Phyllanthus emblica L. ဗီးြဖူ

1. Scope

This standard prescribes the specification and identification for quality criteria of Phyllanthus emblica L. ဗီးြဖူ fruit powder to be used as a single or as an ingredient of the traditional medicine formulations.

2. Definition

Phyllanthus emblica L. (Indian goose berry) belongs to the family Phyllanthaceae; its fruit is used in Traditional Medicines.

3. Description

3.1. Macroscopic characteristics

Shining yellowish green, globose, 6 obscure vertical furrows, seeds, trigonous, two each in three crustaceous cocci. Taste sour and astringent, odour slightly characteristic.

3.2. Microscopic characteristics

Transverse section of Phyllanthus emblica L. fruit shows:

- a layer of epicarp cells are rectangular-shaped and outer walls are highly cutinized
- under the epicarp layer consists of different types of sclereids occurring as a single or small groups
- vascular bundles composed of spiral vessels are scattered present throughout the inner mesocarp
- prismatic and rosette calcium oxalate crystals are present in the thin-walled parenchyma

3.3. Characters of the powdered drug

Brown powder, slightly characteristic odour, sour and astringent taste. The diagnostic characters are:
— epicarp in surface view
— sclereids
— fibre sclereids
— prismatic calcium oxalate crystals
— rosette calcium oxalate crystals

4. Specification

4.1. Physicochemical data

• Loss on drying at 105°C : Not more than 7.4 %
• Foreign matter : Not more than 1.0 %
• Total ash : Not more than 2.9 %
• Acid-insoluble ash : Not more than 0.3 %
• Ethanol soluble extract : Not less than 26.8 %
• Water soluble extract : Not less than 33.4 %

5. Identification

5.1. Phytochemical test

A. To 2 mL of aqueous extract of the sample add 1 mL of a mixture of equal part of Fehling’s solution ‘A’ and Fehling’s solution ‘B’ and boil the contents of the test tube for few minutes. A brick red coloured precipitation is produced.

B. One mL of alcoholic extract of sample is dissolved in 1 mL of water and added sodium hydroxide solution. Yellow colour is produced.

C. One mL of alcoholic extract of sample is dissolved in 1 mL of water and 2 drops of 10 % ferric chloride solution. Blue colour is produced.

5.2. TLC profile

Dissolve 1 g of powder sample in 5 mL of ethanol, and shaking for a while, allow standing for 5 minutes. Filter and filtrate is used for chromatography.
Application volume : 3 μL
Solvent system : Chloroform : Chloroform : Ethyl acetate : Acetic acid (60:35:5)
Spray reagent : Iodine vapour
Stationary phase : Silica gel G

(A & D are glass plates, B & C are aluminium sheets GF254)

<table>
<thead>
<tr>
<th></th>
<th>Visual</th>
<th>UV 254 nm</th>
<th>UV 365 nm</th>
<th>Spray</th>
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<tr>
<td>Rf</td>
<td>0.60-0.58</td>
<td>Yellow</td>
<td>Brown</td>
<td>Black</td>
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<tr>
<td></td>
<td>0.08-0.3</td>
<td>Yellow</td>
<td>Brown</td>
<td>Black</td>
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</table>

6. References

Transverse section of *Phyllanthus emblica* L. fruit

1. Cuticle
2. Epicarp
3. Group of sclereids
4. Sclereids
5. Parenchyma containing prismatic crystals
6. Rosette calcium oxalate crystals
7. Fibrous sclereids
8. Spiral vessel