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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 13092-2025

Replacing GB/T 13092-2006

Enumeration of molds count in feeds

饲料中霉菌总数的测定

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1 Scope

GB/T 13092-2025 is the Chinese national standard on enumeration of molds count in feeds, in the field of agriculture. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 31 October 2025 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 May 2026. Classification: ICS 65.120, CCS B46. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document describes the method for enumeration of molds count in feeds. This

document applies to the enumeration of the molds count in feed ingredients, feed additives, and feed products.

2 Normative References

The provisions in following documents become the essential provisions of this Document through reference in this Document. For the dated documents, only the versions with the dates indicated are applicable to this Document; for the undated documents, only the latest version (including all the amendments) is applicable to this Document.

GB/T 6682 Water for analytical laboratory use - Specification and test methods

3 Terms and Definitions

For the purposes of this Document, the following terms and definitions apply.

3.1 Molds count The specimen is treated and cultured under specific conditions such as culture medium, culture temperature and time, and the mold count in each gram (g) or milliliter (mL) of the specimen is obtained.

4 Principle

Based on the physiological characteristics of molds, a culture medium suitable for mold growth but not for bacterial growth was selected, and the mold count was determined using the plate counting method.

5 Reagents or Materials

Unless otherwise specified, use only analytical grade reagents.

5.1 Water. GB/T 6682, Grade III.

5.2 Sodium hydroxide solution (1 mol/L). Weigh

20.0 g of sodium hydroxide; dissolve in water; cool to room temperature; make constant volume to 500 mL with water; and mix well.

5.3 Hydrochloric acid solution (1 mol/L). Pipette 42 mL of hydrochloric acid; dilute with water; make constant volume to 500 mL with water; and mix well.

5.4 Phosphate buffer stock solution. Weigh

34.0 g of potassium dihydrogen phosphate; dissolve in 500 mL of water; adjust the pH to

7.2 with approximately 175 mL of sodium hydroxide solution (5.2); dilute to 1000 mL with water; mix well; and store at 2°C~8°C.

5.5 Sterile phosphate buffer solution. Take

1.25 mL of phosphate buffer stock solution (5.4); dilute with water to 1000 mL; and mix well. Dispense into suitable containers; and autoclave at 121 °C for 15 min.

5.6 Sterile physiological saline. Weigh

8.5 g of sodium chloride; dissolve in water and make constant volume to 1000 mL; and mix well. Dispense into suitable containers; and autoclave at 121 °C for 15 min.

5.7 Dichloran Rose Bengal Chloramphenicol Agar (DRBC) medium. Prepare according to Appendix A; or purchase commercially available medium.

5.8 Sterile liquid paraffin. Take an appropriate amount of liquid paraffin and autoclave at 121 °C for 20 min.

5.9 Sterile Tween

80.Take an appropriate amount of Tween 80 and autoclave at 121 °C for 20 min.

5.10 Sterile homogenizing cup.

5.11 Sterile homogenizing bag.

5.12 Sterile petri dish. 90mm in diameter.

6 Instruments and Equipment

6.1 Incubator. 28 °C ± 1 °C.

6.2 Balance. Accuracy of

0.1 g,

0.01 g, and

0.1 mg.

6.3 Homogenizer. Rotation speed 8000 r/min ~ 10000 r/min.

6.4 Beating homogenizer.

6.5 Thermostat. 42 °C ± 2 °C.

6.6 Vortex mixer.

6.7 pH meter. Accuracy ± 0.02, or precision pH test paper.

6.8 Magnifier or colony counter.

6.9 Oscillator. Reciprocating type.

7 Samples

Samples shall be tested as soon as possible after receiving them in the laboratory to prevent contamination and changes in microorganisms.

8 Inspection Procedure

The inspection procedure of plate count method for the molds count is shown in Figure 1.
Figure 1 -- Inspection procedure of plate count method for mold counts

9.1.1 Preparation of specimen solution

9.1.1.1 Specimen (excluding oily type) Using sterile operation, take 25 g (mL) of specimen and homogenize it according to one of the following three methods to prepare a

1.10 specimen homogenate.

--- Place it in a sterile homogenizing cup (5.10) containing 225 mL of sterile phosphate buffer solution (5.5) or sterile physiological saline (5.6); and homogenize at 8000 r/min to 10000 r/min for 1 min to 2 min;

--- Place it in a sterile homogenizing bag (5.11) containing 225 mL of sterile phosphate buffer solution (5.5) or sterile physiological saline (5.6); and homogenize using a tapping homogenizer for 1 min to 2 min;

--- Place it in a sterile glass conical flask containing 225 mL of sterile phosphate buffer solution (5.5) or sterile physiological saline (5.6); and oscillate on an oscillator for 30 min.

9.1.1.2 Oily specimen Using sterile operation, take 25 g (mL) of the specimen and place it in a sterile Erlenmeyer flask. First, add

12.5 mL of sterile liquid paraffin (5.8); then add 25 mL of sterile Tween 80 (5.9). Oscillate and mix for 10 min in a 42 °C±2 °C thermostat. Add 187.5 mL of sterile phosphate buffer solution (5.5) or sterile physiological saline (5.6) at 42 °C±2 °C. Emulsify in a 42 °C±2 °C thermostat for 1 min to 2 min to prepare a

1.10 specimen homogenate.

9.1.2.1 Using a 1mL sterile pipette or micropipette, pipette 1mL of a

1.10 specimen homogenate (

9.1.1.1 or 9.1.1.2) and slowly inject it along the tube wall into a sterile test tube containing 9mL of sterile phosphate buffer solution (5.5) or sterile physiological saline (5.6). Vortex for 30s to prepare a

1.100 specimen homogenate.