International Journal of ChemTech Research
CODEN (USA): IJCRGG, ISSN: 0974-4290, ISSN(Online):2455-9555
Vol.12 No.03, pp 55-58, 2019

Physicochemical and Phytochemical studies on Mucilage extracted from fruits of *Polyalthia longifolia*

Alvikar Annapurna R*, S. P Salokhe, Kasarkar A. R and D. K Gaikwad

Department of Botany, Vivekanand College Kolhapur and Department of Botany, Shivaji University, Kolhapur.
Dist-Kolhapur, Maharashtra (India) 416004

Abstract: In the present study Phytochemical and Physicochemical studies on mucilage extracted from fruit of *Polyalthia longifolia* have been evaluated. The preliminary phytochemical screening revealed the presence of Carbohydrate, Amino acid and Protein content, alkaloid, volatile oil, phytosterol. For exact and proper identification of plant and its constituents, Physicochemical parameters like (Total ash, pH, R.I is fundamental physical property can be used to identify the substances, confirm its purity and to measure the concentration. From above results the R.I of Polyalthia longifolia fruit mucilage powder it was 1.364), Specific gravity, Water holding capacity) provide useful information.
Keywords: Physicochemical, Phytochemical studies, Mucilage, Polyalthia longifolia.

Introduction

Polyalthia longifolia, the **False ashoka** native to India, is a lofty evergreen tree, commonly planted due to its effectiveness in alleviating noise pollution. *Polyalthia longifolia* is sometimes incorrectly identified as the ashoka tree (*Saraca indica*) because of the close resemblance of both trees. Found natively in India and Sri Lanka. It is introduced in gardens in many tropical countries around the world. It is, for example, widely used in parts of Jakarta in Indonesia and the Caribbean islands of Trinidad and Tobago. In spring the tree is covered with delicate star-like pale green flowers. The flowers last for a short period, usually two to three weeks, are not conspicuous due to their color.Fruit is borne in clusters of 10-20, initially green but turning purple or black when ripe. These are loved by birds such as the Asian koel *Eudynamys scolopaceus* and bats including flying foxes. The leaves are used for ornamental decoration during festivals. The tree is a main attraction in gardens throughout India. The tree can be cut into various shapes and maintained in required sizes. In past, the flexible, straight and light-weight trunks were used in the making of masts for sailing ships. That is why the tree is also known as the Mast Tree. Today, the tree is mostly used for manufacturing small articles such as pencils, boxes, matchsticks, etc.[polyalthia longifolia]. The stem bark are used to febrifuge, rheumatism, menorrhagia, scorpion sting and diabetes; Rheumatism, constipation, worm infestation, polyuria, skin disorders and fever respectively.[1]

DOI= http://dx.doi.org/10.20902/IJCTR.2019.120308

Habit and Ripened fruits of *Polyalthia longifolia*

Taxonomical status of*Polyalthia longifolia*:

Kingdon : Plantae

Division : Angiosperms

Class : Magnoliids

Order : Magnoliales

Family : Annonaceae

Genus : Polyalthia

Species : *P. longifolia*

Material and Methods :

Fruits of *Polyalthia longifolia* collected from Shivaji University campaus, Kolhapur.

Extraction of Mucilage :

The fruits of *Polyalthia longifolia* collected from Shivaji University campus. The mucilage content was extracted according to method of (7) and recovery of mucilage was stored in airtight container at room temperature and used for further analysis.

Phytochemical Studies:

Aqueous and Methanolic preliminary test of *Polyalthia longifolia* fruit mucilage were performed for confirming the nature of mucilage obtained. The chemical test were carried out like Molisch's test, Lead acetate test, Mayer's test, Millon's test [4,5]

Physicochemical Studies:

The qualitative physicochemical studies include (Total ash, Water soluble ash, pH, Specific gravity) [6], Refractive index [2,3].

Table 1 : Physicochemical Parameter of *Polyalthia longifolia fruit mucilage*

Parameter	Practical value
Total ash (%)	6.59
Water Soluble ash (%)	5.24
Acid soluble ash (%)	0.70
Specific gravity 0.01 (%)	0.121 gm/ml
pH of 1 % solution	Alkaline
R.I	1.364
Water holding capacity	3.19 ± 0.19
Moisture content	11.82 ± 0.11

Table 2 :Phytochemical constituents of *Polyalthia longifolia fruit mucilage*

Test for phytoconstituents	Methanolic extract	Aqueous extract
Carbohydrate		
◆ Molisch's test	+	+
◆ Fehling's test	+	+
◆ Benedicts test	+	+
Gums and Mucilages		
◆ Ruthenium red test	+	+
◆ Lead subacetate	+	+
Alkaloid		
◆ Hager's test	-	-
◆ Dragendroff''s test	-	-
◆ Mayer's test	-	-
Phytosterol		
◆ Salkowaski test	+	+
◆ Libermann's test	+	+
Flavonoid		
◆ Alkali & Acid test	+	+
◆ Ferric chloride test	+	+
Glycoside		
◆ Legal's test	+	+
◆ Brontager's test	+	+
Protein & Amino acid		
◆ Ninhydrin's test	+	+
◆ Millon's test	+	+
	+	+

Volatile oil		
Fixed oil		
◆ Spot test	-	-
◆ Saponification test	-	-
Tannin & Plant phenol		
◆ 5 % Ferric chloride test	+	+
◆ Copper sulphate test	-	-
◆ Lead acetate test	+	+

Conclusion :

In the present study Phytochemical and Physicochemical studies on mucilage extracted from fruit of *Polyalthia longifolia* have been evaluated. The preliminary phytochemical screening revealed the presence of Carbohydrate, Amino acid and Protein content, alkaloid, volatile oil, phytosterol. For exact and proper identification of plant and its constituents, Physicochemical parameters like (Total ash, pH, R.I is fundamental physical property can be used to identify the substances, confirm its purity and to measure the concentration. From above results the R.I of Polyalthia longifolia fruit mucilage powder it was 1.364), Specific gravity, Water holding capacity) provide useful information.

References :

1. Madhava Chetty, K., K. Sivaji and K. TulasiRao, 2008. Flowering plants of Chittoor district-Andhra Pradesh, India.1 edn. Students offset printers, Tirupati, pp: 14, 17, 18, 19, 25.
2. British Pharmacopoeia (1993). I and II Determination of Extractive values A153,Moisture content A145,Determination of swelling Index Appendices A157, Ash Values, A157, Optical Rotation, A114, Refractuveubdex A114, Saponification value A148
3. Brain, K. R., and Turner, T. D (1975). *The Practical Evaluation of Phytopharmaceuticals*. (Wright Scentechnica, Bristol)
4. Khandelwar K. R (2002). *Practical Pharmacognosy, Techniques and Experiments, 9th edition, Niraliprakashan*, pp.149-156
5. Trease G. E. and Evans W. C (1996). In Pharmacognosy, 4th edition; pp.196-210
6. SamsamShariat H. (1992). Qualitative and quantitative evaluation of the active constituents and control methods for medicinal plants. Mani publications, Isfahan, Iran : 202.
7. Narkhede S. B., Vidyasagar .G., Jadhav. A. G. Bendale A. R and Paterl K. N (2010). s*Pharm. Res.* 2(6)161-16.

*****