

## Studies on phenological events of certain medicinal plants

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### SUMMARY

The surroundings have fascinated man, since time immemorial and by virtue of his brain's ability of quest and the wandering habits have gathered sufficient scientific knowledge about flora and fauna. The current paper records the phenological data of four important medicinal plant species *Abrus precatorius*, *Mucuna prurita*, *Gloriosa superba* and *Dioscorea bulbifera*. Parameters on which the phenological observations were made are, vegetative phase, flowering phase, seed maturity phase, leaf fall phase and budding phase. This phenological study gives us a complete guide line to understand the response of plant species to different climatic factors and the periodicity of the plant.

Key words : Phenology, Flora-Fauna, Climatic factors, Periodicity, Parameters.

The name phenology is defined as the study of the plants and animals seasonal rhythm, that is their life cycle events during each season of the year. These rhythms are closely related to climate changes (Rathcke B and Lacey E.P 1985). The plant's phenological events are the emergence, growth, induction, seed establishing and dormancy breakage, leaves production and fall, induction and development of floral gems, anthesis, fruit production and maturation and seed dispersion, as well as other phenomenas are included (Martins, F.R 1982).

The only report on phenology involving medicinal plants was briefly described by Panizza (Panizza.S 1997). The *Kalanchoe brasiliensis* is popularly used as an anti-inflammatory and validated by pharmacological studies (Panizza.S 1997; Ibraim,T.et al.,1998). However (Santos et al.,1998) studying the same species, verified that right after floration the plant did not posses any anti-inflammatory property on the contrary, it stimulates the inflammation process. The active principle levels may vary as a function of the plant's developing stage and/or the edapho-climatic conditions where it grows. In view of these facts there is an urge for studying the phenological phenomenon of species, with the goal to determine the level of active principals on all plant's stage, and in this way determine which season the plant present the highest level of active principles. In order to perform this study, it is necessary to collect the plant's material during all development stages, submitting this material for pharmacological tests. Although phonology is a valuable scientific and economical knowledge, researches on this field are still scarce. However it is possible to find some reports, such as the *Lychnophora pinaster* Mart., (Silva S.M.P 1998) *Egletes viscoso*

(Bezerra A.M.E Souza, C.B 1997) and *Mentha arvensis* L.var. *Piperacens Moor* (Mattos S.H et al., 1997).

Some of the important phenological aspects of medicinal plants are as follows: Literature on the phenology and annual growth patterns of teak is scanty. Champion(1934) studied the seasonal progress of height growth of teak saplings at DehraDun. Troup (1921) as well as Krishnaswamy and Mathuda (1954) reported on the phenology.

Therefore Plant phenology permits a calander to construct the growth activity of plants especially the period of new leaf bud, appearance of mature leaves, flowers, bud initiation, formation of mature flowers, young fruits formation and seeds maturity etc. Hence, it is very important to know about the exact timming of various phonological events for a particular tree or shrub species to raise the nurcery in time and for the need of animal and human being for various purposes.

### MATERIALS AND METHODS

The data were collected at regular intervals of 15 days for the whole year from june 2004 to December 2005 and the phenogram was prepared following the method of Harper (1906).

The phenological characteristics such as vegetative growth, flowering, fruiting and fruit ripening in four species they are, *Abrus precatorius*, *Mucuna prurita*, *Gloriosa superba* and *Dioscorea bulbifera*.

### RESULTS AND DISCUSSION

Man due to its superiority in the ecological chain was always associated with the changes in surrounding flora and fauna. When hunter gathered man started

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