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

GB/T 17813-2018

Replacing GB/T 17813-1999

**Determination of nicotinic acid and folic acid in premix - High
performance liquid chromatography**

添加剂预混合饲料中烟酸与叶酸的测定 高效液相色谱法

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009. This standard replaces GB/T 17813-1999 "Determination of Nicotinic Acid and Folic Acid in Composite Premixes by High Performance Liquid Chromatography". Compared with GB/T 17813-1999, this standard is modified as follows except for editorial changes.

- Revised the detection limit of the method and increased the limit of quantitation (see Chapter 1, Chapter 1 of the.1999 edition);
- Modified standard name;
- Revised the principle of niacin and folic acid determination (see Chapters 3 and 4, Chapter 3 of the.1999 edition);
- Modified the composition of the extract of niacin and folic acid (see Chapters 3 and 4, 4.6 of the.1999 edition);
- Revised the mobile phase and chromatographic conditions of niacin and folic acid (see 3.2.7, 3.5.2 and 4.5.2, 7.2.1.1 of the.1999 edition);
- Modified the preparation method of niacin standard solution (see 3.2.9, 4.5.1 of.1999 edition);
- Compound premixed feed extraction method, increased use of disodium edetate dihydrate (EDTA) (see 3.5.1.2 and 4.5.1.2, 7.1) of the.1999 edition;
- Added standard chromatogram of niacin and folic acid (see Appendix A). This standard is proposed and managed by the National Feed Industry Standardization Technical Committee (SAC/TC76). This standard was drafted. Institute of Agricultural Quality

Standards and Testing Technology, Chinese Academy of Agricultural Sciences [National Feed Quality Supervision and Inspection Center (Beijing)]. The main drafters of this standard. Li Lan, Jia Wei, Suo Decheng. The previous versions of the standards replaced by this standard are.

1 Scope

GB/T 17813-2018 is the Chinese national standard on determination of nicotinic acid and folic acid in premix - high performance liquid chromatography, 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 17 September 2018 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 April 2019. 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 high performance liquid chromatography for the determination of niacin and folic acid in additive premixed feeds. This standard applies to the determination of niacin and folic acid in vitamin premixed feed and compound premix feed. The detection limit of niacin is 100mg/kg, the limit of quantification is 300mg/kg; the detection limit of folic acid is 15mg/kg, and the limit of quantification is 50mg/kg.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article. Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 6682 Analytical laboratory water specifications and test methods

GB/T 14699.1 Feed sampling Preparation of

GB/T 20195 animal feed samples

3 Determination of niacin

3.1 Principle The niacin in the sample was extracted with an acidic methanol aqueous solution, separated by high performance liquid chromatography, detected by ultraviolet light, and quantified by external standard method.

3.2 Reagents or solutions Unless otherwise specified, the reagents used in this standard are of analytical grade, and the water meets the requirements of Class I water in GB/T

6682.

3.2.1 Glacial acetic acid. excellent grade pure.

3.2.2 Sodium heptane sulfonate. chromatographically pure.

3.2.3 Triethylamine. excellent grade pure.

3.2.4 Methanol. chromatographically pure. 3.2.5 0.1% trifluoroacetic acid solution. Pipette 1 mL of trifluoroacetic acid in 1000 mL of water.

3.2.6 Extract. Weigh 50mg of disodium edetate dihydrate (hereinafter referred to as EDTA) dissolved in about 800mL of water, add 20 mL of glacial acetic acid (3.2.1) and 5 mL of triethylamine (3.2.3) were mixed and mixed with.200 mL of methanol. The pH of the solution was about 3-4.

3.2.7 Mobile phase. Weigh

1.1 g of sodium heptane sulfonate (3.2.2), 50 mg of EDTA dissolved in about 1000 mL of water, and add 20 mL of glacial acetic acid. (3.2.1), 5 mL of triethylamine (3.2.3), mix, adjust the pH of the solution to

4.0 with glacial acetic acid and triethylamine, and pass the 0.45 μ m filter. Take the above 800 mL of the solution was mixed with.200 mL of methanol (3.2.4) for use.

3.2.8 Niacin standard. niacin content $\geq$ 98.0%.

3.2.9 Niacin Standard Stock Solution. Accurately weigh 0.1g (accurate to 0.0001g) niacin standard (3.2.8) and place it in 100mL brown volume. In a measuring flask, add water to dissolve it, and add 1 mL of 0.1% trifluoroacetic acid solution (3.2.5), dilute to the mark with water, and shake well. The standard reserve The niacin content in the liquid is about 1mg/mL, and it is stored at 2°C~8°C, and the effective period is 6 months.

3.2.10 Niacin Standard Working Fluid. Adjust the dilution factor according to the type of sample (vitamin premix feed, compound premix feed) to make the standard