ANSI/ASABE D606 OCT2020
Properties and Relationships for Distillers Dried Grains with Solubles (DDGS)

American Society of Agricultural and Biological Engineers

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Keywords: Corn, DDGS, Distillers grains, Ethanol, Chemical properties, Granular properties, Physical properties, Sorghum

1 Purpose and Scope

1.1 The purpose of this Standard is to summarize what is known about the physical properties of DDGS. This encompasses values for key properties and their known ranges. This information is needed by agricultural and other engineers and technologists who design and build storage structures as well as also material handling and processing equipment for DDGS, at both the commercial and the farm scale.

1.2 Distillers dried grains with solubles (DDGS) is a coproduct of the fuel ethanol and distillery industries, and has become a highly-valued livestock feed. Most of the DDGS in North America comes from manufacturing plants that convert corn into ethanol for oxygenated motor fuels.

1.3 This standard should be used as a reference document only. Although typical ranges for various properties are provided, it should be noted that the properties of DDGS can exhibit substantial variation among ethanol production plants, as well as over time within a given plant, due to differences in processing equipment, techniques, and raw materials used.

1.4 This Standard is compatible with coproduct definitions provided by the American Association of Feed Control Officials (AAFCO) and the 2007 AFIA Sub-Working Group.

2 Normative References

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

2.1 Industry-established methods for determining chemical composition for DDGS were established in 2007 by the AFIA Sub-Working Group, and include:

NFTA 2.2.2.5, Laboratory Dry Matter by Oven Drying for 3 h at 105°C

AOAC 990.03, Protein (crude) in Animal Feed, Combustion Method

AOAC 2001.11, Protein (crude) in Animal Feed, Forage (plant tissue). Grain, and Oilseeds. Block digestion method using copper catalyst and steam distillation into boric acid

AOAC 945.16, Oil in Cereal Adjuncts: Petroleum Ether Extraction Method

AOAC 978.10, Fiber (crude) in Animal Feed and Pet Food. Fritted Glass Crucible Method

