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PHENOLOGICAL OBSERVATIONS OF SOME TREE SPECIES OF AKOT REGION, DISTRICT AKOLA (MAHARASHTRA)

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ABSTRACT:
Phenology of tree species was studied in Akot region of Akola district during 2015 to 2017.Akola district is situated in Vidarbha region of Maharashtra state. Forest of this area is dry deciduous type. Phenology is the calendar of events in life history of plants. This paper deals with the study of phenological observations like leaf initiation, leaf fall, flowering and fruiting. The phenological information obtained in this study is mostly influenced by the season. Phenological observations are made of selected 16 tree species. Most of the species show flowering in the month of March- April. Leaf fall was maximum during the period from March-April. The peak period of maturation of fruit was May-June.

Keywords: Phenology, Tree, Flowering, Akot

INTRODUCTION :

Phenology is the study of the timing of the biological events in plants such as flowering, leafing and reproduction in relation to changes in season and climate. The life history of plant species involves seed germination, vegetative growth, flowering, fruit formation, seed maturation, seed dispersal and death. The study of phenology provides information and knowledge about the pattern of plant growth and the development as well as effect of environment and selective pressures on flowering and fruiting behaviour (Zhang et al.2006). Variation in flowering time relative to vegetative phenology induced by variety of factors like significant rain in winter or summer, decreasing or increasing photoperiod or drought induced leaf fall, results in a number of flowering patterns in tropical trees(Borchert et al.2002).Phenology of tree in any ecosystem and community determines the flowering periods which is indirectly dependent on the environmental variations(Rivera et al.2002, Hamann 2004,Zhang et al.2006). The main aim of this study was to analyse the different phenological events of some selected tree species in the dry deciduous forest. Here phenological observations were carried out on sixteen tree species of eight different families over a period of two years from January2015-January2017.

MATERIAL AND METHOD:

The present study was carried out during the period January 2015 to January 2017 in Akot region. Akot town lies in the northernmost of the Akola district. Akola district lies in the western parts of the Vidarbha region of Maharashtra. Phenological observations were made of the selected tree species. Detailed observations were carried out at monthly intervals over a period of two years for each tagged tree. To study the phenology, leaf fall, duration of first and last flowering, new foliage and fruiting of selected plant species were recorded. Phenological observations were made on 16 plant species of Akot region.

Table 1 : Phenological observations of the Tree species of Akot region ,Akola District

S.N.	Name of species	Family	Leaf fall	Flowering	Fruiting
1	*Acacia nilotica*	Mimosaceae	February-March	May -June	July-August
2	*Ailanthus excelsa*	Simaroubaceae	February-March	February-March	May-June
3	*Azadirachta indica*	Meliaceae	February - March	March- April	May-July
4	*Annona reticulata*	Annonaceae	March - April	June-July	October-November
5	*Bauhinia variegata*	Caesalpiniaceae	March-April	January-March	March-May
6	*Bombax ceiba*	Bombacaceae	February-March	January -March	February -April

7	*Butea monosperma*	Papilionaceae	January-March	February -March	April -May
8	*Cassia fistula*	Caesalpiniaceae	February-March	April -June	July-September
9	*Dalbergia sisso*	Papilionaceae	January-February	March- April	May-July
10	*Delonix regia*	Caesalpiniaceae	February-March	April-June	June-July
11	*Erythrina suberosa*	Papillionaceae	January - February	March -April	May-June
12	*Ficus religiosa*	Moraceae	January-February	April -May	May-June
13	*Helictres isora*	Sterculiaceae	March-April	July -September	October - January
14	*Holoptelea integrifolia*	Ulmaceae	February - March	February -March	March-April
15	*Melia azedarach*	Meliaceae	January-February	November-December	February-March
16	*Pongamia pinnata*	Papillionaceae	February-March	April-May	May -July
17	*Semecarpus anacardium*	Anacardiaceae	February - March	September-November	January-February
18	*Tectona grandis*	Verbenaceae	February-March	August-October	December-January
19	*Terminalia catapa*	Combretaceae	January - February	March-April	June -October
20	*Terminalia arjuna*	Combretaceae	January-February	May-June	July-August

RESULT AND DISCUSSION:

Twenty tree species with thirteen different families were selected for Phenological study in Akola district of Maharashtra. From the present phenological study it was observed that the annual phenological cycle starts from leaf fall phase followed by blossoming phase. The seasonal activity in dry deciduous tree of study area in general is more conspicuous in summer month. The peak time for flowering was observed in last week of February to March in six plant species *Ailanthus excelsa, Butea monosperma, Erythrina suberosa, Bombax ceiba, Dalbergia sisoo and Holoptelea integrifolia* . In some tree species like *Cassia fistula* and *Tectona grandis* flowering phase is remarkably prolonged. Fruiting was observed mostly in month of May to June in most of the tree species. Leaves fall were maximum in between month of January to March in most of the species. Initiation of leaf and phase of fruiting takes place either subsequently or simultaneously.

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