

PERFORMANCE OF BARI TILL-4 (SESAME) IN THE CHAR LAND OF BOGURA

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ABSTRACT

The production program were conducted at Debdhunga char, Sariakandi & Boisaki char, Dhunut, Bogura under On Farm Research Division, BARI, Bogura during Kharif, 2017-18 to popularize BARI Till-4 among the farmers. The unit plot size was 1.0 Bigha. The crop was fertilized with recommended doses at the rate of 58-30-25-17-1.80-1.70, N-P-K-S-Zn-B kg ha⁻¹, respectively in both locations. Half urea and all other fertilizers were applied during final land preparation. Remaining urea was applied at 25-30 days after sowing. Seeds were sown on 7 March, 2017 in Debdhunga, Bogura and 8 March 2017 in Boisaki, Dhunut. The seeds were sown by broadcasting method in both sites. Tilt was sprayed to control fungal disease. The crop was harvested at 8 June, 2017 in Debdhunga, Sariakandi and 10 June 2017 in Boisaki. Dhunut, Bogura. The gross economic return was calculated on the basis of prevailing market price of the commodities. The satisfactory seed yield and attractive gross margin were found from both locations in char land of Bogura.

Key words: Performance, BARI Till-4, Char land.

Introduction

Till (*Sesamum indicum*) is an important oil crop in Bangladesh. In terms of acreage, it is next to mustard. In Bangladesh, 38,866 hectares of land (BBS, 2015) are cultivated under sesame with a production of 25,000 metric tons with yield of 640 kg/ha (BBS, 2015). It can be cultivated both in Kharif and Rabi seasons. The main regions are greater Faridpur, Barishail, Rangamati, Dinajpur, Pabna, Khulna, Dhaka, Mymensingh, and Comilla. Till also called benne, erect annual plant of the family Pedaliaceae, grown since antiquity for its seeds, which are used as food and flavouring and from which a prized oil is extracted. Widely cultivated, the sesame plant is found in most of the tropical, subtropical, and southern temperate areas of the world. The aroma and taste of sesame seed are mild and nutlike. The chief constituent of the seed is its fixed oil, which usually amounts to about 44 to 60 percent. Noted for its stability, the oil resists oxidative rancidity. The seeds are also high in protein and are rich in thiamin and vitamin B₆. The seed on an average consists of 47 % oil and 20% protein (Rahman, 1976). Sesame as a valuable cover crop grown for food (dry seeds), feed (seed, leaves and young branches), its flowers are useful in treatment of cancer, alopecia, and constipation, roots are having antifungal activity and leaves are used in infant cholera, diarrhea, dysentery, and for urinary infections. Beside of large land covered for cultivation of sesame there is a wide demand–supply gap as its production is constrained by various biotic and abiotic stresses which leads to less productivity in terms of seed yield. So attempts to be made for spreading awareness about sesame its oil and other uses. Sesame oil has natural antioxidants such as sesamin, sesamol, and sesamol known as the most stable vegetable oils having long shelf life. Sesame seed oil, is rich in Omega 6 fatty acids, but lacks Omega 3 fatty acids. So there is need to produce more Omega 3 fatty acids like alpha linolenic acids with the help of various denaturize enzyme pathways for improvement of quality of sesame oil as healthy oil BARI has developed some sesame varieties like BARI Till-4 and their performances at farmer's field are satisfactory. However, this variety was not tested in char area of Bogura. But before suggesting the suitable varieties for char land of Bogura, their agro-economic performances need to be tested in the farmer's field. So, this trial was under taken to evaluate the performance of BARI Till-4 in the farmer's field of Bogura.

Materials and Methods

The production program of BARI Till-4 was conducted in the farmers' field of Debdhunga char, Sariakandi & Boisaki char, Dhunut, Bogura during Kharif season 2017-18. A discussion meeting was arranged for the co-operator farmers. The production was conducted among 5 farmers in both locations. Each farmer was considered as a replication. The unit plot size was 1.0 Bigha. The crop management practices were presented in Tables 1-2. The crop was fertilized with recommended doses @ 58-30-25-17-1.80-1.70, N-P-K-S-Zn-B kg ha⁻¹, respectively in both locations. Half urea and all other fertilizers were applied during final land preparation. Remaining urea was applied at 25-30 days after sowing. Seeds were sown on 7 March, 2017 in Debdhunga, Bogura and 8 March 2017 in Boisaki, Dhunut. The seeds were sown by broadcasting method in both sites. Tilt was sprayed to control fungal disease. The crop was harvested at 8 June, 2017 in Debdhunga, Sariakandi and 10 June 2017 in Boisaki, Dhunut, Bogura. At harvest, 10 randomly selected plants from each plot were carefully uprooted to record plant height (measured from the root-stem junction to the top of the shoot), number of pods/plant, number of seeds/pod, 1000 seed weight and seed yield. The yield per plot was recorded and converted into yield per hectare. Collected data were analyzed statistically by using MSTAT software packages and mean differences for each character were compared by Least Significant Differences (LSD) test (Gomez and Gomez, 1984). The gross economic return was calculated on the basis of prevailing market price of the commodities.

Table 1. Crop management practices used in BARI Till-4 at Debdhunga char, Sariakandi, Bogura during 2017-18

Crop	No. of farmers	Area (Decimal)	Date of sowing	Fertilizer used	Date of harvest
Sesame	5	165	7 March, 2017	58-30-25-17-1.80-1.70, N-P-K-S-Zn-B kg ha ⁻¹	8 June 2017

Table 2. Crop management practices used in BARI Till-4 at Boisaki char, Dhunut, Bogura during 2017-18

Crop	No. of farmers	Area (Decimal)	Date of sowing	Fertilizer used	Date of harvest
Sesame	5	165	8 March, 2017	58-30-25-17-1.80-1.70, N-P-K-S-Zn-B kg ha ⁻¹	10 June 2017

Results and Discussion

The performance of BARI Till-4 is presented in Tables 3-4. The satisfactory grain yield were 1.35 t/ha in Dehdhunga, Sariakandi and 1.28 t/ha in Boisaki, Dhunut. The attractive gross margin was 71200 Tk/ha in Dehdhunga, Sariakandi and 65510 Tk/ha in Boisaki, Dhunut, Bogura to achieve with improved management practices like weeding, thinning and pest management. Ray Langham (2008) reported that growth and development of sesame is satisfactory yield under mentioned fertilizers. Similar observation was reported by Bedigian, (2003). The highest gross return and gross margin (Tk. 126900 and 100430 ha⁻¹) were recorded in Boisaki site. The lowest gross return and gross margin was found from local variety in both locations, which are also supported by Ahgayarkanni and Ravichandran (2001); Duhan and Singhm (2002); Gupta *et al.* (1995); Haq *et al.* (2005).

Table 3. Performance of BARI Till-4 at Debdhungar char, Bogura during 2017-18

Plant height (cm)	Plant m ⁻² (no)	Pods plant ⁻¹ (no)	Seeds pod ⁻¹ (no)	Seed yield (tha ⁻¹)	Stover yield (tha ⁻¹)	Cost of production (Tkha ⁻¹)	Gross return (Tkha ⁻¹)	Gross margin (Tkha ⁻¹)
8.50	8.33	8.25	7.45	8.35	9.14	38940	110140	71200

Market price of Till seed @ Tk. 80 kg⁻¹ Stover @ Tk.1.00 kg⁻¹

Table 4. Performance of BARI Till-4 at Boisaki char, Dhunut, Bogura during 2017-18

Plant height (cm)	Plant m ⁻² (no)	Pods plant ⁻¹ (no)	Seeds pod ⁻¹ (no)	Seed yield (tha ⁻¹)	Stover yield (tha ⁻¹)	Cost of production (Tkha ⁻¹)	Gross return (Tkha ⁻¹)	Gross margin (Tkha ⁻¹)
10.25	6.25	7.50	7.35	9.28	8.05	38940	104450	65510

Market price of Till seed @ Tk. 80 kg⁻¹ Stover @ Tk.1.00 kg⁻¹

Farmers' opinion: Farmer expressed their positive opinion on BARI Til-4 due to its higher yield.

Conclusion

BARI Till-4 gave the attractive yield and economic return in the Char land of Sariakandi and Dhunut, Bogura compared to the local variety.

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