

Original Research Article

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## Performance of Toria (*Brassica campestris* L.) Varieties under Namsai Conditions

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### ABSTRACT

Investigations were conducted to study the performance of different varieties of toria under Namsai conditions of Arunachal Pradesh at the Agricultural Research Farm of Arunachal University of Studies. Six varieties (TS-67, M-27, TS-36, TS-38, TS-46 and Jeuti) were evaluated in replicated randomized block design with four replications during November 2018 to February 2019. Observations recorded on growth and yield parameters indicated significant difference among the varieties. Maximum plant height was observed in TS-36 (108.05 cm) and minimum in M-27 (99.41 cm). Primary branches per plant was maximum in TS-36 (4.14) followed by TS-46 (3.03) and minimum in TS-67 (2.15). Maximum days to 50% flowering were observed in TS-38 (36.10), which was found to be at par with M-27 (37.35), and TS-36 (38.03). It was further observed that the variety TS-67 (42.96) took longest duration for 50% flowering, and it was at par with TS-46 (40.00). Minimum days to taken to days to maturity was recorded in TS-38 (82.13) at par with M-27 (83.28). Maximum crop duration was record in TS -67 (95.61) and was at par with Jeuti (94.55). Considering the growth and yield characters observed, the variety TS-36 (526.25 g plot<sup>-1</sup>) was found promising and can be recommended for Namsai region.

#### Keywords

Toria varieties,  
Seed yield

#### Article Info

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### Introduction

Rapeseed and mustard holds key place among the different oilseed crops of Indian agriculture. Toria (*Brassica campestris* L.) is an important short duration oilseed crop of Arunachal Pradesh cultivated during kharif season after harvest of paddy but the productivity is very poor (520 kg/ha) which is much below the nation at average of 1176

kg/ha (Pati and Mahapatra, 2015). Under these circumstances, a trial was conducted to identify the best toria variety suited for cultivation in Namsai region of Arunachal Pradesh.

### Materials and Methods

Six varieties of toria viz-, TS-67, M-27, TS-36, TS-38, TS-46, and Jeuti were evaluated in

a randomized block design with four replications in Rabi season (Nov 2018 to Feb 2019) at the Agriculture Research Farm of Arunachal University of Studies, Namsai. The crop was sown during 2<sup>nd</sup> week of November 2018 and harvesting was done in 3<sup>rd</sup> week of February 2019. Plot size was 3.6 sq m. Three numbers of irrigation were given during seeding, flower initiation and siliquae development stages. Observations on growth and yield parameters were recorded at 90 days after sowing and on harvesting of the crop. The results were analysed using standard statistical procedures of ANOVA.

### Results and Discussion

Data recorded were analysed and the results are furnished in table 1. It is seen that the

varieties varied significantly for all the growth and yield parameters studied. The variety TS-36 had the tallest plants (108.05 cm) and maximum number of primary branches plant<sup>-1</sup> (4.14). The earliest variety for 50% flowering (36.10 days) with shortest duration to crop maturity was TS-38 (82.13 days) as compared to other treatments.

Analysis of the data indicated that TS-36 recorded the maximum yield attributing characters like numbers of siliquae plant<sup>-1</sup> (304.55), number of seeds per siliqua<sup>-1</sup> (19.30) and seed yield plant<sup>-1</sup> (17.17 g). Maximum 1000 seed weight (5.41 g) was recorded in variety TS-46. Similar varietal variations were reported by Munda *et al.*, (2011), and Kumari *et al.*, (2012) also.

**Table.1** Mean growth and yield parameters of toria varieties

Varieties	Plant height (cm)	Number of primary branches	Days to 50% flowering	Days to maturity	No. of siliquae per plant	No. of seeds per siliqua	1000 seed weight (g)	Seeds yield per plant	Seeds yield per plot	Average seed yield q / ha
TS-67	103.04	2.15	42.96	95.61	241.10	17.88	4.74	14.56	295.50	8.21
M-27	99.41	2.18	37.35	83.28	230.75	15.40	3.56	14.37	405.75	11.27
TS-36	108.05	4.14	38.03	92.53	304.55	19.30	3.94	17.17	526.25	14.62
TS-38	106.09	2.50	36.10	82.13	235.25	17.50	3.34	14.60	431.75	11.10
TS-46	107.01	3.03	40.00	90.25	294.00	18.35	5.41	16.10	433.25	12.34
Jeuti	101.53	2.26	39.59	94.55	124.55	14.35	5.38	14.25	360.75	10.21
CD (P=0.05)	0.5	0.45	2.09	0.50	1.43	0.28	0.27	0.10	0.34	0.50
S.EM±	0.24	0.15	0.69	0.60	0.48	0.32	0.09	0.6	0.11	0.60

The variety TS-36 produced the maximum seed yield of (526.25 g plot<sup>-1</sup>) which is 23.8 % higher than that of TS -67 (295.50g plot<sup>-1</sup>). Varieties TS- 36 was characterized by higher number of siliquae per plant and seeds per siliqua. The investigations revealed that the variety TS-36 produced the highest yield (526.25 g). Varieties TS- 46 (433.25 g), TS-38 (431.75 g), M-27 (405.75 g) were at par with each other. Jeuti (360.75 g), and TS-67 (295.50) had comparatively low yield. These

varieties showed that higher number of siliquae per plant and number of seeds per siliqua. Growth parameters showed that these varieties were dwarf and semi-dwarf in plant height with comparatively higher number of branches per plant. The studies with seed yield verses yield attributing characters also indicating similar trend. These results are in agreement with Adak *et al.*, (2011) and Patel (2013).

In conclusion the investigations revealed that the variety TS-36 produced the highest yield (526.25 g) and is found suited for Namsai conditions. In general, varieties TS-36, TS-46, RS-38 were also found to be promising.

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