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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 14698-2017

Replacing GB/T 14698-2002

Identification method of feed material by microscopy

饲料原料显微镜检查方法

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Foreword

This standard was drafted in accordance with the rules given GB/T 1.1-2009. This standard replaces GB/T 14698-2002 "Identification method of feed material by microscopy". As compared with GB/T 14698-2002, the main technical changes of this standard are as follows: - DELETE the relevant contents of compound feed from the text (SEE clause 1 of 2002 version); - ADJUST the standard text structure; - ADD the petroleum ether degreasing treatment method (SEE clause 7.2.3). This standard was proposed by AND shall be under the jurisdiction of National Feed Industry Standardization Technical Committee (SAC/TC 76). The drafting organizations of this standard. National Feed Quality Supervision and Inspection Center (Wuhan), New Hope Liuhe Co., Ltd., Guangzhou Kangruide Biological Technology Co., Ltd., Hunan Zhenghong Technology Development Co., Ltd. The main drafters of this standard. Yang Haipeng, Guo Jiyuan, Liu Xianrong, Yang Lin, Rong Jia, Zhu Zhengpeng, Hu Zhenjun, Wang Hu, Qian Ying, Jiang Xiaoxia. This standard replaces the standards previously issued as follows: - GB/T 14698-1993, GB/T 14698-2002. Identification method of feed material by microscopy

1 Scope

GB/T 14698-2017 is the Chinese national standard on identification method of feed

material by microscopy, 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 7 September 2017 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 April 2018. 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 standard specifies the identification method of feed material by microscopy. This standard applies to the qualitative identification of feed material by microscopy.

2 Normative references

The following documents are essential to the application of 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) are applicable to this document.

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

GB/T 14699.1 Feed - Sampling

GB/T 34269-2017 Identification chromatogram of feed material by microscopy Feed material directory (Announcement of Ministry of Agriculture of People's Republic of China No. 1773)

3 Principles

The appearance morphology, organization structure, cell morphology, and staining characteristics of the substance under inspection are observed under the microscope, the results are compared with GB/T 34269-2017, to identify and evaluate its type and quality.

4 Instruments

4.1 Stereo-microscope. magnification can be 7 times ~ 40 times.

4.2 Biological microscope. magnification can be 40 times ~ 500 times.

4.3 Magnifying glass.

4.8 Pointed tweezers, pointed probes and so on.

4.9 Electric oven, electric furnace, alcohol lamp and equipment commonly used in lab.

5 Reagents and solutions

Unless otherwise indicated, the reagents used in this standard are of analytical pure, AND the water is level III water as specified in GB/T 6682.

5.1 Carbon tetrachloride.

5.2 Petroleum ether. Boiling point 30 °C ~ 60 °C.

5.7 Iodine solution. WEIGH

0.75 g of potassium iodide and

0.1 g of iodine, DISSOLVE it in 30 mL of water, STORE it into a brown bottle, PREPARE it before use.

5.8 Ninhydrin solution 5 g/L. WEIGH

0.5 g of ninhydrin, DISSOLVE it in 100 mL of water, STORE it into a brown bottle, PREPARE it before use.

5.9 Ammonium nitrate solution. DISSOLVE 10 g of ferric nitrate in 100 mL water.

5.10 Molybdate solution. DISSOLVE 20 g of molybdenum trioxide into the mixture of 30 mL of ammonia and 50 mL of water, slowly POUR this solution into the nitric acid solution (5.6), HEAT it slightly to dissolve it, COOL it down, MIX it with 100 mL of ammonium nitrate solution (5.9).

5.13 Silver nitrate solution. WEIGH 10 g of silver nitrate, DISSOLVE it in 100 mL of water.

5.14 Phloroglucinol solution 20 g/L. WEIGH 2 g of phloroglucinol, DISSOLVE it into 100 mL of 95% ethanol, STORE it into a brown bottle.

6 Reference sample

6.1 Feed material reference sample FOLLOW the characterization as described in "Feed material catalog" to collect and prepare reference samples.

6.2 Dopant reference sample COLLECT the rice hull flour, wood chips, peanut hull flour, leather powder, etc., may be used to serve as a dopant or adulterant sample.

7 Specimen preparation

7.1 Sampling TAKE sample in accordance with GB/T 14699.1, TAKE the representative feed sample, USE the quartering method to reduce the sample to the amount as required for inspection. The specimen is stored in a sealed glass bottle or a sealed sample bag at room temperature.

7.2 Specimen pre-preparation

7.2.1 Screening Based on the particle size of the specimen, SELECT the appropriate standard sieve (4.4), PLACE the sieve of the maximum bore diameter above the sieve of the minimum bore diameter, PLACE the sieve base at the bottom.

7.2.2 Particle or pellet specimen treatment TAKE a few grains into a mortar (4.5), USE pestle to grind it to scatter it into different compositions, BUT do not CRUSH the composition itself. After initial grinding, MAKE it pass the sieve of bore diameter

0.42 mm.

7.2.5 Carbon tetrachloride flotation treatment TAKE about 10 g of specimen into a 100 mL high beaker, ADD about 90 mL of carbon tetrachloride (5.1), STIR it for about 10 s, LET it be standing for 2 min ~ 5 min. After the upper and lower layers are clearly separated, USE spoon to take out the materials floating at the upper layer or USE the decantation filtration method to separate it out, after the surface flotation agent is volatilized, PLACE it into the oven (4.9) at (70 ± 2) °C for 10 min ~ 20 min, TAKE it out to cool it to room temperature, PLACE the sample into the culture dish (4.7) to prepare for inspection.

8 Inspection steps

8.1 Sensory inspection SPREAD 50 g ~ 100 g of specimen on a white paper, MAKE sensory inspection for the specimen in sufficient natural light, the user directly inspects the specimen visually and tactilely.

8.2 Stereomicroscope inspection PLACE the culture dish on which specimen is paved under the microscope (4.1) to observe it, USE the sufficient scattered natural light or reading lamp as the light source (pay attention to make comparison observation of the reference sample in the same light source), it shall maintain a 45° angle between the incident light and the specimen plane when a reading lamp is used.

8.3 Biological microscopy Specimen particles and specimen that cannot be accurately identified under a stereomicroscope, respectively TAKE a small amount of specimen from above the sieve and from the sieve base plate, PLACE it on the slide glass (4.7), ADD two drops of a suspending agent I (5.11), USE the probe (4.8) to stir it to scatter it, MAKE it uniformly soaked, USE a glass slide to cover it.

9 Identification methods and identification experiments

9.1 Identification of major inorganic components PLACE the dried sediment (7.2.3,

7.2.4 and 7.2.5) on a sieve set composed of sieve having hole-diameter

0.42 mm,