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Propolis

蜂胶

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Foreword

This Standard was proposed by National Federation of Supply and Marketing Cooperatives.

This Standard shall be under the jurisdiction of the Working Group of National Bee Products Standardization.

Drafting organizations of this Standard: Beijing TianEn Bioengineering High-Tech Research Institution, College of Animal Science of Zhejiang University, Hangzhou Tianchu Miyuan Healthcare Products Co., Ltd., Qinhuangdao Entry-Exit Inspection and Quarantine Bureau of the People's Republic of China, Beijing Baihua Bee Products Technological Development Co., Ltd., Guangzhou Baoshengyuan Co., Ltd., and Jiangxi Wangshi Bee Garden Co., Ltd.

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Propolis

1 Scope

This Standard specifies propolis and ethanol extracted propolis' definitions and requirements for its quality, test method, packaging, labeling, storage and transportation.

This Standard is applicable to the process and trade of propolis and ethanol extracted propolis.

2 Normative references

The articles contained in the following documents have become part of this Standard when they are quoted herein. For the dated documents so quoted, all the modifications (excluding corrections) or revisions made thereafter shall not be applicable to this Standard. For the undated documents so quoted, the latest editions shall be applicable to this Standard.

GB/T 191 Packaging - Pictorial marking for handling of goods

3 Terms and definitions

For the purpose of this Standard, the following terms and definitions shall apply.

3.1

Propolis

Adhesive substance that is mixed and formed OF the secretions such as plant resins collected by worker bees AND the secretions such as their mandibular gland and wax gland.

3.2

Ethanol extracted propolis

Substance that is obtained after using ethanol to extract the propolis.

3.3

Total flavonoids

Sum of flavonoid substance contents.

Any resin adhesive which is not collected by bees and formed from manual process shall not be called as “Propolis”.

4.4 Special restrictions

Propolis collectors that satisfy the hygienic requirements shall be used to collect the propolis; it shall not use gauze screen to collect the propolis within the beehive;

Avoid heating under high temperature and sun exposure.

5 Test method

5.1 Sampling method

Sample a uniform sample from different parts of the test samples; the total amount of each batch shall not exceed 300g.

5.2 Inspection of sensory requirements

5.2.1 Inspection of sensory requirements of propolis

5.2.1.1 Color and state

Under good natural light, observe the appearance color of the samples. Take a little amount of sample to mix uniformly; heat to about 35°C; rub into strips by hand; then slowly stretch to both ends. The more gel it contains, the greater the viscosity is, and the longer the stretched length is.

5.2.1.2 Odor and taste

Take a little amount of sample; smell whether its odor has obvious unique propolis aroma; then ignite to smell whether its odor is abnormal; taste its flavor.

5.2.2 Inspection of sensory requirements of ethanol extracted propolis

5.2.2.1 Structure

Put the sample of ethanol extracted propolis at below 15°C for 2h~3h; break down with a hammer; observe its cross section.

5.2.2.2 Color and state

Inspect in accordance with the method specified in 5.2.1.1.

5.2.2.3 Odor and taste

Inspect in accordance with the method specified in 5.2.1.2.

5.3 Inspection of physiochemical requirements

5.3.1 Sample preparation

Place the sample which is sampled according to 5.1 into a refrigerator of which the temperature is below 10°C for 1h; smash it; sample 100g for inspection.

5.3.2 Content of ethanol extract

5.3.2.1 Principle

Weigh the insoluble substance's mass of the ethanol; use subtraction method to calculate its percentage accounting for the sample's mass.

5.3.2.2 Reagent and material

a) Ethanol: analytically pure (≥95%);

b) Quantitative filter paper Φ12.5cm.

5.3.2.3 Instruments

a) Balance (sensitivity is 0.001g);

b) 100mL beaker;

c) Electrothermal blowing dry box;

d) Ultrasonic instrument;

e) Glass funnel Φ60mm;

f) Glass rod;

g) 250mL conical flask;

h) Weighing bottle 70 mm x 35 mm;

i) Drying dish.

5.3.2.4 Steps

Weigh 5g of smashed propolis samples (accurate to 0.001g); place into 10mL beaker; add appropriate amount of 95% ethanol; put into ultrasonic instrument for ultrasound, so as to make the samples dissolved; pour the supernatant into filter paper and glass funnel that have been pre-dried and weighed for filtering into conical flask; repeat for several times until completely dissolved; then use a small amount of ethanol to wash the 100mL beaker and the filter paper for 2 times. Dry the residue, filter paper, and glass funnel under 50°C to constant weight. Carry out the parallel experiment under the same conditions.

a) Balance (sensitivity is 0.001g);

b) Oscillator;

c) Stopwatch;

d) 250mL stoppered grinding mouth conical flask;

e) 0mL, 100mL and 1,000mL volumetric flasks;

f) 50mL conical flask;

g) 0.2mL, 1.0mL, 2.0mL, 5.0mL and 10.0mL pipettes;

h) Funnel, quantitative filter paper;

i) 250nL micropipette.

5.3.4.4 Steps

a) Weigh 1g (accurate to 0.001g) of sample at room temperature; place into 250mL stoppered grinding mouth conical flask; add 25mL of ethanol; plug the stopper; oscillate for 1h on the oscillator at low speed; then add 100mL of distilled water; shake up sufficiently and uniformly; filter; and collect the filtrate.

b) Use pipette to suck up 0.5mL of aforesaid filtrate; put into 50mL volumetric flask; use distilled water to dilute to the scale; shake up uniformly.

c) Use pipette to suck up 10mL of filtrate into 50mL conical flask; add 2.0mL of 20% sulfuric acid; oscillate for 1 min; then use 200mL micropipette to add 0.05mL of 0.01mol/L potassium permanganate solution; at the same time, start the stopwatch and oscillate; when the solution's fuchsia completely fades away, stop the stopwatch; record the time that is consumed by fully fading away of the fuchsia (calculated in "s"); that is the oxidation time of the sample. Each sample shall be tested for three times in parallel, taking the average arithmetic value as the measured value of the sample.

6 Packaging

6.1 The materials that satisfy the national food safety hygienic requirements shall be used for packaging. Ethanol extracted propolis shall have quantitative packaging. The packaging site shall meet the food safety and hygienic requirements. Packaging shall be tight and solid, easy for handling, storage and transportation.

6.2 Packaging shall be carried out based on product grade.

Bibliography

[1] "*Measurement of Total Flavonoids in Health-Care Food" in "Technical Specification for Inspection and Evaluation of Health-Care Food"* (Ministry of Health of the People's Republic of China, 2003 Edition)

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