



INTERNATIONAL JOURNAL OF PHARMACY & LIFE SCIENCES  
**Phenological and ethnobotanical studies of**  
***Emblica officinalis* Gaertn.**

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**Abstract**

Phenology and ethnobotany of *Emblica officinalis* Gaertn. has been included in this paper. It has been observed that the plant defoliated during January-March and showed the emergence of new leaves in the month of May. This species abscised leaves during February. Likewise, blooming and fruiting activity of the species occurred during March-April and September to April. Ethnobotany of the plant has also been mentioned in this communication.

Keywords: *Emblica officinalis*, Phenology, Ethnobotany

**Introduction**

Phenology is the study of the timing of recurrent biological events, with regard to abiotic and biotic factor and interaction among the phases of some or different species. Likewise, ethnobotany includes the utilization of species by the inhabitants of our society. Phenological research had played a significant in agriculture and ecological research<sup>1</sup>. Moreover, reproductive phenological events have effected by various abiotic and biotic factors<sup>2</sup>. Obviously, Studies on reproductive pattern of a species would be useful to assess the strength of ecological interaction and phylogentic inertia. Considerable works have been done on various aspects of phenological of some species, forest, remote areas etc.<sup>3-8</sup>. A survey of literature reveals that the equivalent work on phenology of *Emblica officinalis* has not been done so for. Therefore, present work was conceived.

**The Study Site**

The present investigation was conducted in Chhuhia forest, a tropical dry deciduous forest of Central India. The Chhuhia forest is situated at a distance of 28 km from Rewa city on the border of Sidhi-Rewa districts. It is situated at latitude 24<sup>0</sup> – 20<sup>0</sup> N and Longitude 81<sup>0</sup>-20<sup>0</sup> E on the Kymore range of the Vindhyan mountain which is known as Rewa Plateau.

The Southen flank of the hill is characterized by steep and sharp slopes, whereas the northern flank is comparatively gentle in gradient. The soil cover is thin on the top of the hill along the hill side the soil is normally reddish brown, well drained and ferruginous. The hill is characterized by rock formation like sand stone and conglomerates. The soil is generally sandy and sandy loam.

**Plant Profile**

*Emblica officinalis* is a medium sized tree, cultivated in various part of our country for its valuable fruits. It is also found in tropical forest of Madhya Pradesh. Plant has a stout, barky trunk along with numerous branches. Inflorescences are in axillary fascicles. Flowers are unisexual, male flowers are more in number and short pedicellate. Female flowers are less in number and sub-sessile. Fruits are globase, light yellow in color. It has vertical turrows and three-two seeded crurtose cocci.

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## Methodology<sup>9-12</sup>

Phenological studies of *Emblica officinalis* was carried out by selecting five individuals with fortnight visit during 2008-2009. Observations were made on vegetative and reproductive phenology of marked individuals. Leaving phenological observation included the initiation and completion of leaf fall and leaf flushing had been also observed. The leafless period of plant was calculated as a period between the date (week) of complete abscission of old leaves and the emergence of new leaves. In flowering phenological event, the plant was observed for initiation of floral buds, their anthesis into flower, and withering of flowers. The periods of initiation of fruits, their maturation and ripening were recorded for each species in fruiting phenology.

## Results and Conclusion

### Phenology

#### Leaf fall and leaf lush

*Emblica officinalis* showed initiation of leaf fall in the 2<sup>nd</sup> week of March and completion in the 3<sup>rd</sup> week of May, showing the leafless period of 2 week. Likewise, initiation of new leaves occurred in the 4<sup>th</sup> week of May. It has been observed that the leaf fall and leaf flush occurred in dry season, during the period of high temperature.

#### Blooming and fruiting phenology

The peak activity of flowering of amla coincided with the leaf fall and leaf flush with a flowering duration of 03 weeks, showing the proximal flowering. Consequently, the fruiting activity was completed in 31 weeks. The fruits maturation and ripening was observed throughout the year, except June and July.

### Ethnomedicinal Importance

#### Food value

Fruits of amla are used to make chawanprash and triphla powder. Some other eatables items such as pickle, murrabba, barfi etc. have also been prepared by the fruits.

#### Medicinal

Amla is used for the treatment of diarrhoea, dysentery and dyspepsia. It is also used for the viral infection of neck. The juice of its fruit and infusion of its seed is used for the treatment of swelling of eyes. Its boiled fruit is beneficial for the treatment of measles, anemia and jaundice.

Fermented liquid of this fruit is used for the treatment viral hepatitis and viral infection. Its juice is useful for bacterial dysentery along with the lemon juice. Amla fruits powder along with harra and bahera (triphla) is an excellent remedy for gastrointestinal disorders.

#### Other uses

The bark leaves and fruits of amla are used for tanning and coloring agents. Water does not effect on its red hard wood. Hence, its wood is used to make pole and agriculture tools. A good quality of charcoal is found from its wood. Wood is also used as fuel.

### Religious importance

*Emblica officinalis* is a sacred and religious plant. The plant is worshipped by Hindu ladies is somwati amawashya for the welfare of their family.

### Acknowledgement

The authors are thankful to the tribes of the study area for revealing the uses and one of the senior author (SND) is thankful to UGC for financial assistance.

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