

## Application of Gibberellic Acid on Diploid and Tetraploid Cotton Hybridization

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Gibberellic acid growth regulator was used to develop interspecific hybrids between tetraploid and diploid species to increase the genetic variability in cotton. In order to retain bolls and seed set in triploid hybrids, emasculated flowers of two *Gossypium hirsutum* commercial varieties (Sahel and Sephid) were pollinated with pollen of Hashem Abad and Kashmer diploid plants (*G. arboreum*). Pollinated flowers were treated with different concentration of gibberellic acid growth regulator hormone to overcome flower abscission. There was a significant difference between hormone concentration and crosses for boll development at  $P = 0.05$  using Chi-square test. Highly significant differences were observed between control (without hormone treatment) and hormone growth regulator for hybrid boll set. Maximum boll set (92%) was observed in Siokra  $\times$  Hashem Abad when treated with  $100 \text{ mg} \cdot \text{kg}^{-1}$  GA3 after 70-80 DAP (days after pollination), while only 2.5% of pollinated flowers led to boll set without hormone growth regulators treatment (control). The number of seeds per boll varied between 0 and 1. The seeds were not as well developed as those from either parent. The hybrid plants showed morphology intermediate between the two parents for several traits.

**Key words:** *G. hirsutum*; *G. arboreum*; genetic variability