NATIONAL STANDARD OF THE

PEOPLE'S REPUBLIC OF CHINA

GB 1886.303-2021

National food safety standard - Food additives - Edible tannin

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1 Scope

This Standard applies to the food additive edible tannin, whose main component is tannin, that is obtained through extraction and processing of ethanol or ethyl acetate, with Galla chinensis as raw material.

2.1 Sensory requirements

Sensory requirements shall be in accordance with Table 1.

Table 1 - Sensory requirements

2.2 Physical and chemical indicators

Physical and chemical indicators shall be in accordance with Table 2.

Table 2 - Physical and chemical indicators

A.3.3 Analysis steps Weigh about 2 g of sample (dry basis, accurate to 0.000 1 g); add a small amount of water to dissolve; use aqueous ammonia solution to adjust the pH to 5.0 +/- 0.1; then, use water to dilute to 500 mL. Absorb 100 mL of the above solution; transfer it into a 250 mL brown wild-mouth bottle with a stopper; add 8 g of polyamide-6; shake at 20 °C ~ 25 °C for 40 min. After standing for 10 minutes, use double-layer filter paper to filter. The filtrate shall be clear. Absorb

50 mL of the filtrate and place it on an evaporating dish that has been dried at 105 °C +/- 2 °C for 2 h; evaporate to dryness in a steam bath; then, dry at 105 °C +/- 2 °C for 2 h. Cool in a desiccator for 30 minutes and weigh. Do a blank test at the same time.

A.3.4 Result calculation Calculate the mass fraction w1 of tannin content (calculated on a dry basis)

according to Formula (A.1).

Where:

m - mass of the sample (dry basis), in grams (g).

m1 - mass of the dried product that is finally obtained from the sample analysis, in grams (g);

m0 - mass of the dried product that is finally obtained from the blank analysis, in grams (g);

The test result is based on the arithmetic mean of the parallel determination results. The absolute difference between two independent determination results which are obtained under repeatability conditions shall not be greater than 0.5% of the arithmetic mean.

A.4 Determination of ignition residue A.4.1 Reagents and materials Sulfuric acid A.4.2 Instruments and apparatuses A.4.2.1 Crucible.

A.7.1 Reagents and materials A.7.1.1 Grade-1 water that is specified in GB/T 6682.

A.7.1.2 Standard ethyl acetate: chromatographic pure.

A.7.1.3 n-butanol: used as an internal standard substance, chromatographic pure.

A.7.2 Instruments and apparatuses Gas chromatograph: equipped with hydrogen flame ionization detector (FID)

and headspace sampler.

A.7.3 Reference chromatographic conditions A.7.3.1 Chromatographic column: capillary column (dia. 0.32 mm x 30 m); the stationary phase is 14% cyanopropyl phenyl-86% polydimethylsiloxane; the thickness is 0.25 um; or other equivalent chromatographic columns.

A.7.3.2 Carrier gas: nitrogen.

A.7.3.3 Carrier gas flow velocity: 1 mL/min.

A.7.3.4 Makeup gas flow velocity: 40 mL/min.

A.7.3.5 Column temperature: keep at 80 °C for 10 min; raise the temperature to 250 °C at 80 °C/min; keep it for 2 min.

A.7.3.6 Temperature of the sample injector: 150 °C.

A.7.3.7 Temperature of the detector: 250 °C.

A.7.3.8 Injection volume: 1.0 mL.

A.7.4 Reference headspace sampling conditions A.7.4.1 Headspace bottle: 25 mL.

A.7.4.2 Equilibrium temperature: 60 °C.

A.7.4.3 Equilibrium time: 30 min.

A.7.4.4 Sampling time: 0.5 min.

A.7.5 Analysis steps A.7.5.1 Preparation of internal standard solution