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## Effect of staggered sowings on crop growth, flowering parameters and seed yield on sorghum hybrid cv. SHD-9704

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**ABSTRACT :** The present investigation was undertaken during 2007 and 2008 at the Main Agricultural Research Station, University of Agricultural Sciences, Dharwad during *Rabi* season in 2007 and *Kharif* season in 2008 and their pooled data on effect of staggered sowings on crop growth, flowering parameters and seed yield on sorghum hybrid cv. SHD-9704. Among the four date of staggered sowing, the female parent sown 10 days before male parent ( $S_3$ ) recorded numerically more plant height (109.83 cm) at harvest, leaf number (9.61), leaf area (3157 cm<sup>2</sup>), leaf area index (4.67) at 75 DAS as against simultaneous sowing of female and male parent ( $S_0$ ) (98.33 cm, 9.14 and 2874 cm<sup>2</sup> and 4.25) except for days to crop maturity which was relatively more (94.25 days) in simultaneous sowing of female and male parent ( $S_0$ ) over in sowing female parent 10 days before male parent ( $S_3$ ) (90.52 days). The sowing of female and male parent simultaneously ( $S_0$ ) took numerically more number of days for days to primordial initiation (38.17 days) and 50 per cent flowering (69.67 days) but it was less (35.28 and 66.33 days) in sowing of female parent 10 days before male parent ( $S_3$ ). The harvest index, ear length, ear width, ear weight, number of seeds per ear, seed setting percentage, seed weight per ear and hybrid seed yield per hectare recorded significantly maximum (0.176, 25.89 cm, 4.04 cm, 32.88 g, 429.74, 37.85%, 14.43 g and 7.65 q/ha, respectively) in sowing of female parent 4 days before male parent ( $S_1$ ) and minimum in sowing of female parent 10 days before male parent ( $S_3$ ) (0.052, 21.06 cm, 3.25 cm, 18.42 g, 129.03, 11.14%, 4.48 g and 1.36 q/ha, respectively).

**Key Words :** Sorghum, Staggered sowing, Growth, Flowering parameter, Seed yield

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Sorghum [*Sorghum bicolor* (L.) Moench] commonly known as 'jowar', is the fifth most important cereal crop in the world next to wheat, rice, maize and barley. It is a staple food crop for more than 300 million people of Asia and Africa continents. India has the largest share (32.50%) of world sorghum area and ranks second in production after USA. In India, it is cultivated on about 7.93 million hectare area with annual production of 7.78 million tonnes and productivity of 981 kg per ha (Anonymous, 2008). The major sorghum growing states in India are Maharashtra, Karnataka, Andhra Pradesh, Madhya Pradesh, Rajasthan and Tamilnadu. In India, Karnataka state is one of the important sorghum growing states and stands second in area and production after Maharashtra. In Karnataka, it accounts for 1.38 million hectare area and production of 1.62 million tonnes with average productivity of 1192 kg per ha (Anonymous, 2009). About 50 per cent of people in Karnataka depend on sorghum as a staple food crop

particularly in Northern Karnataka viz., Bijapur, Dharwad, Belgaum, Raichur, Gulbarga, Bellary and Mysore. Nevertheless, hybrid seed production in sorghum is an herculean task in view of its serious problems encountered in the form of non-synchrony in parental flowering (Sastry and Shankar Rao, 1975; Nayeem, 1977). Differential flowering period cause a poor seed set due to insufficient supply of pollens at the time of stigma receptivity in female parent. To achieve proper synchronization of flowering of male and female parents the simple agronomic manipulations like staggered sowing and cultural practices such as application of nitrogen through soil, spraying of urea, gibberellic acid and controlled irrigation are being followed in hybrid seed production programme. In staggered sowing method the male and female parents are sown at different dates depending on the differences in their flowering days to coincide the flowering of male parent with that of female parent. It is being practiced widely by the seed growers to get proper