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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 24445-2009

Single-screw feedstuff extruders

单螺杆饲料原料膨化机

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Foreword

Appendix A of this standard is an informative annex. This standard by the National Standardization Technical Committee proposed feed industry. This standard by the National Standardization Technical Committee on mechanical feed. Drafting of this standard. Jiangsu Shepherd Group Limited. The main drafters of this standard. Wang, Fan Wenhai, Sunxu Qing, Ma Liang, Wang Yuanming, Liu Xiongwei, Wang Mei, Zhang Guiyang. Single-screw extruder feed ingredients

1 Scope

China's national standard for single-screw extruders used on feed materials. It specifies the types and basic parameters, the technical requirements, the test methods, the inspection rules and the marking, packaging, transport and storage of single-screw feed extruders. An extruder is not a mixer or a mill - it is a chemical reactor with a screw in it. Material is fed into a barrel, conveyed by a rotating screw through a restriction, and subjected to heat, pressure and intense shear for a residence time measured in tens of seconds; then it passes through a die into atmosphere, where the superheated water in it flashes to steam and the material expands. What comes out is physically and chemically different from what went in. The starch is gelatinised, which makes it digestible and gives the pellet its binding; the protein is denatured; the antinutritional factors in soybean and other legumes - the trypsin inhibitors above all - are destroyed, which is what makes raw soy usable in feed at all; and the pathogenic organisms are killed. For aquatic feed the expansion also controls the density, which is what determines whether the pellet floats or sinks - and that is a specification the fish farmer sets. So the machine is bought on what it does to the material rather than on throughput alone, and the standard covers both: the screw and barrel configuration, the drive and its power, the heating and the temperature control, the die and the cutter, the feeding and conditioning arrangements, and the safety - an extruder builds very high pressure and a blocked die is a stored energy hazard. The performance

requirements are the capacity, the degree of gelatinisation achieved, the expansion ratio and the consistency, with the tests for each. Issued on 15 October 2009 and in force since 1 March 2010.

This standard specifies the classification of a single-screw extruder feed materials, requirements, test methods, inspection rules, marking, packaging, transportation and storage. This standard applies to single-screw extruder, dry and wet feed materials Extruder (hereinafter referred to as extruder).

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 191 Packaging Storage icon flag (GB/T 191-2008, ISO 780.1997, MOD)

GB/T 1735 Paints and varnishes - Determination of heat resistance (GB/T 1735-2009, ISO 3248.1998, MOD)

GB/T 3098.1-2000 Mechanical properties of fasteners Bolts, screws and studs (ISO 898-1.1999, IDT)

GB/T 3768 Determination of sound pressure of sound power levels of noise sources using an enveloping surface reflectance measuring surface Simple Method (GB/T 3768-1996, eqv ISO 3746.1995)

GB 5226.1 Safety of machinery electrical equipment Part 1. General requirements (GB 5226.1-2008, IEC 60204- 1.2005, IDT)

GB/T 6435 Determination of the feed water and other volatile matter content (GB/T 6435-2006, ISO 6496.1999, IDT)

GB/T 8622 feed activity was measured using soy urea

GB/T 9239.1-2006 mechanical vibration steady state (rigid) rotor balance quality requirements - Part 1. specification of tolerance and balance Inspection (ISO 1940-1.2003, IDT)

GB/T 10647 Feed Industry Terminology GB/T 17890 feed corn

GB/T 18695 terminology feed processing equipment

GB/T 19541 soybean meal feed GB/T 20411 soybean feed

GB 23821 Safety of machinery - Safety distance to prevent the upper and lower extremities touching the danger area (GB 23821-2009, ISO 13857.2008, IDT)

ISO 2409.2007 Paints and varnishes cut test

3 Terms and Definitions

GB/T 18695 and GB/T 10647 and established the following terms and definitions apply to this standard.

3.1 For a single or several feed ingredients mixed feed ingredients such as soybean and corn, a variety of meal, etc. extrusion pretreatment, which The major products produced as a raw material to produce other feed or feed the extruder.

3.2 Without steam conditioner before extrusion material into the system without pre tempered extruder.