Performance of High Yielding Varieties of Sesame during Early Kharif in Nellore District of Andhra Pradesh

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Abstract
In the context of optimizing sowing time and varieties for realizing higher productivity notably for sesame, an experiment with varying sowing times and varieties was conducted at Agricultural Research station, Nellore, A.P, India. The experimental findings revealed that crop sown on May II F.N recorded significantly highest seed yield (961 kg/ha.) followed by June sowings. Among the four varieties tested, YLM 66 (Sarada) registered significantly the highest seed yield (856 kg/ha), net returns and B: C ratio, due to significant improvement in yield components.

Keywords: Sesame, sowing time, variety, seed yield.

Introduction
Sesame (Sesamum indicum L.) is the oldest indigenous oilseed crop, with longest history of cultivation in India. Its oil contains an oxidant called sesmol which imparts longer shelf life. Sesame is also rich in phosphorous, iron, magnesium, manganese, zinc, and vitamin B1 (Anilakumar et al., 2010). It is grown primarily in west Godavari, Srikakulam, Vizianagaram, Visakhapatnam, Prakasam, Kadapa and Chittoor districts of A.P. (Directorate of Economics & Statistics, International Journal of Current Microbiology and Applied Sciences (2020). In Andhra Pradesh, it is cultivated in Early Kharif, Kharif and summer seasons with low inputs, and less care and management. As per recent estimate, it is grown in 51,660 ha land in the state with annual production of 17,640 tons and productivity of 323.43 kg/ha (Agriculture statistics, Ministry of Agriculture, Govt. of India, 2020-21). The main reasons for low productivity of sesame are its rainfed cultivation in marginal and sub marginal lands under poor management and input starved conditions. However, improved varieties and agro production technologies capable of increasing the productivity levels of sesame are now developed for different agro ecological situations in the country. The low yield of sesame varieties under delayed sown conditions leads to discourage growers resulting to less total area under sesame cultivation. Although genetic potentiality of varieties is important for improved yield and quality of sesame, but sowing time influences the growth and production to a great extent. Sharma (2005) reported 69 and 39% variation in seed yield of sesame due to differences in temperature and variety, respectively. Thus, present-day research on Sesame should emphasize on optimization of sowing time along with selection of suitable varieties for desirable production in a particular region.

Materials and Methods
A field experiment was conducted at Agricultural Research Station, Nellore, Acharya N.G. Ranga Agricultural University, Andhra Pradesh, India (14°27' N latitude, 79°59' E longitude and 20 m above mean sea level) to study the performance of sesame varieties under varied sowing times during Early kharif season of 2020. The experiment was laid out in a split-plot design, which consisted of 3 sowing times i.e., D1: May II F.N, D2: June I F.N, D3: July II F.N, and four varieties of sesame as sub plots i.e., V1: Madhavi, V2: YLM 11, V3: YLM 17 and V4: YLM 66 and replicated thrice. The soil was well drained, sandy clay loam, with 8.1 pH, low in organic carbon (0.51%). Low available N (203 kg/ha), Medium in available P2O5 (41 kg/ha ) and Medium in available K2O (286 kg/ha). Seeds of sesame varieties were sown in furrows at 30 cmx15cm spacing in 4.5 m × 3.8 m plots and thinning was done at 15 days after sowing (DAS) to maintain optimum population. A uniform fertilizer does of 40:20:20 kg/ha of N: P2O5: K2O including N in 2 splits was applied to all the experimental units. Sesame as an Earlykharif crop was grown under ID situation. The growth attributes like, plant height, yield components and seed yield were recorded. The data were analysed through SPSS statistics.

Results and Discussion
Effect of time of sowing on yield attributes and yield of sesame: Significantly highest plant height (152 cm) was recorded when sesame was sown during May II F.N followed by June sowings. There was no significant difference in no. of branches produced plant-1 when sowing was done from May II F.N to June II F.N. Significantly highest no.of capsules plant-1(84.2), No. of seeds capsules-1(62) were recorded with May II F.N.
sowing. Significantly the highest seed yield of 961 kg/ha was recorded when sesame was sown during May II F.N sowing followed by June I F.N (758 kg/ha) and June II F.N (561 kg/ha). The lowest seed yield was obtained with June II F.N sowing. No significant difference was found in 1000 seed weight. May II F.N sowing recorded highest gross returns (Rs 86, 490/- ha⁻¹), net returns (Rs 56,490/- ha⁻¹) and B: C ratio of 2.88 followed by June I and June II F.N sowings. Muhammad Aftab et al., 2020 also reported similar findings

### Yield attributes and yield of sesame as influenced by varieties

Among the four varieties tested, significantly highest plant height (153 cm) was recorded with YLM 66 (Sarada) followed by YLM 17, 11 and the lowest plant height was recorded with Madhavi variety. Highest number of branches plant⁻¹ was recorded with YLM 17 and Madhavi which were in turn on par with each other. Significantly highest no. of seeds capsule⁻¹ (58) were observed in YLM 66 and Madhavi (55) which were in turn on par with each other. Highest test weight was observed in YLM17 followed by YLM 66 and YLM 11. Significantly highest seed yield was observed with YLM 66 (856 kg/ha) and Madhavi (808 kg/ha) which were in turn on par with each other. Highest gross returns (Rs. 77, 040/- ha⁻¹), net returns (Rs47, 040/- ha⁻¹), and Benefit cost ratio (2.57) was recorded with YLM 66 (Sarada) followed by Madhavi, YLM 17 and YLM 11. The lowest grossreturns, net returns and B: C ratio was recorded with YLM11. Similar results were obtained by Govardhan Rao and Venkata Ramana (2017) and Sabitha (2020).

### Conclusions

Thus it could be concluded that sesame can be sown during May II fortnight for getting highest seed yield, net returns and benefit cost ratio while YLM 66 (Sarada) is preferred as suitable variety for sowing during Early Kharif season in Nellore district of A.P., India.

### References