

## **Effect of plant hormones on floral bud retention under artificial hybridization in green gram (*Vigna radiata* L.) during summer season**

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Pulses are rich in protein and are the main source of essential nutrients. Green gram (*Vigna radiata* L. Wilczek) is also an important pulse crop and a rich source of nutrients. But its yield is not able to meet the demands of the consumers; it is generally grown under marginal lands. Effective utilization of economical important traits nested in the elite genotypes, core set, germplasm collection into the cultivar can be achieved through artificial hybridization. Artificial hybridization in green gram being a laborious coupled with a low rate of crossing success particularly during the *summer* season probably due to the unfavorable weather conditions leading to reduced hybrid pod setting. The investigation carried out during *summer* 2019 in green gram using different time of emasculation and pollination; along with various plant hormone treatment and different mode of plant hormone application for the individual crossed floral buds. This study revealed the presence of significant difference among the different time of artificial hybridization along with different treatment combination. During the *summer* season, simultaneous emasculation and pollination in the morning yield significantly higher hybrid pod setting per cent of 41.27; compared with emasculation in the evening followed by pollination in the upcoming day morning resulted in only 32.58 per cent hybrid pod setting. For both the methods of artificial hybridization, plant hormonal treatment using a fine mist spray bottle containing a combination of GA<sub>3</sub>@80mg/L + Kinetin@ 10mg/L and fine mist spray bottle containing water had resulted in 40 per cent higher hybrid pod setting than the control treatment. Hence, through present investigation, we concluded that during *summer* season either using simultaneous emasculation followed by pollination give better hybrid pod setting without any hormonal treatment nor using a combination of plant hormones GA<sub>3</sub> and Kinetin sprayed through fine mist hand bottle spray on the crossed florets will result in higher crossing success under both the methods of artificial hybridization.