

RESEARCH ARTICLE

Screening of sesame (*Sesamum indicum* L.) genotypes for yield components under AICRP testing

■ N. Sabitha, K. Navya Jyothi and P. Rajasekhar

SUMMARY

Higher variability for plant height, capsules/plant and seed yield/plant and medium variability for days to 50 per cent flowering and days to maturity was recorded. The variability was low for capsule length among the genotypes. The high yield genotypes viz., GT 4, YLM 66, RMT 377, SI-199-2-84 were also found superior for number of capsules/plant and capsule length while JTS-8 with higher seed yield recorded more number of capsules/plant. DS 45 was found to be early in flowering and maturity.

Key Words : Sesame genotypes, Maturity, Capsules, Seed yield

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Sesame is an important edible oilseed crop after groundnut, rapeseed and mustard, sunflower and soybean in the country. Sesame is grown in an area of 40 thousand hectares second position in the area among oilseed crops in Andhra Pradesh. It is primarily a *Kharif* crop grown under rainfed conditions and light soils. Moisture stress among the abiotic and phyllo-

among the biotic factors are the major constraints of sesame production in the state. Knowledge on genetic variation and identification of genotypes with desirable attributes are important so as to bring improvement in sesame yields in the state. The present investigation was carried out with an objective of identifying trait and location specific potential sesame genotypes for use in crop improvement.

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MATERIAL AND METHODS

Twenty sesame germplasm accessions of diverse origin were evaluated under AICRP on sesame programme in a non-replicated trial during *Kharif*, 2018 at the Regional Agricultural Research Station. Each genotype was raised in two rows of five meters length

adopting 30 cm between rows and 10 cm within the row. A fertilizer dose of 40:20:20 kg NPK/ha was applied as basal at sowing. Weeding and plant protection measures were taken up as per the recommendations for southern zone of Andhra Pradesh. Data were collected on days to 50 per cent flowering, days to maturity, plant height (cm), number of capsules/plants, capsule length (cm) and seed yield per plant (g) on five randomly selected sample plants.

RESULTS AND DISCUSSION

Mean data for the characters studied are presented

in Table 1 and promising accessions for each character in Table 2.

Days to 50 per cent flowering among accessions varied from 37 (DS-45, YLM 66) to 45 (DS-28) with a mean of 39.6 days. Accessions viz., DS 45, JTS 8, RMT 504, YLM66, RMT 496, MT 07-1 were found early in flowering compared to other accessions studied in the trial.

Days to maturity ranged from 80 (DS -45) to 92 (YLM 66) with a mean value of 85.3 days. The genotypes DS 45, GT 4, RMT 504, MT-05-04 and DS-54 matured

Table 1: Mean data for seed yield and yield components of sesame germplasm accessions

Sr. No.	Genotype (s)	Plant height (cm)	Days to flowering	Days to maturity	No.of capsules/ plant	Capsule length (cm)	Seed yield / plant (g)
1.	GT- 4	74.6	41	84	36	2.50	20.2
2.	JTS -8	85.8	38	86	36	2.42	16.2
3.	RMT- 504	86.6	38	84	35	2.45	14.4
4.	RMT 430	84.0	39	86	35	2.60	14.0
5.	SI 199-2-84	85.0	41	87	42	2.50	13.5
6.	RMT 377	86.8	42	85	40	2.50	13.4
7.	RMT 496	85.2	38	87	35	2.68	12.8
8.	RMT 485	78.4	39	85	34	2.50	5.50
9.	MT-05-04	87.2	44	83	27	2.30	5.40
10.	AT 375	70.8	40	85	32	2.20	4.60
11.	SI 7650	72.3	44	88	20	2.60	4.30
12.	RMT -498	95.6	39	86	36	2.60	4.10
13.	DS 28	105.0	45	89	36	2.54	3.24
14.	DS 54	86.6	40	84	42	2.35	3.22
15.	DS 56	109.6	40	85	34	2.33	3.15
16.	DS 45	113.8	37	80	34	2.35	2.90
17.	MT-07-1	68.4	38	87	41	2.40	2.80
18.	DS -35	115.4	40	87	33	2.40	2.64
19.	DS 51	96.2	39	88	32	2.30	2.47
20.	YLM 66	86.4	37	92	62	2.80	12.60
	General mean	89.7	39.6	85.3	35.3	2.40	8.46

Table 2: Variability for yield components and seed yield of sesame

Sr. No.	Character (s)	Range		Mean	Promising genotypes
		Min.	Max.		
1.	Days to 50% flowering	37	45	39.6	DS-45, JTS 8, RMT 504, YLM 66, RMT 496, MT-07-1
2.	Days to maturity	80	92	85.3	DS 45, GT 4, RMT 504, MT 05-04, DS-54
3.	Plant height (cm)	68.4	115.4	89.7	DS-35, RMT 498, DS 28, DS 56, DS-45, DS-56
4.	Capsules / plant	20	62	35.3	YLM 66, SI 199-2-84, RMT 377, DS-54, MT 07-01, GT 4, JTS 8
5.	Capsule length (cm)	2.2	2.8	2.40	YLM 66, RMT 430, GT 4, DS-28, SI 7650, RMT 496, RMT 498, SI 199-2-84, RMT 377
6.	Seed yield/ plant (g)	2.47	20.2	8.46	GT 4, JTS 8, RMT 504, 430, SI 199-2-84, RMT 377, RMT 496, YLM66

earlier than other accessions studied.

Among the accessions, plant height varied from 68.4 (MT 07-1) to 115.4 (DS-35) with mean value of 89.7 cm. The accessions *viz.*, DS 45, DS 35, DS 56, DS 28, DS 56, RMT 498 and JTS 8 have recorded higher plant height compared to others in the trial. Number of capsules/plants ranged from 20 (SI 7650) to 62 (YLM 66) with a mean value of 35.5. Among the accessions SI 199-2-84, MT 07-01, RMT 377, DS-54, GT 4, YLM 66 have recorded more number of capsules/plant over general mean and compared to other genotypes studied in the trial.

Among the genotypes capsule length varied from 2.2 (AT 375) to 2.8 (YLM 66) with a general mean of 2.40 cm. The genotypes *viz.*, YLM66, DS-28, SI 7650, SI 199-2-84, RMT 377, RMT 430, GT 4, RMT 496, RMT 498 registered higher capsule length compared to other genotypes.

Seed yield/ plant ranged from 2.47 g (DS-51) to 20.2 g (GT4) with a mean seed yield/ plant of 8.46g. Among the genotypes GT 4, JTS 8, RMT 504, RMT430, ST 199-2-84, RMT 377, RMT 496 and YLM 66 were found superior for seed yield.

Higher variability for plant height, number of capsules per plan and seed yield as observed in present study was also reported in sesame by Parameswaraappa *et al.* (2009); Bharathi *et al.* (2014); Shekhawat *et al.* (2013) and Aristya *et al.* (2017). Similarly moderate variability for days to flowering was also observed by Shekhawat *et al.* (2013) and Vanishree and Goudappagoudar Banakar (2013) in sesame and Singh *et al.* (2018).

Conclusion:

Variability for seed yield, capsules/plant and plant

height was high while moderate for days to flowering and maturity. For capsule length, variability was found to be low. Out of 20 accessions for seed yield and yield components GT 4, YLM 66, RMT 377 and SI 199-2-84 were found as high yielding accessions with more number of capsules and capsule length while JTS-8 with high yielding potential recorded higher capsule length. DS 45 accession was found to be early in flowering and maturity.

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