Calibrating Dry and Liquid Equipment Is Important
Part of Proper Application

Proper calibration is important for both fertilizer and pesticide application equipment, with rate errors and inconsistent spread patterns causing economic and environmental risks. Fertilizer and pesticide products are intended to be applied in a uniform fashion across the field. Inconsistent applications, either across a boom or a spread pattern, can lead to crop injury, poor weed control, and uneven crop growth. All these factors reduce crop yield and impact profitability.

Spread patterns and rate accuracy of dry applications needs to be checked annually and for each product applied. As spreaders age and parts wear, the spread pattern often shifts with time. Pan tests are an easy and effective means of determining spread pattern. The spinner speed plays a key role in spread pattern and should be given special attention with PTO-driven spreaders. A simple tachometer can ensure the spinners are operating in accordance with manufacturer recommendations. Spreaders without scales should be checked for the accuracy of metering systems, catching and measuring product coming out of the spreader for accuracy within 5%. Calibration of scales on spreaders should also be checked to ensure technology is performing as intended.

Varying densities of products, segregation of blends, and wind conditions can all impact spreader performance as well and should be considered.

Liquid applicators, both for fertilizers and pesticides, should be calibrated annually as well. Modern flow meters ensure that total application rates are accurate, but tip to tip variability can impact uniformity of application. Over time, spray tips will wear, impacting not just rate, but also the spray pattern. Nozzle flow rates can be measured by collecting product from each nozzle over a set period of time. If rates differ by more than 5-7% from manufacturer ratings, replace the nozzle. If more than a few nozzles exhibit rate variations, replacing all nozzles on the sprayer may be advisable.

Calibrating application equipment can seem like a tedious activity during a busy time of the year, but few activities can have an impact on farm profitability like ensuring the proper application of crop inputs. Preventing over applications is an easy way to minimize potential environmental impacts, while precise applications maximize profitability. Taking time before fertilizer and pesticide applications are made to fields to ensure calibrations are correct can make a big difference at harvest.