



Calibrating Yield Monitors

Correctly calibrating the yield monitor ensures the collection of accurate data that allows the farmer to make better agronomic decisions. The instructions, in the owner's manual, should read and understood before calibration.

Yield monitor data is helpful when:

- Comparing one field to another, or different areas within a field;
- Examining product performance and maturity differences;
- Evaluating results of experimental treatments through on-farm trials.
- Producing maps of yield, moisture, elevation, and other specific information when used with a differentially corrected global positioning system (DGPS).



Figure 1. Without proper calibration, yield monitor data does not provide a reliable picture of crop yield.

Yield Monitor Calibration Factors

There are four key factors to consider when calibrating the yield monitor: 1) Mass-flow rate; 2) Grain moisture content; 3) Travel distance; and, 4) Header height.

Most yield monitors measure the force of grain impacting a plate at the top of the grain elevator and then convert the force readings into estimates of the mass flow to estimate yield. The monitors must be “taught” to correctly convert the electrical signals generated by the impact sensor into mass flow rate. Calibration of your grain yield monitor involves adjusting the sensor that is estimating mass flow to match actual harvest weights. To begin:

1. Harvest at least 5,000 lbs or more to reduce variability, it is recommended to harvest several loads and then re-check after a period time.
2. Off-load grain into a calibrated weigh wagon or weigh on a certified scale.
3. Enter the actual weight into the monitor and the system converts the impact readings to actual harvest weights, making adjustments to the calibration curve.

It is recommended to calibrate using several grain flow rates by harvesting over a range of yield levels and grain flow conditions. Grain flow can be estimated by harvesting the full header width at faster or slower speeds than normal.

Depending on the variability in moisture content, calibrate moisture content differently for varying moisture levels. (i.e. calibrate separately for corn below 22 percent moisture than **for that above 22 percent moisture**).

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Using the Climate FieldView Yield Analysis Tool to view the data that has been collected.

1. Open the FieldView app, confirm you are on the **Overview** screen (Figure 2).
2. Tap on the **Yield Analysis** card for the crop you would like to analyze.
3. Confirm the correct **operation**, **year** and **crop** in the upper right.
4. Select the **Field**, **Hybrid/Variety** or **Soils** tab to specify your report type.
5. Sort your data by **Field Name**, **Avg. Yield**, or **Harvested acres** and tap any row to dig into more detail.
6. **Share** your Yield Analysis Report with others by tapping the share button (Figure 3).



Figure 2. FieldView app icon.



Figure 3. FieldView share button.

Moisture sensor. Generally, yield and moisture data are collected together. Grain moisture content at time of harvest should be checked when harvesting loads for calibration. Periodically take manual measurements to check performance of the moisture sensor. Over-estimated moisture readings from a malfunctioning moisture sensor will underestimate yield.

Distance and ground speed. Ground speed is another measurement that needs to be accurate for calculating proper yield per acre. A speed sensor in the transmission is used to determine speed, and should be calibrated by operating over a known distance under typical harvest speed and field conditions. Yield monitors that use GPS for speed determination do not require calibration for speed.

Header height. The header height determines beginning and end of data logging and area accumulation. Because there are differences in how header height is sensed in different units, you should refer to your operator's manual to fully understand use of this feature because the quality of data relies heavily on its proper use.

Tips

Consider creating pre-season and in-season checklists for settings and adjustments for your yield monitor and be sure to follow them at the start of each harvest day.

Calibration should be repeated or checked under the following situations:

- Change in type of grain being harvested.
- Different moisture levels per type of grain.
- Major differences in harvest conditions.
- Significant changes to the elevator chain, paddles, or flow sensor.
- Use the same scale or weigh wagon throughout calibration.
- Keep the flow and moisture sensors clean.
- Inspect individual components for wear and performance.
- Ensure software is up to date and previous season data is backed up.

Sources: Grisso, R., Alley, M., and McClellan, P. 2009. Precision farming tools: Yield monitor. Virginia Cooperative Extension Publication 442-502. <http://pubs.ext.vt.edu>; Nielsen, R.L. 2010. Yield monitor calibration: Garbage in, garbage out. Corny News Network—Purdue University. www.agry.purdue.edu/ext/corn/; Prather, T.G. and Denton, H.P. 2002. Calibrating the yield monitor. Precision Farming Series—University of Tennessee Agricultural Extension Service. PF-01. <http://bioengr.ag.utk.edu/Extension/>. Watermeier, N. 2004. Yield monitor calibration tips—Making the most from your data. Ohio State Univ. Extension Pub ANR-8-04. <http://ohioline.osu.edu>. Web sources verified 10/09/2018.

Performance may vary, from location to location and from year to year, as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible and should consider the impacts of these conditions on the grower's fields. **ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS.** 140722110640 10162018 MJW