ANSI/ASAE S396.3 JUN2016
Combine Capacity and Performance Test Procedure

American Society of Agricultural and Biological Engineers

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1 Purpose and Scope

1.1 This Standard is intended to provide the basic requirements for a uniform procedure for measuring and reporting combine capacity, as defined in American National Standard ANSI/ASAE S343, Terminology for Combines and Grain Harvesting. Because crop conditions are variable and uncontrollable, the procedure provides only for the comparative testing of one combine, or one combine configuration, relative to another, in a particular crop condition.

1.2 In addition to measuring and reporting combine capacity, this Standard is also intended to provide the basic requirements for evaluating the uniformity of material spread from harvest residue spreading or chopping device(s). Harvest residue spreaders may be evaluated for spreading either straw or chaff separately or as a system for spreading both together.

2 Normative References

ANSI/ASAE S343, Terminology for Combines and Grain Harvesting

ANSI/*ASAE S358*, Moisture Measurement — Forages.

ANSI/ASAE S424, Method of Determining and Expressing Particle Size of Chopped Forage Materials by Screening

ASAE S352, Moisture Measurement — Unground Grain and Seeds

USDA 810, Official United States Standards for Grains

3 Terminology

3.1 test combine: The combine or combine configuration to be tested

3.2 comparison combine: The combine or combine configuration with which the test combine is being compared

3.3 test run: The events necessary to record a single set of measurements

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3.4 test series: All the events and data of the test combine and the comparison combine that define their performance during the test runs on each combine

3.5 catch: Any material collected during a test run

3.5.1 grain catch: Any material collected through the primary clean grain discharge point for the purpose of sample analysis

3.5.2 separator system catch: Any material collected from the machine's normal point of discharge from the separator

3.5.3 cleaning system catch: Any material collected from the machine's normal point of discharge from the cleaning system

4 Selection of Crop

4.1 Capacity tests should preferably be conducted in crops and conditions listed in ANSI/ASAE Standard S343, Terminology for Combines and Grain Harvesting. Where test data indicate that such requirements have not been adhered to, the reasons for departures shall be stated in the test report.

4.2 Crops used for tests shall be reasonably uniform, free of disease, weeds and other crops. They should in general be standing well. If local climatic conditions or local practices lead to different conditions typical of the locality (for instance widespread lodging or the windrowing of crops), the circumstances should be stated in the test report.

5 Machines

5.1 The test combine shall be fully identified as to make, model, year and other pertinent information. The terminology and methods of measurement defined by ANSI/ASAE Standard S343, Terminology for Combines and Grain Harvesting, shall be used where relevant.

5.2 The comparison combine shall be similarly identified, functionally sound and one which has been available on the open market for a continuous period of at least one year prior to the date of the test.

5.3 At the time of the test, both test and comparison combines shall be in good working order with all working surfaces free of thick or sticky paint, rust, grease, or other impediments to smooth operation. A run-in period of 25 h is required to ensure this condition on a new combine, or one that has not been used recently.

5.4 Immediately prior to testing, both test and comparison combines should be adjusted for optimum performance in the same piece of crop that will be used for the tests. Pretest adjustments should aim for optimum performance with harvesting conditions typical of normal practice in the relevant locality. Care should be taken to ensure that the dockage level in the clean grain sample of the test combine is similar to that of the comparison combine. Persons responsible for adjusting the machines shall be given adequate time and opportunity to do so, with regard to the time requirements of Section 7 Test Procedures, for conduct of the test proper. They shall also be responsible for deciding when the optimum adjustments have been attained.

5.5 No operator adjustment of the threshing, separating, or cleaning devices and header height shall be permitted during a test on either combine.

6 Collection of Samples

6.1 Apparatus for catching crop material discharged from the combine shall be built and operated so that:

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