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**RESEARCH ARTICLE :**

# Phenology, plant height and dry matter production plant$^{-1}$of Bt and non-Bt cotton (*Gossypium hirsutum* L.) cultivars at different stages as influenced by different plant densities and nitrogen levels

**T. NAGENDER, D. RAJI REDDY, G. SREENIVAS, P. LEELA RANI, K. SUREKHA, AKHILESH GUPTA, P. D. SREEKANTH, CH. PALLAVI AND N. MAHESH**

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Bt cotton, Nitrogen, Leaf area index, Phenology, Main stem nodes, Sympodia, Seed cotton yield, Plant density

**SUMMARY :** A field experiment was conducted during 2015-16 and 2016-17 at Agricultural Research Institute, Rajendranagar,Hyderabad to assess the performance of two cotton cultivars Bt (MRC 7201 BGII) and non-Bt (WGCV-48) in response to plant densities ($P_1$: 18,518 plants ha$^{-1}$, $P_2$: 55,555 plants ha$^{-1}$ and $P_3$:1,48,148 plants ha$^{-1}$) and nitrogen fertilization (120, 150 and 180 kg N ha$^{-1}$). The results revealed that, during 2015 and 2016, among the two cultivars ($V_1$: MRC 7201 BG II, $V_2$: WGCV-48), MRC 7201 BG II cultivar showed higher plant height, crop dry matter plant$^{-1}$, leaf area index,number of main stem nodes plant$^{-1}$, number of sympodial branches plant$^{-1}$over $V_2$: WGCV-48 cultivar in all growth stages. Among the plant densities, even though the plant density of $P_1$: 18,518 plants ha$^{-1}$showed more crop dry matter plant$^{-1}$,number of main stem nodes plant$^{-1}$,number of sympodial branches plant$^{-1}$ in all growth stages, but the plant density of $P_2$: 55,555 plants ha$^{-1}$significantly more kapas yield (3319, 2726 kg ha$^{-1}$ with more number of bolls m$^{-2}$ (131, 116 ). However, remaining two plant densities $P_1$: 18518 plants ha$^{-1}$ and $P_3$:1,48,148 plants ha$^{-1}$ were showed comparable yields. Regarding nitrogen levels ($N_1$: 120 kg ha$^{-1}$, $N_2$: 150 kg ha$^{-1}$ and $N_3$: 180 kg ha$^{-1}$) did not show any significant effect on growth and yield components in any stage of crop growth.

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**Author for correspondence :**
**T. NAGENDER**
Department of Agronomy, Professor JayashankarTelangana State Agricultural University, Rajendranagar, HYDERABAD (TELANGANA) INDIA
Email : nagender.0753@gmail.com

See end of the article for authors' affiliations