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Procedure for Measuring Distribution Uniformity and Calibrating Granular Broadcast Spreaders

Developed by the Fertilizer Application Subcommittee of ASAE Agricultural Chemical Application Committee; approved by Power and Machinery Division Standards Committee; adopted by ASAE as a Tentative Standard December 1971; reclassified as a full Standard December 1972; revised March 1978; reconfirmed December 1982; revised March 1988; reaffirmed December 1992, December 1997, December 1998; revised February 1999; revised editorially April 2000; reaffirmed February 2004; reaffirmation extended for two years February 2009; revised December 2009, revised May 2018.

Keywords: Distribution, Granular, Spreaders, Test

1 Purpose and Scope

1.1 Purpose. The purpose of this Standard is to establish a uniform method of determining and reporting performance data on broadcast spreaders designed to surface apply granular materials. Tests performed according to this Standard make it possible to predict distribution uniformity of a broadcast spreader and to compare spreader distribution patterns.

1.2 Scope. This Standard pertains to centrifugal, pendulum, and other types of broadcast spreaders designed for dry granular application while operating on the soil surface. Portions of the test procedures outlined herein are suitable for determining the delivery rate of gravity or drop spreaders; however, additional tests not covered in this Standard are needed to completely evaluate the performance of gravity spreaders. This Standard does not cover dry pneumatic granular applicators.

2 Normative References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies unless noted. For undated references, the latest approved edition of the referenced document (including any amendments) applies.

ASTM E11, *Standard specification for woven wire test sieve cloth and test sieves*

ASAE S281, *Capacity Determination for Fertilizer Pesticide Hoppers and Containers*

ASAE S327, *Terminology and Definitions for Application of Crop or Forestry Production and Protection Agents*

3 Definitions

3.1 application, one-direction: An application method in which successive adjacent swaths are made in the same direction of travel (racetrack or circuitous application). This method produces a right-on-left overlapping of adjacent patterns.

3.2 application, progressive: An application method in which the spreader applies adjacent swaths in alternate directions (back and forth application). This method produces a right-on-right pattern overlap alternately with a left-on-left pattern overlap.