

## Purdue Center for Commercial Agriculture Crop Basis Tool User's Guide

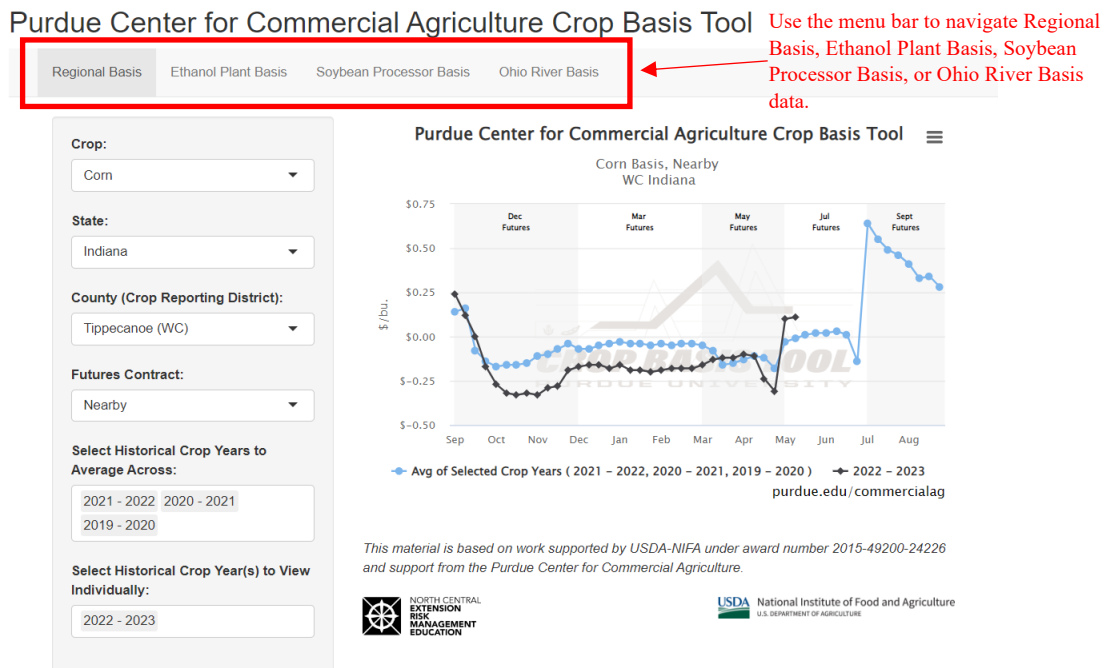
The Purdue Center for Commercial Agriculture Crop Basis Tool is a web-based tool that provides access to weekly historical and contemporaneous corn and soybean basis data for local market regions in Illinois, Indiana, Iowa, Michigan, and Ohio. The tool is updated weekly to keep grain industry participants up-to-date on current market information. The tool can be accessed from the Purdue Center for Commercial Agriculture [homepage](#).

### Data

The Crop Basis Tool is populated using cash and futures price data purchased from DTN. Data represent approximately 3,000 buyers across Illinois, Indiana, Iowa, Michigan, and Ohio. The number of buyers varies by week, depending on how many buyers report cash prices. Daily cash price data from individual grain elevators and processors are averaged to create average cash price series. The average cash price data is used to compute weekly basis (cash price minus futures price), using Wednesday cash and futures prices. To facilitate comparisons across years, a crop-marketing year is defined as having 48 weeks, with four weeks per month. When a month has five Wednesdays, prices from the fourth and fifth Wednesdays are averaged and reported as the fourth week. As a result, Week = 1 is the first week of September (beginning of the crop-marketing year), Week = 5 is the first week of October, and so on.

### How to Use the Tool

The Crop Basis Tool contains four different types of basis information: Regional Basis, Ethanol Plant Basis, Soybean Processor Basis, and Ohio River Basis. These different basis types can be accessed via the top menu bar highlighted below.



Each of the different basis types has slightly different input selections and computations of basis values. Each of these is described briefly below.

### *Regional Basis*

Regional basis data is computed for each crop reporting district in each of the five states. To view the data, the user can make the following selections:

1. Crop: Corn or Soybean
2. State: Illinois, Indiana, Iowa, Michigan, or Ohio
3. County (Crop Reporting District): The user selects the county of interest and is automatically directed to the regional average basis data for the corresponding USDA crop reporting district. In other words, reported data does not represent a particular location or county. Instead, data are aggregated across all available buyers in a crop reporting district by averaging Wednesday cash price data for that week to create a regional average cash price series that is then used to create regional average basis (basis = regional average cash price – futures price).
4. Futures contract: Users have the option of viewing basis data relative to either the nearby or a selected deferred futures contract month.
  - i. Nearby basis is calculated by subtracting the nearby futures price (Wednesday settlement price) from the regional average cash price (Wednesday close), where nearby is defined as the futures contract closest to expiration, without going into the futures contract's delivery month. Shading is provided on the nearby charts to identify the relevant futures contract month that the cash price is being compared to for each week.
  - ii. Deferred basis is calculated by subtracting the futures price (Wednesday settlement price) for a selected contract month from the regional average cash price (Wednesday close) throughout the entire crop-marketing year.
5. Historical Crop Years to Average Across: Historical data from the 2004-2005 crop-marketing year to present (updated weekly) are available to be viewed in the tool. The historical average allows users to average across multiple consecutive or non-consecutive crop-marketing years. For example, if you wish to view the three-year historical average basis for your region for the time period from 2019-2020 to 2021-2022 you would select the 2019-2020, 2020-2021, and 2021-2022 crop-marketing years and the Tool will automatically average the weekly basis values from these three years and report them on the chart. The selection of multiple crop-marketing years does not require that these years be consecutive. For example, if a user wanted to omit the 2019-2020 crop-marketing year from the previous average because of the impact of COVID-19 on commodity markets in the Spring of 2020, the user could select a three-year average of 2018-2019, 2020-2021, and 2021-2022.
6. Historical Crop Year(s) to View Individually: The same historical data that is available to be viewed as an average of multiple crop-marketing years as described above is also available to be viewed individually. The Tool automatically displays individual year data for the current crop-marketing year, but users can select additional individual years to view simultaneously.

### *Ethanol Plant Basis*

Ethanol plant basis data is computed for each state by averaging across all available ethanol plants in each state. User selections for viewing ethanol plant basis data are similar to the regional basis data above with a few exceptions:

1. State: Illinois, Indiana, Iowa, Michigan, and Ohio. There is no county (crop reporting district) selection given that ethanol plant data is presented as a state average.
2. Futures contract: Similar to regional basis data, users have the option of viewing basis data relative to either the nearby or a selected deferred futures contract month.
3. Historical Crop Years to Average Across: Similar to regional basis data, historical data from the 2004-2005 crop-marketing year to present (updated weekly) are available to be viewed as an average across multiple consecutive or non-consecutive crop-marketing years.
4. Historical Crop Year(s) to View Individually: Similar to regional basis data, historical data is also available to be viewed individually.

### *Soybean Processor Basis*

Soybean processor basis data, similar to ethanol plant basis data, is computed for each state by averaging across all available soybean processors in each state. User selections for viewing soybean processor basis data are similar to the ethanol plant data above:

1. State: Illinois, Indiana, Iowa, Michigan, and Ohio. There is no county (crop reporting district) selection given that ethanol plant data is presented as a state average.
2. Futures contract: Users have the option of viewing basis data relative to either the nearby or a selected deferred futures contract month.
3. Historical Crop Years to Average Across: Historical data from the 2004-2005 crop-marketing year to present (updated weekly) are available to be viewed as an average across multiple consecutive or non-consecutive crop-marketing years in the tool.
4. Historical Crop Year(s) to View Individually: Historical data is also available to be viewed as individual crop-marketing years.

### *Ohio River Basis*

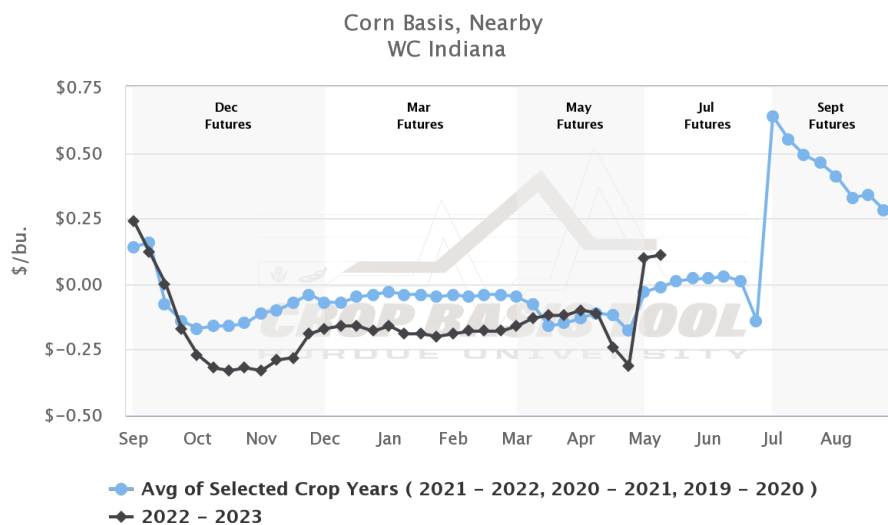
Ohio River basis data is computed by averaging across all available terminals on the Ohio River in Southern Illinois, Southern Indiana, and Southern Ohio. User selections for viewing Ohio River basis data are similar to the previous basis types, with a few exceptions. Mainly, there is no selection for state or county (crop reporting district) because all river terminals are averaged into one cash price series regardless of state. User selections include:

1. Crop: Corn or Soybean
2. Futures contract: Users have the option of viewing basis data relative to either the nearby or a selected deferred futures contract month.
3. Historical Crop Years to Average Across: Historical data from the 2004-2005 crop-marketing year to present (updated weekly) are available to be viewed as an average across multiple consecutive or non-consecutive crop-marketing years in the tool.
4. Historical Crop Year(s) to View Individually: Historical data is also available to be viewed as individual crop-marketing years.

## Interpreting the Output

An example chart is provided below. Notice, two different lines appear on the chart automatically. The blue line is the historical basis data selected and the black line is the corresponding basis for the current crop-marketing year. Corn basis charts automatically default to a 3-year historical average and soybean charts automatically default to a 2-year historical average. This is based on research examining the optimal moving average basis forecast for corn and soybeans in the Eastern Corn Belt.<sup>1</sup> Also, remember by changing the inputs on the left-hand side of the page the user can change which historical years to average across and which years to view individually. Also note that hovering over the chart provides a detailed data label for each week.

### Purdue Center for Commercial Agriculture Crop Basis Tool



[purdue.edu/commercialag](https://purdue.edu/commercialag)

If a user wants to view the chart with only either the selected historical average basis data (blue line in chart above) or current basis data (black line in chart above), all lines can be removed and added back by clicking on the legend labels below the chart. In addition, charts can be exported as .png files using the context menu (three horizontal lines) in the upper right-hand corner of the chart.

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<sup>1</sup> See, Thompson, N.M., A.J. Edwards, J.R. Mintert, C.A. Hurt. 2019. "Practical Alternatives for Forecasting Corn and Soybean Basis in the Eastern Corn Belt throughout the Crop-Marketing Year." *Journal of Agricultural and Resource Economics* 44:571-590.  
<https://www.jstor.org/stable/26797576>.

Questions: contact Josh Strine ([jstrine@purdue.edu](mailto:jstrine@purdue.edu)).

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