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Yield Monitor Field Test Engineering Procedure

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1 Purpose and scope

1.1 This procedure provides the basic requirements for evaluating field performance accuracy of a yield monitor installed on a harvester.

1.2 The procedure defines methods to determine time delay of material flow through the harvester.

1.3 This procedure outlines the method to select and prepare a field for testing to simulate changing yield conditions to evaluate yield measurement accuracy for varying flow rates.

1.4 This procedure was developed for grain, fiber, and bulk crop yield monitors, but could be adapted for other crops.

2 Terminology

2.1 Yield Monitor: A system of sensors and electronics mounted on a harvester and used to quantify the yield for the crop being harvested on an instantaneous and/or averaging basis. This includes all sensors necessary to accurately calculate yield for a given location within a field.

For example, if a moisture corrected yield is desired, the yield monitor will include a moisture sensor.

2.2 Test monitor: The yield monitor to be evaluated.

2.3 Flow Sensor: The sensor(s) that directly measures the mass or volume flow of the crop in a short time period.

2.4 Test: The events necessary to record data from multiple test plots.

2.5 Test plot: An area of sufficient size and length to conduct one repetition of test passes and associated reference passes.

2.6 Test pass: One harvest trip across the test plot consisting of multiple test blocks.

2.7 Test block: An area defined as one harvest width by the block length as defined in section 2.15 where the harvester operates in a steady state condition.

2.8 Reference Pass: One harvest swath through the test plot at normal flow rate with a full harvest width. The reference pass is used to document variability within the test plot.

2.9 Sample Reference System: A precision weighing system used to determine actual weight of each test pass. The reference system must be calibrated and traceable. Calibration must be current within 12 months prior to this procedure. The reference system includes a moisture test to correct weight to dry basis for crops that require it.