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Phenological events and medicinal importance of some weeds of family Asteraceae

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Abstract

Weeds are very significant in the field of Ethnomedicine. Phenological analysis of weeds is also important than their bare knowledge of medicinal use. Phases in the lifecycle of a plant show rhythmic changes in relation to the set of environmental conditions & knowledge about occurrence, period of different phenophases of weeds is more useful to use their different parts for curing various diseases. Present study aims at analyzing the phenological events of weeds *Ageratum conyzoides* Linn *Eclipta prostrata* Linn**.** *Tridex procumbens* Linn *Xanthium strumarium* Linn. *Lagascea mollis* Cav. *Caesulia axillaris* Roxb. of family Asteraceae along with their medicinal uses. these monsoon and post monsoon flowering weeds complete their life cycle within three to five months. Fruit formation starts with the beginning of peak flowering in all the plant species which usually lasts for three to six weeks.

The result of this study provide information of lifecycle of medicinal weed species to the rural people, who depend upon the season for availability of these plants This analysis will provide a great scope for utilizing weeds of Asteraceae to the benefit of rural people besides easy availability for preparation of medicines, since they grow fast and therefore can provide a continuous supply of medicinal products. bag at room temperature for two months without loss of oil content.

Key words: Weeds, Ethnomedicine, Phenology, Asteraceae.

Weed species form a component of plant diversity, offer alternative prey/ host's, pollen or nectar and microhabitats for the insects and microorganisms. Weeds, regarded as criminals of plant world or plant pests[10] may be found growing on agricultural fields and gardens or as rural plants[2,11,16].

Weeds are very significant in the field of Ethnomedicine. Ethnomedicinal study of some weed plants of Uttranchal plains was carried out by Shyam & Bhargav[14]. Weeds of Kanyakumari district and their value in rural life was studied by Jeeva *et al*.,[6]. Pheno-logical analysis of weeds is also important than their bare knowledge of medicinal use. Phases in the lifecycle of a plant show rhythmic changes in relation to the set of environmental conditions & knowledge about their occurrence, period of different phenophases of weeds is more useful to use their different parts for curing various diseases.

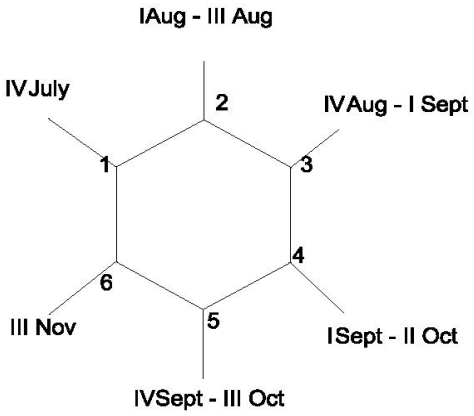
Earlier phenological events of *Cassia tora* have been studied by Singh[15], Dubey[3], *Eclipta prostrata* Linn. by Gupta[5], *Xanthium strumarium* by Jain[6]. Present study aims at analyzing the phenological events of weeds of family Asteraceae along with their medicinal uses.

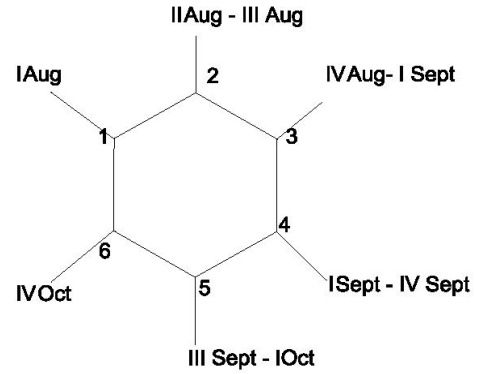
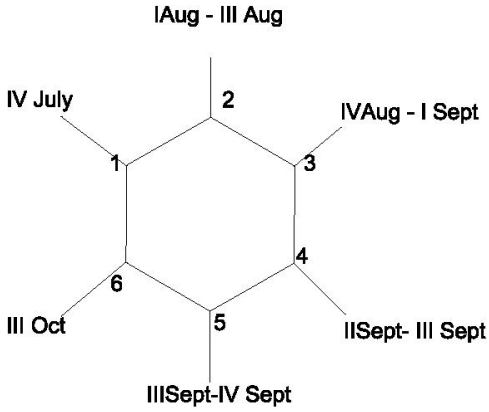
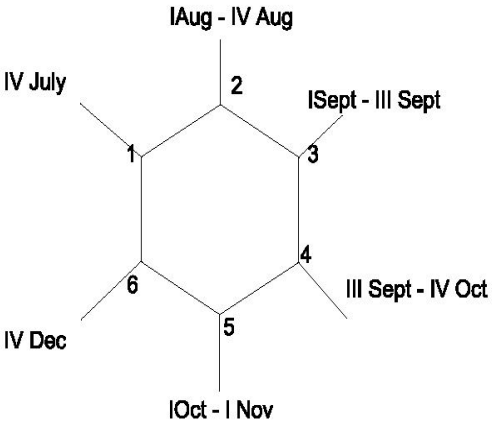
The weeds of family Asteraceae were selected on the basis of ecological performance, identified by using flora of Duthie[4] and tagged for phenological studies after proper and thorough observation of various sites of Bhopal during monsoon & post-monsoon period. The phenological phases of weed species were observed twice a week, recorded and represented by Phenograms. Climatic data was obtained from the local Meteorological Observatory.

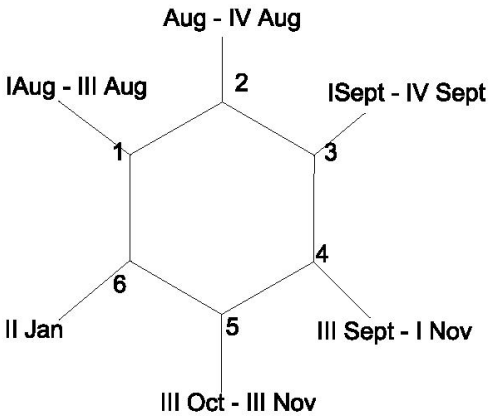
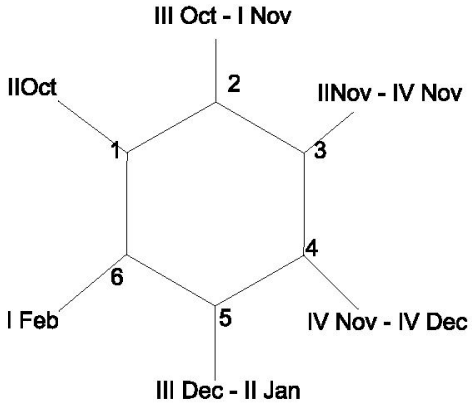
Phenograms and medicinal uses of weeds of family Asteraceae :

I, II ,III ,IV denotes weeks of a month in a Phenogram

1,2.3.4.5.6 denotes different phytophases- Seedling stage , Vegetative Span , Bud span, Flowering span, Fruiting span, Death.

S. No.	Name of Weeds	Phenograms	Medicinal uses
1	*Ageratum conyzoides* Linn.		1. The leaves are used in leprosy and uerine disorder.also used in killing hair lices. 2 .Leaf paste is applied on cuts, wounds and burns. 3 Leaf juice is useful in skin diseases and scabies.(Sahu and Shrivastava 2010)

2	*Eclipta prostrata* Linn.		1. leaf juice with coconut oil applied on hairs for nourishment. 2. Root paste is applied externally as an antidote to snake bite. 3. Plant powder boiled in water is used in malarial treatment. 4. After burning of whole plant, it is made into powder mixed in coconut oil applied on eyelids for conjuctivitis.
3	*Tridex procumbens* Linn.		1. Smelling of flowers reduces cold. 2 .Paste of leaves is given in boils, cuts and wounds. 3. Leaf is also useful in diarrhoea, dysentery and leprosy. 4 . Leaf juice is very effective in kidney stone and relieves earache.
4	*Xanthium strumarium* Linn.		1. Fruits are slightly narcotic and useful in various diseases. They are diuretic, powerfuldiaphoretic and sedative (kanjilal and Das 1939). 2 . The root is bitter and toxic useful in strumous disease and cancer. 3. Fruits are cooling, demulcent and are given in smallpox (*Bull Bot. Surv. India* 1960).

5	*Lagascea mollis* Cav.		1. Whole plant paste with camphor and mustard oil is applied on chest and throat to cure cold, cough and nasal congestion. 2 . Paste of the inflorescence with black pepper and cow milk is given to cure dysentery.
6	*Caesulia axillaris* Roxb.		1. Whole plant paste with camphor and mustard oil is applied on chest and throat to cure cold, cough nasal congestion. 2. Paste of the inflorescence with black pepper and cow milk is given to cure dysentery. 3. Whole plant extract is given to cure malaria (Panda & Mishra 2011) .

Selected weed species start their life cycle in monsoon and post-monsoon season .Seedlings of *Ageratum conyzoides, Eclipta prostrata, Tridex procumbens* and *Xanthium strumarium* were seen during fourth week of July to first week of August, whereas seedlings of *Lagascea mollis* appeared in fourth week of August and *Ceasulia axillaris* appeared in the second week of October.

Vegetative phase continued up to third week of August in *A.conyzoides, E. prostrata, & T. procumbens*, up to fourth week of August in *X. strumarium* and *L. mollis*. Throughout the month of August vegetative growth was seen in all the weeds except *C. axillaris* which shows luxuriant vegetative growth up to November.

Reproductive phase started with appearance of floral buds from the last week of August and budding continued at par with

flowering and fruiting. Appearance of flowers and development of fruits and seeds started in first week of September and continued up to third week of October in *A. Conyzoides* & *E. prostrata*, fourth week of September in *T. procumbens*, first to fourth week of November in *X. strumarium* and *L. mollis* respectively, and in *C. axillaris* in second week of November. Life cycle of *C. axillaris* started in second week of October with vegetative growth till second week of November followed by budding, flowering and fruiting till second week of January and,the end of life span was reported in first week of February. *A. conyzoides* survived till third week of November, *E. prostrata* fourth week of October, *T. procumbens* third week of October, *X. strumarium* and *L. mollis* completed their life cycle by fourth week of December and second week of January respectively.

In conclusion it can be said that these monsoon and post monsoon flowering weed species complete their life cycle within three to five months. Fruit formation started with the beginning of peak flowering in all the plant species which usually lasted for three to six weeks. Overall plantation and conservation of weed species, which are of medicinal importance, are part of rural population. The result of this study will now provide information of lifecycle of medicinal weed species and efficiency of medicinal plants varies from different parts of the plants (root, stem, leaf ,flower, fruit & seeds) found in different time period under varied climatic conditions. The rural people depend upon the season for availability of these plants[9]. This analysis will provide a great scope for utilizing weeds of Asteraceae to the benefit of rural people besides easy availability for preparation of medicines, since they grow fast and therefore can provide a continuous supply of medicinal products.

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