

Yield Monitor Tips for 2015 Harvest

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Wet spring and persistent rain in many areas of Ohio have generated highly variable harvesting conditions for 2015 in both soybeans and corn. There are maturity, height, and expected yield differences within many fields that will bring about the importance of combine adjustments but also yield monitoring management, in particular calibration. The image presented was captured late August and illustrates the variability of both soybeans and corn going into dry down and harvest. Drowned out areas exist along with high yield potential areas but also everything in between.



The adoption of data services continues to increase across the US and here in Ohio. At the heart of these data services is the utilization of yield maps to help understand end-of-year performance within fields but also to characterize in-field variability in order for these service providers to deliver prescriptions, recommendations, or other information back to the farmer. **Since yield maps continue to be an important data layer to learn from and help drive changes or decisions at a field level, proper management of the yield monitor in 2015 will be key in order to generate accurate and reliable yield data.** The expectation is that grain moisture and test weight, along with grain flow through the combine, will vary within passes and across the field. Therefore, the flow and moisture sensors on combines must be calibrated to these expected conditions in order to log accurate data. The following best practice guidelines provide pre-harvest and harvest yield monitor tips.

Pre-Harvest

1. Turn on your display and **back-up all prior yield monitor data**. Save this data to a secure data storage device and properly label the file directory so you easily recognize what the back-up files signify within the directory.
2. **Ensure the display, DGPS receiver, and other components have all been updated to their most recent software versions**. Contact your dealer or look online to determine the most recent versions released by manufacturers.
3. Start-up combine and turn on display to check that the
 - Display indicates everything is functioning correctly or properly connected.
 - GPS receiver is providing a position and has differential correction.*Note:* If purchasing a differential correction service, make sure your subscription runs through harvest.
4. **Check wiring for damage and that all connections are tight** as you service the combine.
5. **Check the moisture sensor for debris build-up or damage** plus clean the housing of any old grain. The fins on the moisture sensor must be absolutely clean and not bent.

6. Check for damage or wear on the mass flow sensor (top of the clean grain elevator). This point is especially important on late model combines equipped with yield monitors as the wear on these plates influences mass flow measurements. REPLACE worn mass flow plates.
 - For combines that use optical sensors for yield determination (mounted on the side of the clean grain elevator), make sure they are clean and not damaged.

Calibration at Harvest

- If you have replaced any yield monitor components or the clean grain elevator, RECALIBRATION is required. Old calibration numbers will not work since changes in how grain impacts or interacts with sensors influence the readings and thereby yield calculations.
- If you purchase a new or used combine with an existing yield monitor installed, double check for proper installation and plan to re-calibrate.
- **Grain carts equipped with scales** can be used for calibrating yield monitors but consider:
 - 1) They are correctly weighing loads. Cross reference with scale tickets or weights from a certified scales.
 - 2) Stop on level ground for a few seconds to determine load weight.
- **Calibrating over the low to high flow rates will be critical.**
 - Need to take the time to calibrate the mass flow or volumetric sensors over the full range. Thought calibration, in particular at low flow rates, can take time it is a must to collect quality yield data. The ability of the yield monitor to collect accurate yield data from low to high flow conditions will dictate the quality of the resulting maps.
 - Many older yield monitors may have 1 or 2-point calibration procedures. For these systems, you can have different calibration numbers for low, medium and high flows through the combines. Match the calibration number to the field conditions.
 - For those yield monitors with multi-point calibration procedures, use the recommended 4 to 6 calibration loads. These loads will be captured over varying grain flows (low to high) by either changing ground speed or cut width as outlined in the operator manual.
- **Rules of thumb on managing calibration numbers:**
 - 1) Corn and soybeans require separate mass flow calibration.
 - 2) Need a different calibration for high moisture corn ($\geq 20\%$) versus lower moisture corn.
 - 3) Need a different calibration for “green” versus dry stem soybeans.
 - 4) Grain test weight can influence mass flow sensors so again, you might need to manage different calibration numbers as test weight differs by 2 or more values between fields.
 - 5) Double check calibration routinely for a crop and operating conditions.
 - 6) Remember to calibrate grain moisture sensor for each crop.
 - 7) Calibrate temperature sensor for those requiring this step.

Finally, **take good notes on field and operating conditions during harvest.** These can be helpful when reviewing yield maps post-harvest and explaining reasons for possible yield results within fields. Notes and pictures can be important for on-farm research projects during post-harvest evaluation. Having good notes as well as proper calibration in 2015 will result in quality yield data that can be successfully used within analysis and learning.