

## FORMATION OF ABNORMAL CAPITULUM IN *GELLARDIA*-A TERETOLOGICAL REPORT

S. SINGH and R. K. SHARMA

P.G. Department of Botany, Govt. M.S.J. College, Bharatpur-321001, India.

Members of family *Astraceae* have characteristic capitulum type of inflorescence, which is single and terminal in position. Stem in the family is cylindrical. Few plants growing in the botanical garden of M.S.J. College, Bharatpur (India) have flat, ribbed and ribbon shaped stem bearing an abnormal inflorescence, which have five secondary capitula emerging from the main capitulum. Some plants were found to have two-three capitula on the same axis.

**Keywords:** Abnormal capitulum; *Gellardia*; Teretological report.

Symmetry, polarity and form of organs are characteristic, used, as taxonomic evidence for the identification of different taxa of a family. *Astraceae* is recognized by its inflorescence i.e. capitulum or head. Head has condensed and convex receptacle from which ray and disc florettes develop from its peripheral and central part, respectively.

*Gellardia* is a common winter herbaceous ornamental plant of India. Plant has simple acute leaves, cylindrical hairy stem and capitulum type of inflorescence.

In botanical garden of M.S.J. College, Bharatpur (India) *Gellardia* is grown along with other ornamental plants, which bloom in December. In December 2006, few *Gellardia* plants produced abnormal capitula. One plant produced 2-3 head from the single point of inception arranged systematically (Fig. 1-3).

Another plant produced single capitulum but after some time of blooming it became somewhat elliptically discoid in shape and produced five more secondary capitula, developed from the primary capitulum. Such secondary capitula remained relatively smaller in size (Fig. 4). The secondary capitulum has independent involucre and normal ray and disc florettes (Fig. 2). Stem of all such plants became flat and ribbon shaped instead of cylindrical (Fig. 1-3). These plants were protected and observed till maturity. Plant remained unbranched. Flattening of stem is a characteristic feature of mycoplasmal infection<sup>1</sup>.

Previously abnormal capitulum has been reported in *Tagetes*<sup>2</sup>, in which reproductive shoot apex divided systematically in two plus two.

In *Gellardia*, it seems that mycoplasmal infection has induced abnormal behaviour of reproductive shoot apex, which has induced formation of secondary capitula from the condensed nodes of primary capitulum.

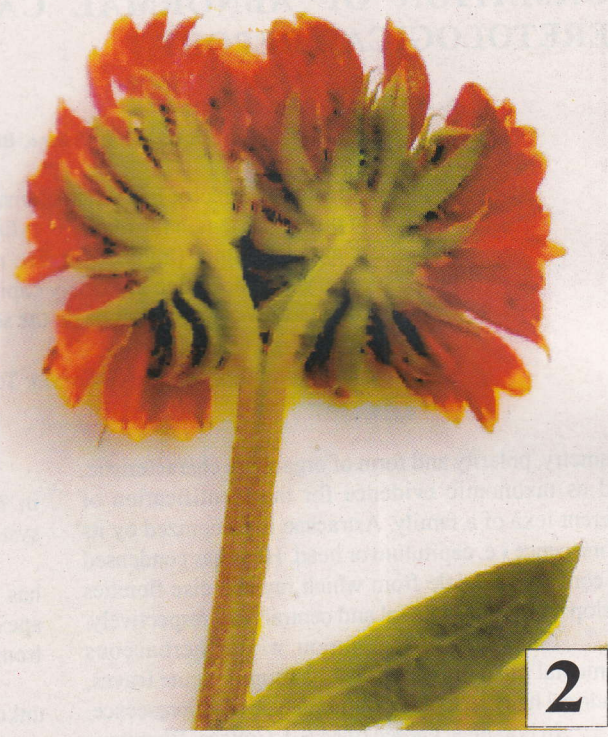
The reason of induction of abnormality is unknown in *Tagetes* and fruit of *Carica*<sup>3</sup>. In present study mycoplasmal infection is supposed to be a reason for abnormal development of capitulum as in *Cycas* stem branching<sup>4,5</sup>. The detailed study is being carried out.

### References

1. Agrios G N 2004, Plant Pathology, Academic Press-Oxford.
2. Singh S and Sharma O P 1993, Bifurcation in Capitulum of *Tagetes petula* Linn. - A teretological report. *J. Phytol. Res.* 6(1-2) 76.
3. Singh S and Singh S P 1992, Formation of abnormal fruit in *Carica papaya*. *Bomb. Nat. Hist. Soc.* 89(2) 271.
4. Caldwell W 1907, Micro-cycas colocoma. *Bot. Gazette* 44 118-141.
5. Coulter J and Chambérlain C 1964, Morphology of Gymnosperms (Revised Edn.) Central Book Depot, Allahabad.



1



2



3



4

Fig. 1 & 2. Axis producing two capitula (Front and back view respectively).

Fig.3. Axis producing three capitula.

Fig. 4. Development of secondary capitula from primary capitulum.

(Fig. 1-4 : Note flattening of axis)