

DRUG GENUINITY AND ITS ROLE IN AYURVEDIC PHARMACOVIGILANCE W.S.R.T PIPPALI (PIPER LONGUM)

Dr. Princy Xavier¹

¹IIMD scholar,
 Dept. of Dravyaguna Vijnana,
 Govt. Ayurveda College
 Thiruvananthapuram

ABSTRACT

Background: Herbal preparations constitute the primary therapeutic interventions in Ayurveda. In Kerala more than 200 medicinal plants are taken on large scale for the preparation of medicinal products. Pippali is one among the drug which is used in almost all formulations. The genuinity, purity and quality of the drugs have direct impact on the quality of medicinal formulations. In the present study an attempt has made to ascertain the genuineness of fruit of Pippali in Kerala market, in concern with pharmacovigilance.

Methods: Samples were collected randomly from different markets of Kerala. Genuiness of samples were analysed formacroscopic, microscopic and physicochemical parameters like total ash, water soluble extractives, TLC and HPTLC.

Results: Marked variations are noted in both macroscopic and microscopic characters. Instead of Piper longum, Piper retrofractum is using in many parts of Kerala. HPTLC was performed between the samples which showed marked differences in quantity of Piperine, which is a major chemical constituent of Pippali. Some of the samples does not matches with the parameter mentioned in API.

Conclusion: Standardisation of finished products can achieved only by the usage of genuine drugs. . The need of the hour is to take caution right from the collection of raw drug so as to avoid adulteration and substitution, which in turn prove that the AYUSH drugs are safe and scientific in global market.

Keywords: Genuineness, fruit of Pippali, physicochemical analysis, HPTLC

Corresponding Author

Dr. Princy Xavier
 IIMD scholar,
 Dept. of Dravyaguna Vijnana,
 Govt. Ayurveda College
 Thiruvananthapuram

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INTRODUCTION

Right from adverse drug reaction to the lack of efficacy Pharmacovigilance covers a broad spectrum of subjects, concerning a herbal drug. Genuinity of a drug refers to its purity in terms of quality, efficacy and safety. Owing to the issues like adulteration and substitution with counterfeit drugs, the term genuinity is only a imitation now a days. Among the various causes of ADRs, lack of genuinity remains a pivotal one which in turn affect the global acceptance of any herbal healing science.

Pippali is a drug used in India since the time of vedic period. Eventhough it is quite abundant and available Indian market has several variety of the drug under same name. This paper outlines briefly the role of drug genuinity in Pharmacovigilance with special reference to a market study done on pippali.

PIPPALI

Botanical name: *Piper longum* Linn.

Family: Piperaceae

Useful part: fruit, root

Dose – 1-3gm

Phytochemical constituents: Piperine, Piperlongumine, Sesamine, beta sitosterol, resins, volatile oil

Rasapancaka

Rasa: Katu Tikta Madhura

Guna: lagu, Snigdha

Veerya: Anushna

Vipaka: Madhura

Karma: Vatakaphagna

METHODS

A cross sectional descriptive study was conducted in the Kerala market regarding the genuinity of Pippali fruit.

Kerala state was divided into three zones for the sake study mainly south, central and north zones. 12 samples are collected from randomly from the market of three zones and labelled as A1,A2,A3,A4 from south zone, B1,B2,B3,B4 from the central zone and C1,C2,C3,C4 from the north zone. A genuine sample was collected from Odakalil Spice research Institute Ernakulam.

These samples were analysed for macroscopic, microscopic, physicochemical parameters like qualitative analysis (presence of steroid, alkaloids) quantitative analysis (ash value, HPTLC etc)

RESULTS

ORGANOLEPTIC EVALUATION

Marked variation are noted in the macroscopic characters like size, shape and odour. Some samples showed marked difference in the size when compared with normal size i.e 2.5-5cm long. Some samples are round in shape compared to normal long spike.

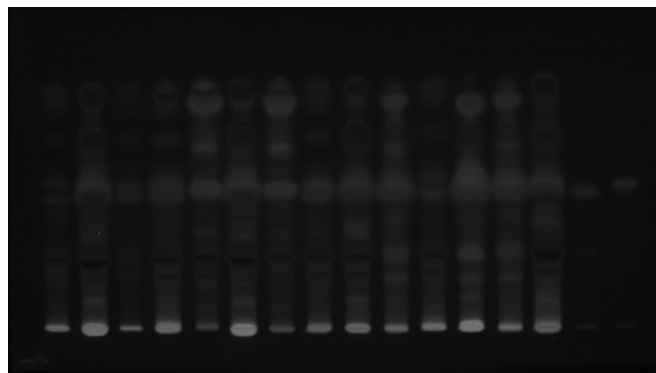


Table 1: Qualitative analysis

samples	Steroids	Alkaloids
Genuine	++++	+
A1	-	+
A2	++++	++
A3	+	++++
A4	+++	++++
B1	+	+
B2	-	+
B3	+	+++
B4	-	+++
C1	++	++++
C2	+++	++++
C3	+++	++++
C4	+++	++++

HPTLC profile

HPTLC was performed by quantifying piperine and piperlongumine indifferent samples of *Pippali*.



DISCUSSION

From the study it is evident that most of the samples are not matching the with API standards. This may be due to improper cultivation, collection and storage practices or may be due to the lack knowledge regarding the botanical identity of the drug. Need of the hour is standardization of finished product by ensuring the genuinity of drug, which inurn contribute directly or indirectly to mitigate ADR issues of any drug resulting from counterfeit drugs.

CONCLUSION

In the study it can be concluded that, different varieties of *Pippali* are available in the crude drug market having different physicochemical and organoleptic features. Instead of *Piper longum*, *Piper retrofractum* and *Piper chaba* are used in many parts of Kerala. HPTLC results showed marked differences in quantity of piperine and piperlongumin which are the major chemical constituents in *Pippali*.

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