

NATURAL OCCURRENCE OF SECONDARY CAPITULA PHENOTYPE IN *CALENDULA OFFICINALIS* L.

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Abstract: During the spring season (February-April) 2015, the natural occurrence of secondary capitula phenotype was found in *Calendula officinalis* L. in DAV University Campus, Jalandhar, Punjab, India. Out of all *C. officinalis* plants grown, 5.3% were found to bear secondary capitula emerging from primary capitula. One plant was found to bear a tertiary capitulum. A comparative analysis of this dataset of naturally occurring secondary capitula was made with the previous reports of secondary capitula phenotype in *C. officinalis* induced by Gibberlic acid (GA) treatment. The observations were found to be in congruence with a previous report. Further, a possible phytopathogen *i.e.* phytoplasma, was also addressed as a potential cause of the phenomenon.

Keywords: *Calendula officinalis*, Plant, Seed

REFERENCES

Bose, T. K. and Nitsch, J. P. (1970). Induction of secondary inflorescence in *Calendula* by gibberellic acid. *Naturwissenschaften*, 57(5): 254.

Ding, Y.; Wu, W.; Wei, W.; Davis, R. E.; Lee, I. M.; Hammond, R. W.; Sheng, J.P.; Shen, L.; Jiang, Y. and Zhao, Y. (2013). Potato purple top phytoplasma-induced disruption of gibberellin homeostasis in tomato plants. *Annals of applied biology*, 162(1): 131-139.

Khalid, K. A. and da Silva, J. T. (2012). Biology of *Calendula officinalis* Linn.: focus on pharmacology, biological activities and agronomic practices. *Medicinal and aromatic plant science and biotechnology*, 6(1): 12-27.

Khan, M. U.; Rohilla, A.; Bhatt, D.; Afrin, S.; Rohilla, S. and Ansari, S. H. (2011). Diverse belongings of *Calendula officinalis*: an overview. *International Journal of Pharmaceutical Sciences and Drug Research*, 3(3): 173-177.

Mardi, M., Farsad, L. K., Gharechahi, J., & Salekdeh, G. H. (2015). In-Depth Transcriptome

Sequencing of Mexican Lime Trees Infected with Candidatus Phytoplasma aurantifolia. *PLoS one*, 10(7), e0130425.

Pavlovic, S.; Starovic, M.; Stojanovic, S.; Aleksic, G.; Kojic, S.; Zdravkovic, M. and Josic, D. (2014). The First Report of Stolbur Phytoplasma Associated with Phyllody of *Calendula officinalis* in Serbia. *Plant Disease*, 98(8): 1152.

Preeethi, K. C. and Kuttan, R. (2009). Wound healing activity of flower extract of *Calendula officinalis*. *Journal of basic and clinical physiology and pharmacology*, 20(1): 73-80.

Ram, H. Y. M. and Mehta, U. (1978). Origin and development of secondary capitula in *Calendula officinalis* L. in response to gibberellic acid. *Journal of Experimental Botany*, 29(3): 653-662.

Ukiya, M.; Akihisa, T.; Yasukawa, K.; Tokuda, H.; Suzuki, T. and Kimura, Y. (2006). Anti-inflammatory, anti-tumor-promoting, and cytotoxic activities of constituents of marigold (*Calendula officinalis*) flowers. *Journal of Natural Products*, 69(12): 1692-1696.

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