

REPRODUCTIVE PHENOLOGY OF DOMINANT TREE SPECIES IN TROPICAL DECIDUOUS FOREST OF HASTINAPUR REGION IN WESTERN U.P.

Narendra Pal Singh*, R.C. Arya*, Narendra Pratap Singh* and Vinay Pratap Singh[†]

*Department of Botany, Meerut College,
J.N.U. New Delhi[†]

Abstract: Flowering and fruiting phenology of 20 selected dominant tree species in tropical deciduous forest of Hastinapur region in western U.P. was observed through fortnightly visit during November 2009 to December 2011 revealed that there exists a strong seasonality for flowering and fruiting phenophases. Reproductive interphenophases duration between phenological events varied for different selected dominant tree species. The fruiting phenology follows closely the flowering phenology. Correlation analysis shows that, there was a positive correlation between the interphenophase duration of production of young fruits (YFr) - maturation of fruits (MFr) and production of young flowers (YF1) - maturation of flowers (MF1) but no correlation was found between the interphenophase duration of maturation of fruits (MFr)- ripening of fruits (RFr) and maturation of flowers (MF1) - abscission of flowers (AF1). Phenological behaviour displayed by the trees are the result of interaction of surrounding biotic and abiotic environment.

Keywords: Correlation, Flowering, Fruiting, Hastinapur, Phenology

REFERENCES

- Bullock, S. H.** (1982). Population structure and reproduction in the neotropical dioecious tree *Compsonura sprucei*. *Oecologia*, 55(2), 238-242.
- Borchert, R.** (1983). Phenology and control of flowering in tropical trees. *Biotropica*, 81-89.
- Borchert R, Meyer SA, Felger RS, Porter-Bolland L.** (2004). Environmental control of flowering periodicity in Costa Rican and Mexican tropical dry forests. *Global Ecology and Biogeography* 13: 409-425.
- Borchert, R., Renner, S. S., Calle, Z., Navarrete, D., Tye, A., Gautier, L., & von Hildebrand, P.** (2005). Photoperiodic induction of synchronous flowering near the Equator. *Nature*, 433(7026), 627-629.
- Curtis, J. T., & McIntosh, R. P.** (1950). The interrelations of certain analytic and synthetic phytosociological characters. *Ecology*, 31(3), 434-455.
- Diaz, M., & Granadillo, E.** (2005). The significance of episodic rains for reproductive phenology and productivity of trees in semiarid regions of northwestern Venezuela. *Trees*, 19(3), 336-348.
- Jackson, M.L.** (1968). Soil chemical analysis. Prentice Hall. New Delhi 498 pp.
- Kikim, A., & Yadava, P. S.** (2001). Phenology of tree species in subtropical forests of Manipur in north eastern India. *Tropical Ecology*, 42(2), 269-276.
- Kushwaha, C. P., & Singh, K. P.** (2005). Diversity of leaf phenology in a tropical deciduous forest in India. *Journal of Tropical Ecology*, 21(1), 47-56.
- Lieberman, D.** (1982). Seasonality and phenology in a dry tropical forest in Ghana. *The Journal of Ecology*, 70, 791-806.
- Mishra, R.** (1968). Ecology work book. Oxford and IBH Publishing Co., Calcutta.
- Muller- Dombois, D. And Ellenberg, H.** (1974). Aims and Methods of Vegetation Ecology. *John Wiley and Sons, New York.*
- Prasad, S. N., & Hegde, M.** (1986). Phenology and seasonality in the tropical deciduous forest of Bandipur, South India. *Proceedings: Plant Sciences*, 96(2), 121-133.
- Rivera, G., Elliott, S., Caldas, L. S., Nicolossi, G., Coradin, V. T., & Borchert, R.** (2002). Increasing day-length induces spring flushing of tropical dry forest trees in the absence of rain. *Trees*, 16(7), 445-456.
- Sarukhan, J., Martinez-Ramos, M., & Pinero, D.** (1984). Analysis of demographic variability at the individual level and its population consequences. *Perspectives on plant population ecology/edited by Rodolfo Dirzo and Jose Sarukhan.*
- Seghieri J, Floret Ch, Pontanier R.** (1995). Plant phenology in relation to water availability: herbaceous and woody species in the savannas of northern Cameroon. *Journal of Tropical Ecology* 11: 237-254.
- Singh, K. P., & Kushwaha, C. P.** (2005). Paradox of leaf phenology: *Shorea robusta* is a semi evergreen species in tropical dry deciduous. *Current Science*, 88(11).
- Singh, K. P., & Kushwaha, C. P.** (2006). Diversity of flowering and fruiting phenology of trees in a tropical deciduous forest in India. *Annals of Botany*, 97(2), 265-276.
- Van Schaik, C. P., Terborgh, J. W., & Wright, S. J.** (1993). The phenology of tropical forests: adaptive significance and consequences for primary consumers. *Annual Review of Ecology and Systematics*, 353-377.
- Zeevaart, J. A.** (1976). Physiology of flower formation. *Annual Review of Plant Physiology*, 27(1), 321-348.