long $9.2 billion.
- About $20 billion in cotton futures markets.
  - Managed money is long $5.4 billion.
On the low end of the price predicted by the trend line.

\[
y = -0.1201x + 9.7446 \\
R^2 = 0.5542
\]
Corn - U.S. Stocks-to-Use to MYA Price, 2006-2021

\[ y = -33.717x + 8.2356 \]
\[ R^2 = 0.6828 \]


2021/22: Stocks-to-Use of 10.26% Projects $4.78 Corn Range of $3.85 to $5.80

Price ($/bu)

Stocks-to-Use (%)

6% 8% 10% 12% 14% 16% 18%

**2020/2021**

Corn - U.S. Stocks-to-Use to MYA Price, 2006-2021

2021/22: Stocks-to-Use of 10.26% Projects $4.78 Corn Range of $3.85 to $5.80

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**2020/2021**

y = -33.717x + 8.2356
R² = 0.6828

6% 8% 10% 12% 14% 16% 18%
### December Corn Futures Contract (January 1-Expiration) Compared to MYA Price

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- Examine how the MYA price compares to the harvest futures contract average price and price range.
- 2010-2020 average price range $1.63 (max-min).
- Make basis adjustments to determine reasonable cash price estimates.
Tennessee Mississippi River Average Monthly Corn Basis (Elevators and Barge Points), 5-Year Average (2015-2019), 2020, and 2021

Identify basis opportunities and delivery points. Can you store?
From 2000 to 2020 in Tennessee yields have increased at a rate of 2.8 bu/acre or 28 bu/acre every 10-years.

\[ y = 2.8416x + 107.08 \]

\[ R^2 = 0.4749 \]
Corn: Estimated Cost of Production ($690/acre)

- Opportunity cost of land, $159
- Capital recovery of machinery and equipment, $127
- Fertilizer, $116
- Seed, $93
- Repairs, $35
- Fuel, lube, and electricity, $32
- Chemicals, $34
- Custom services, $23
- General farm overhead, $19
- Taxes and insurance, $12
- Hired labor, $5
- Interest on operating capital, $3
- Purchased irrigation water, $0

Production costs vary tremendously from operation-to-operation and field-to-field.

The key is to know your cost of production (the more accurate the better).

Ensure input cost efficiency for key categories (land, equipment, seed and chemicals).

Source: USDA-ERS: Corn production costs
Corn - Net Return Table ($/acre) ($690/acre COP)

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<tr>
<th>Price ($/bu)</th>
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Outlook

SOYBEANS
Factors Effecting Supply for Soybeans

Positive for Prices

• Tight US and global ending stocks / low stocks-to-use ratios.
• High prices for many crops make acreage decisions competitive and regional.
• Reduced Argentina production.
• Limited number of export competitors.
• Brazil logistics / export market timing.

Negative/Uncertain for Prices

• Record Brazil production.
• Planted acres 2021
• 2021 weather – can we grow our way out of a rally in one production cycle?
• Added acres - high prices often cure high prices.
Factors Effecting Demand for Soybeans

Positive for Prices
• Record beef, pork, broiler production forecast for 2021.
• Strong domestic crush.
• Near 5-year low in the US dollar index (stimulates export demand).
• Exports (China purchases) are projected to remain strong in 2021.
• Phase one commitments.
• Increased global protein demand.

Negative/Uncertain for Crop Prices
• COVID-19 uncertainty.
• African swine fever, other animal infectious disease outbreaks.
• High prices can limit demand and result in substitution.
• China (policy, geopolitics etc.)
• Global / U.S. trade / policy uncertainty.
Global Soybean Production, Consumption, and Ending Stocks, 2006/07-2020/21

Consumption exceeding production. Decline in ending stocks for two consecutive years.
With estimated record production in Brazil, how much market share is reclaimed?
How much will China buy and from which country?
US Soybean Exports to China, 2017/18 to 2020/21

- 34 MMT or 1.247 billion bushels

- 74 million bushels in sales for 2021/22 marketing year.
Soybeans: Global Days-on-Hand to US MYA Price Relationship, 2006/07 to 2020/21

2020/21: Day on Hand of 83 Projects $11.75 Soybeans Range of $9.75 to $13.75

\[ y = -0.0969x + 19.3 \]
\[ R^2 = 0.3808 \]
Soybean: Stocks-to-Use to Price, 2006/07 to 2020/21

2020/21: Stocks-to-use = 3%
Projects $11.75 Soybeans
Range of $10.00 to $13.75

y = -22.554x + 12.019
R² = 0.4462
November Soybean Futures Contract (January 1-Expiration) Compared to MYA Price

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- Examine how the MYA price compares to the harvest futures contract average price and price range.
- 2010-2020 average price range $2.92 (max-min).
- Make basis adjustments to determine reasonable cash price estimates.
Tennessee Average Monthly Soybean Basis (Elevators and Barge Points), 5-Year Average (2015-2019), 2020, and 2021

Identify basis opportunities and use seasonal trends to your advantage.
From 2000 to 2020 in Tennessee yields have increased at a rate of almost 1 bu/acre or 9-10 bu/acre every 10-years.
Soybean: Estimated Cost of Production
$526/acre

- Capital recovery of machinery and equipment, $123
- Opportunity cost of land, $99
- Seed, $61
- Repairs, $42
- Chemicals, $40
- Fuel, lube, and electricity, $39
- General farm overhead, $18
- Opportunity cost of unpaid labor, $33
- Hired labor, $16
- Taxes and insurance, $9
- Interest on operating capital, $2

Source: USDA-ERS: Soybean production costs

- Production costs vary tremendously from operation-to-operation and field-to-field.
- The key is to know your cost of production (the more accurate the better).
- Ensure input cost efficiency for key categories (land, equipment, seed and chemicals).
### Soybean - Net Return Table ($/acre): $526/acre COP

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<tr>
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<th>Yield (bu/acre)</th>
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Weather Outlook (Mar-May)
Crop Insurance Prices as at Feb 24, 2021

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<th>Projected (Spring) Price</th>
<th>Price Volatility</th>
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<td>Corn</td>
<td>$4.56 ($3.88)</td>
<td>0.23 (0.15)</td>
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<tr>
<td>Cotton</td>
<td>$0.83 ($0.68)</td>
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<td>Soybean</td>
<td>$11.78 ($9.17)</td>
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<td>Wheat</td>
<td>$5.54 ($4.86)</td>
<td>0.15 (0.16)</td>
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- Projected prices are: 17.5%, 22.1%, 28.5%, and 14% higher than last year.
- Premiums will be higher / revenue guarantees will be higher.
- Different in-season risk profile than last year.
- Work with a qualified crop insurance agent to determine the most suitable coverage for your operation.
Projected Planted Acres 2021

• Nationally
  – Soybeans 90 million acres (+6.9 million)
  – Corn 92 million acres (+1.2 million)

• Tennessee
  – Soybeans: 1.7 million (+50,000)
  – Corn: 965,000 (+95,000)

• Planting weather / prevented planting will influence crop allocations.

• Incentive to plant for most commodities.
MARKETING PLANS
Overview

- Corn and Soybean Outlook
  - Supply and Demand
  - 2021 Price Projections
  - Weather Comments

- Marketing Plans
  - Budgets
  - Basis Trends
  - Pre-Harvest and Post-Harvest Plans

- Closing Comments
• Before constructing a marketing plan, you must know your costs of production

• Your total expected costs of production along with your total expected production will provide your breakeven price

• Be sure to include family living expenses or any minimum income you are relying upon for expenses outside of your farm operations
## Budgets

### 2020 Corn, Conventional Tillage, Non-Irrigated Budget

<table>
<thead>
<tr>
<th>Unit</th>
<th>Quantity</th>
<th>Price</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross Revenue ($/Acre)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revenue</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corn</td>
<td>Bu/acre</td>
<td>161</td>
<td>$4.00</td>
</tr>
<tr>
<td>Government Payments</td>
<td>$/acre</td>
<td>1</td>
<td>$0.00</td>
</tr>
<tr>
<td>Other Revenue</td>
<td>$/acre</td>
<td>1</td>
<td>$0.00</td>
</tr>
<tr>
<td>Total Revenue</td>
<td></td>
<td></td>
<td>$644.00</td>
</tr>
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</table>

### Variable Expenses

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>Quantity</th>
<th>Price</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seed(^{2})</td>
<td>Thous.</td>
<td>32</td>
<td>$3.20</td>
<td>$102.40</td>
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<tr>
<td>Fertilizer &amp; Lime (Table 1)(^{3})</td>
<td>Acre</td>
<td>1</td>
<td>$141.76</td>
<td>$141.76</td>
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<tr>
<td>Chemical (Table 2)(^{4})</td>
<td>Acre</td>
<td>1</td>
<td>$35.65</td>
<td>$35.65</td>
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<tr>
<td>Crop Scout or Consultant</td>
<td>Acre</td>
<td>1</td>
<td>$9.00</td>
<td>$9.00</td>
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<tr>
<td>Repair &amp; Maintenance (Table 3)(^{5})</td>
<td>Acre</td>
<td>1</td>
<td>$44.91</td>
<td>$44.91</td>
</tr>
<tr>
<td>Fuel, Oil &amp; Filter (Table 3)(^{5})</td>
<td>Acre</td>
<td>1</td>
<td>$22.69</td>
<td>$22.69</td>
</tr>
<tr>
<td>Operator Labor (Table 3)(^{5})</td>
<td>Acre</td>
<td>1</td>
<td>$14.57</td>
<td>$14.57</td>
</tr>
<tr>
<td>Crop Insurance(^{6})</td>
<td>Acre</td>
<td>1</td>
<td>$12.12</td>
<td>$12.12</td>
</tr>
<tr>
<td>Machinery Rental</td>
<td>Acre</td>
<td>1</td>
<td>$0.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>Custom Work</td>
<td>Acre</td>
<td>1</td>
<td>$0.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>Drying (Fuel/Electric)</td>
<td>Bu</td>
<td>161</td>
<td>$0.00</td>
<td>$0.00</td>
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<tr>
<td>Other</td>
<td>Acre</td>
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<tr>
<td>Operating interest(^{7})</td>
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### Fixed Expenses

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<th>Unit</th>
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<th>Total</th>
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</thead>
<tbody>
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<td>$112.63</td>
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<tr>
<td>Capital Recovery (Table 3)</td>
<td>Acre</td>
<td>1</td>
<td>$0.00</td>
<td>$0.00</td>
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<tr>
<td>Other Fixed Machinery Costs</td>
<td>Acre</td>
<td>1</td>
<td>$0.00</td>
<td>$0.00</td>
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<tr>
<td>Property Taxes</td>
<td>Acre</td>
<td>1</td>
<td>$0.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>Cash Rent(^{9})</td>
<td>Acre</td>
<td>1</td>
<td>$99.00</td>
<td>$99.00</td>
</tr>
<tr>
<td>Insurance (Non-Machinery)</td>
<td>Acre</td>
<td>1</td>
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<td>$0.00</td>
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<td>Management Labor</td>
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<td>Other</td>
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<tr>
<td>Total Fixed Expenses</td>
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<td></td>
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</tbody>
</table>

### Summary

- **Total Expenses**: $624.41
- **Return Above Specified Expenses**: $19.59
Budgets

Dry Fertilizer Price, 2014-2021

- DAP (18-46-0)
- MAP (11-52-0)
- POTASH (0-0-60)
- UREA (46-0-0)
Budgets

Liquid Fertilizer Price, 2014-2021

- 10-34-0
- ANHYD (82-0-0)
- UAN28
- UAN32

Real. Life. Solutions.
**Budgets**

### 2020 Corn, Conventional Tillage, Non-Irrigated Budget

<table>
<thead>
<tr>
<th>Unit</th>
<th>Quantity</th>
<th>Price</th>
<th>Total Gross Revenue ($/Acre)</th>
<th>Total Revenue</th>
<th>Your Farm</th>
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<tbody>
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<td><strong>Revenue</strong></td>
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<tr>
<td><strong>Variable Expenses</strong></td>
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<td></td>
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</tbody>
</table>

[https://arec.tennessee.edu/extension/budgets/](https://arec.tennessee.edu/extension/budgets/)
Pre-Harvest Plans

- Use seasonal trends to begin pricing next year’s crop
- Set price targets and deadlines at regular intervals
- Use breakeven (or risk-tolerance) as your minimum price
- Use historical data to determine a reasonable maximum price
- Be familiar with various pricing tools
Pricing Tools

• Fixed Price
  – Forward Contracts
  – Short (Sell) Futures
  – Hedge to Arrive

• Minimum Price
  – Long (Buy) Put Options
  – Forward Contract & Long Call Options
December Corn Futures and Tennessee Production Stages

Price (cents/bu) vs. Time (Jan to Dec)

- Pre-planting
- Planting & Emergence
- Tassel, Pollination, & Silk
- Dough, Dent, & Mature
- Harvest Post-Harvest/Preplanting 2022

2021 prices through 2/24/21

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Post-Harvest Plans

• Take advantage of pricing opportunities and play defense
• Consider basis, level of carry in the market, and storage costs and/or capacity
• Have an exit plan
  – Subjective time to sell based on minimum and maximum price tolerances
  – Price in increments into seasonal summer highs (end of June)
Closing Comments

• Understand the current market environment and continue to evaluate price projections and yield potential throughout the marketing cycle.

• Evaluate storage capacity relative to anticipated production.

• The amount priced at different times of the year is operation specific but:
  – Have some production priced prior to planting ~25-50%.
  – Don’t price your way out of an extended rally!
  – It’s not too early to evaluate 2022 opportunities ($4.34 and $11.05 Futures as of 2/24/21).
Thank You!

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