



ANNUAL RESEARCH REPORT 2020-21



Programme Leader
Dr. A K M Khorsheduzzaman
Principal Scientific Officer



Agricultural Research Station

Bangladesh Agricultural Research Institute
Collegepara, Thakurgaon-5100

July 2021

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Edited by

Dr. Md. Mohi Uddin, CSO
Dr. Asish Kumar Roy, CSO (CC) and
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AGRICULTURAL RESEARCH STATION
BARI, Collegepara, Thakurgaon

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Preface

All natural resources including agricultural land, soil fertility and underground water are decreasing remarkably day by day. Therefore, it is a great challenge for agricultural researcher to meet the ever increasing population in achieving food and nutrition security. There is a threat of decreasing crop production due to the effect of climate change such as flood, drought, salinity, waterlog and increasing of diseases and insect infestation. RARS has strengthened its research programme through the development of high yielding varieties and technologies, increasing cropping intensity and productivity through proper utilization of soil and water, ultimate socio-economic development of the farmer. It is necessary to achieve self-sufficiency in cereals, vegetables, fruit, pulse, oilseeds, spices and other crops. It is essential to meet the effect of climate change and safe food production.

BARI, a largest national agricultural research institute, is developing modern varieties and various technologies of 207 crops including horticultural crops (vegetables, fruits and flowers), cereals (wheat, maize etc.), pulses, oilseeds, tuber crops (potato, sweet potato and aroids) and other technologies such as postharvest processing, seed technology, biotechnology etc. Among them HRC is playing a vital role for the development of Horticultural Crops (Vegetables, Fruits and Flower & ornamentals). ARS, Thakurgaon is one of 20 stations under HRC. However, till now, ARS has produced around one ton of vegetables, about 10 tons of cereal (Wheat and maize) seeds every year. The station also collected more than seven germplasm for developing new varieties. There is an only MLT-site under this station.

The station performed research, demonstration, training, Field-day and nationally important events related to agriculture through top down approach.

This research report contains the results of seed production from nine varieties of eight summer vegetables, 24 varieties from 13 winter vegetables. I hope this report will benefit researchers, extension personnel, farmers, NGOs and those who are concerned with agricultural development.

I convey my sincere thanks and gratitude to the BARI BADC, DAE, for funding technical assistance and providing human resources development.

I acknowledge with great thanks the contribution of the scientific Assistants of ARS Thakurgaon who conducted seed production, research and technology dissemination & promotional activities with hard work and sincere devotion to complete this report. I also express my gratitude to the other staffs for their assistance in collecting field data along with the scientists and office staffs to complete the research activities successfully.

Dr. A K M. Khorsheduzzaman
Principal Scientific Officer
&
Station In-Charge

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At a Glance

Agricultural Research Station, Thakurgaon

Establishment

This station was established in 1979 under On-Farm Research Division (OFRD) of BARI. The weather condition especially longer winter period for north-western parts of Bangladesh including Thakurgaon district is very much congenial for cultivation various vegetable crops and production of vegetable seeds specially Breeder Seeds. Considering the facts above, Horticulture Research Centre (HRC) of BARI has decided to start breeder seed production of BARI released vegetable and other crop varieties and conducting researches on various aspects of advance yield trials (AYT) and regional yield trials (RYT) of BARI mandated crops. Presently, the station is headed by a Principal Scientific Officer along with no scientists of any discipline.

Location and extent

Agricultural Research Station (ARS), Thakurgaon is an important Research Sub-Station of Bangladesh Agricultural Research Institute (BARI) situated in the North-western part of Bangladesh. This station is located at Collegepara under Sadar Upazilla of Thakurgaon district. Total land area of this sub-station is about 10 hectares. The station is geographically located at 25°40'-26°10'N latitude and 88°05'-88°36' longitude. The elevation of this area was approximately 53.33m from average sea level. Soil of this area is sandy-loam, well-drained medium high land with proper irrigation system and belongs to the Old Himalayan Piedmont Plain (AEZ-1) (FAO, 1998).

Land area

- (i) Total area : 10 ha
- (ii) Research and seed multiplication area : 8.75 ha
- (iii) Infrastructure area
 - (a) Office area : 0.42 ha
 - (b) Residential area : 0.55 ha
 - (c) Internal roads : 0.28 ha

Climate

Monthly average maximum and minimum temperature, relative humidity and rainfall during May 2020 to April 2021 at ARS, Thakurgaon.

Months	Temperature (°C)		Humidity (%)		Average rainfall (mm)
	Max.	Min.	9:00 AM	4:00 PM	
May/2020	30.49	26.89	78.77	69.38	7.06
June/2020	30.31	28.41	81.90	74.26	23.52
July/2020	29.62	28.33	83.58	79.87	20.46
August/2020	32.03	29.60	79.55	71.91	10.16
September/2020	29.89	28.02	85.37	80.20	13.44
October/2020	31.74	28.70	76.23	67.10	0.54
November/2020	30.92	24.61	73.07	49.97	0.00
December/2020	22.68	23.63	78.90	59.35	0.00
January/2021	20.64	15.69	83.77	69.93	0.00
February/2021	24.61	18.31	74.96	82.78	0.00
March/2021	31.30	25.31	56.54	80.06	0.00
April/2021	33.58	27.34	66.00	39.30	1.92

(Source: Meteorological Unit, ARS, Thakurgaon)

Scientific Personnel, Scientific & Office Staffs and Laborers

Sl. No.	Name	Designation	Remarks
A.Scientific Personnel			
1.	Dr. A K M Khorsheduzzaman	Principal Scientific Officer	Station in-Charge
B.Scientific Staff			
1	Mr. Moklesar Rahman	Scientific Assistant	MLT Site
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3	Md. Jahangir Alam	Scientific Assistant	
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5	Mr. Ashis Kumer Roy	Scientific Assistant	
6	Md. Tota Mia Mondal	Scientific Assistant	
7	Mr. Sanjit Kumar Barman	Scientific Assistant	
C.Office Staff			
1	Mrs. Fazilatun Nessa	Head Assistant	
2	Md. Amiz Uddin	LDA cum com. operator	
3	Md. Abu Musa	Office Assistant cum computer operator	
4	Md. Ranju Hossain	Tractor Driver/ Driver	
5	Md. Liton	Laboratory Attendant	
6	Abdullah Al-Mamoon	Office Shohaok	
7	Md. Shoriful Alam	Security Gourd	
D.Laborers			
1	Laborers	Regular	19
2	Laborers	Irregular	01
3	Laborers	Seasonal (Office+Field)	16

Agricultural Research Station

Bangladesh Agricultural Research Institute

Collegepara, Thakurgaon 5100

Breeder Seed Production of Vegetable Crops

As a part of National Seed Board and Seed Production Program under the Ministry of Agriculture (MoA), Bangladesh Agricultural Research Institute (BARI) is responsible for production of Breeder Seed of her mandated crops and popular released vegetable varieties. Indeed, Agricultural Research Sub-station (ARS), Thakurgaon is playing an important role in this regards, as a most suitable and potential breeder seed production centre for vegetables among 19 other seed production stations under HRC of BARI. According to the proposed annual research program approved for summer 2020, winter 2020-21 and summer 2021, the following breeder seed production programs were scheduled and or be executed.

Cropping Season summer 2020

In summer 2020 cropping season, a total of 344.00kg breeder seed has produced against 251.00kg target. There were nine varieties included from eight different vegetable crops in the proposed research program. The crops and varieties proposed for breeder seed production were Kankong (BARI Gimakalmi 1), Okra (BARI Dherosh 2), amaranth (BARI Danta 1), bitter gourd (BARI korola 3), ridge gourd (BARI jhinga 2), yard long bean (BARI borboti 1), snake gourd (BARI chichinga 1) and Indian spinach (BARI Puisak 1 & 2). Seed production target for BARI mandated crops and varieties were achieved out amounted with few exceptions. However, breeder seed production so far achieved has furnished in Table 1.

Table 1. Breeder seed production of BARI released vegetable crop during Summer 2020 cropping season.

Sl. no.	Crops	Varieties	Seed production (in kg)		Germination (%)
			target	achieved	
1.	Kankong	BARI GimaKolmi 1	50.00	80.00	
2.	Okra	BARI Dherosh 2	100.00	130.00	
3.	Amaranth	BARI Danta 1 (Laboni)	50.00	60.00	
4.	Bitter gourd	BARI Karola 3	5.00	3.00	
5.	Ridge gourd	BARI Jhinga 2	3.00	12.00	
6.	Yard long bean	BARI Barboti 1	20.00	22.00	
7.	Snake gourd	BARI Chichinga 1	3.00	17.00	
8.	Indian Spinach	BARI Puisak 1	10.00	20.00	
		BARI Puisak 2	10.00	-	
Total	Crop=8	Variety=9	251.00	344.00	-

Cropping season winter 2020-21

Breeder seed production for vegetables during rabi 2020-21 cropping season has started as per schedule with a target of about 499.00 kg. But breeder seed was produced amounting 878.05kg against target. However, exactly 24 varieties under 13 different vegetable crops were included in winter 2020-21 cropping season. Majority of the cases amount of breeder seed so far produced was out amounted over target with few exceptions, which has furnished in table 2.

Table 2: Breeder seed production of BARI released vegetable crops during winter 2020-21 cropping season.

SL. No.	Crops	Variety (s)	Production target (kg)	Production (kg)		Germination (%)
				Grade-A	Grade-B	
1.	Eggplant	BARI Begun 6	3.00	4.50	-	-
		BARI Begun 8	3.00	5.00	-	
		BARI Begun 12	4.00	0.95	-	
2.	Tomato	BARI Tomato 2	5.00	5.50	-	-
		BARI Tomato 14	5.00	7.00	-	
		BARI Tomato 15	5.00	4.00	-	
		BARI Tomato 16	5.00	5.50	-	
		BARI Tomato 17	3.00	3.50	-	
		BARI Tomato 18	3.00	3.20	-	
		BARI Tomato 19	3.00	4.00	-	
		BARI Tomato 20	3.00	4.50	-	
3.	Country bean	BARI Sheem 1	20.00	30.00		-
		BARI Sheem 6	10.00	12.00		
		BARI Sheem 7	15.00	25.00	-	
4.	Garden pea	BARI Motorsuti 3 (Aguri)	200.00	400.00		-
5.	Cauliflower	BARI Fulcopi 1 (Rupa)	1.00	6.00		-
6.	Radish	BARI Mula 1 (Tasakisan)	60.00	65.00		-
7.	Spinach	BARI Palansak 1	10.00	90.0		-
8.	Bottle gourd	BARI Lau 4	50.00	45.00		-
9.	Pumpkin	BARI Mistikumra 2	5.00	1.70		-
10.	Red amaranth	BARI Lalsak 1	80.00	150.00		-
11.	Capsicum	BARI Mistimorich 2	1.00	0.70		-
12.	Batisak	BARI Batisak 1	2.00	5.00		-
13.	Squash	BARI Squash 1	3.00	-		
	Crops= 13	Var.= 24	499.00	878.05		-

Cropping season summer 2021

Breeder seed production for the on-going summer 2021 cropping season started timely. In this season a total of eight varieties from eight different crops were scheduled in the research program with a target of 251.00 kg breeder seed. Seed production programs of the selected crops and or varieties are going-on smoothly. All of these are in vegetative stages. Necessary management and intercultural activities are going on accordingly. Due to heavy rain and storm during 2nd week of May, few of the crops were under trouble. However, the crops, varieties and target seed production scheduled for summer 2021 cropping season are furnished in table 3.

Table 3. Breeder seed production of BARI released vegetable crop during summer 2021 cropping season.

Sl. no.	Crops	Varieties	Seed production (in kg)		Germination (%)
			target	achieved	
1.	Kankong	BARI GimaKolmi 1	50.00		
2.	Okra	BARI Dherosh 2	100.00		
3.	Amaranth	BARI Danta 1 (Laboni)	50.00		
4.	Bitter gourd	BARI Karola 3	5.00		
5.	Ridge gourd	BARI Jhinga 2	3.00		
6.	Yard long bean	BARI Barboti 1	20.00		
7.	Snake gourd	BARI Chichinga 1	3.00		
8.	Indian spinach	BARI puisak 2	10.00		
Total	Crop=8	Variety= 8	251.00		

Seed Production of Other Crops

Cropping season summer 2020-21

Seed production other than vegetable crops was also done by ARS, Thakurgaon. As this sub-station are one of the best seed production centre among others and a valued contact grower of Bangladesh Wheat and Maize Research Institute (BWMRI), Dinajpur and BADC, Thakurgaon. The crops and varieties included for seed production were wheat (BARI Gom 33) (TLS), BINAdhan 7, and maize (Advanced line 79), Termaric (BARI Holud-3) and Tarro (BARI Mukhikochu-2). However, during last cropping season, seeds so far produced according to harvest register in this sub-station has presented in Table 4.

Table 4: Seed production of BARI and BINA released varieties of different crops during 2020-21 cropping season.

Sl. no.	Crops	Varieties	Production (in kg)	Remarks
1.	Wheat	BARI Gom 33 (TLS)	3,250.00	To be distribute among farmers
2.	Rice	BINAdhan 7 (TLS)	2,650.00	To be distribute among farmers
3.	Maize	Advanced line 79	1,250.00	As maintenance breeding for PBD, BARI
4.	Turmeric	BARI Holud-3 & 5	500.00	To be distribute among farmers
5.	Tarro	BARI Mukhikochu-2	250.00	To be distribute among farmers
Total	5	5	7,900.00	-

BARI Technology Village (BTV), Munshirhat, Thakurgaon

BARI Technology Village (BTV), Munshirhat Thakurgaon is situated under sadar Upazilla of Thakurgaon district. It is on the eastern-side of Thakurgaon-Panchagor high way and 24km away from BARI Sub-station Thakurgaon. Soil of this area is sandy loam, well-drained, medium high land with proper irrigation system and belongs to the Old Himalayan Piedmont Plain (AEZ-1) (FAO, 1998). BTV was established in 2009-10. Research work started on BARI released different crops at farmers' field from November, 2009. The aim of BTV program is to popularize BARI mandated different crop varieties and technologies developed by BARI among the farmers. Besides these, BTV also sets crop museum and demonstration trials with promising newly developed varieties in an aggregated form among the farmers of this locality.

A.1. Establishment of Crop Museum

A crop museum was set up with 11 varieties from 9 crops, which were brinjal, radish, red amaranth, spinach, tomato, cauliflower, broccoli, garden pea and bush bean at BARI Technology Village, Munshirhat, Thakurgaon during the rabi 2020-20 cropping season. The performance of different crops grown under crop museum is presented in Table 5.

Table 5. Yield performance of different crops grown under Crop Museum at Munshirhat, Thakurgaon during 2020-21 cropping season

SL. No.	Crops	Varieties	Date of sowing	Yield (t/ha)	Remarks
1.	Brinjal	BARI begun-7	30-12-2020	35.55	Good & tasty
		BARI begun-8		42.75	High yielding & tasty but no local demand
		BARI begun-9		39.47	Good but less preferred
2.	Radish	BARI mula-1	1-12-2020	87.50	Excellent & tasty
3.	Red amaranth	BARI Lalshak-1		16.55	Quick growing, soft & Tasty
4.	Spinach	BARI Palansak-1		33.75	Rapid growth & tasty
5.	Tomato	BARI tomato-15	10-12-2020	88.25	High yielding & hard
		BARI tomato-16		82.00	High yielding & hard
		BARI tomato-17		79.25	Larger sized
		BARI tomato-18		87.00	High yielding
		BARI tomato-19		90.65	High yielding & shelf-life
6.	Bottle gourd	BARI Lau-4	20-10-2020	45.52	Good & year-round
7.	Garden pea	BARI Motorsuti-1	1-12-2020	10.56	Short duration & high yielding
		BARI Motorsuti-3		9.85	High yielding
8.	Bush bean	BARI Jharshem-1	1-12-2020	9.60	Profuse bearing & new to consumers
9.	Leafy vegetable	Batisak-1	10-12-2020	7.25	Quick growing but less preferred
10.	Broccoli	BARI Broccoli-1		22.15	Popular but new in that locality

A.2. Adaptive trial of BARI released high yielding potato varieties at Shibgonj, Thakurgaon KGF funding project

Adaptive trial of BARI released high yielding potato varieties at Shibgonj, Thakurgaon during 2020-21 cropping season. The objectives of these trials were to demonstrated yield performance of different potato varieties at farmers' field. BARI released high yielding 8-potato varieties viz., BARI alu 36, BARI alu 37, BARI alu 41, BARI alu 47, BARI alu 48, BARI alu 56, BARI alu 62 and BARI alu 63 were selected for demonstration in farmers' field. All the selected potato varieties were supplied among 4-farmers from breeder seed production centre, Debigonj, Panchgar. Data on different pre-selected parameters on potato and farmers' opinions were recorded. From the trials it has revealed that few of the potato varieties under adaptive trials had an ample opportunity to adopt and expand among farmers of that locality in order to increase productivity. The performance of different potato varieties grown under 4-adaptive trials in respect of yield, farmers' reactions and comments by local peoples has presented in Table 6.

Table 6: Trial result of different BARI released potato varieties at Shibgonj, Thakurgaon during 2020-21 cropping season.

Variety	Mean tuber yield (t/ha)*	Farmers' reactions	Comments on the technology
BARI alu 36	20.00	Oblong, red skin color, good market demand	Irrespective of skin color, farmers of this locality desired long /oblong type potato variety. With this view BARI alu 41, BARI alu 48, BARI alu 62 & BARI alu 63 can be adopted among the farmers
BARI alu 37	29.21	Good yielder and demanded just like Diamant	
BARI alu 41	33.83	Round, red skin color, good yielder & market demand, same as local variety, no scab disease	
BARI alu 47	31.75	Long, white skin color, moderate yielder same as Diamant, no market demand	
BARI alu 48	36.30	Round, white same as Granola, no market demand	
BARI alu 56	28.10	Round, light red skin, low yielder, same as local variety, moderate market demand.	
BARI alu 62	33.50	Oblong, yellow skin, high yielder, good market demand.	
BARI alu 63	30.90	Round, red skin, same as local variety, moderate yielder, good market demand.	

*= Yield is the average of 4-farmers/locations

A.3. Effect of sowing dates of different BARI released popular potato varieties on yield and yield potential under KGF funding project.

A field study on sowing dates scheduled for four popular BARI released potato varieties were conducted at farmers' field of Shibgonj, Thakurgaon during 2020-21 cropping season. The objective of that study was to find out the most suitable sowing date for potato in respect potential tuber yield and yield performance under few natural and biotic stressed situations. Popular BARI released potato varieties Viz., Diamant (BARI Alu-7), Asterix (BARI Alu-25), Courage (BARI Alu-29) and BARI Alu-62 were use in that study. Yield potentials, disease and insect damage were recorded in order to partial fulfillment of the objectives. Effect of various planting dates on the above parameters calculated and analyzed and furnished in Table 7.

Table 7: Effect of sowing dates on yield and yield potential of different BARI released popular potato varieties conducted at farmers' field of Shibgonj, Thakurgaon during 2020-21 cropping season.

Variety	Mean tuber yield (ton/ha)				Disease attacked	Insect damage
	20 Oct., 2020	30 Oct., 2020	10 Nov., 2020	20 Nov., 2020		
Diamant (BARI Alu-7)	30.70	30.43	40.53	45.05	Scab	-
Asterix (BARI Alu-25)	25.74	27.06	28.75	30.87	-	-
Courage (BARI Alu-29)	21.45	26.60	27.72	28.00	BW	-
BARI Alu-62	32.32	32.67	36.52	41.00	-	-

A.4. Field screening of potato varieties/lines for processing and export purpose

A screening study with 62-BARI released potato varieties/lines were conducted at farmers' field of Shibgonj, Thakurgaon during 2020-21 cropping season in order to find out varieties/lines suitable for processing and export potentiality. The study was laid out in a randomized complete block design with two replications. Unit plot size for the screening program, it was 1.3mX3.0m with 1.0m block distance. Potatoes were planted by 15 November, 2020 maintaining line distance 65cm and 20cm distance between tuber to tuber. Each variety was planted continuously within two lines of a single plot. Data on various important parameters viz., potato size, dry matter content, eye depth, smoothness of skin, glutamine content, etc. Analysis is ongoing in TCRC, BARI Laboratory.

A.5. RYT of French bean lines

A regional yield trial (RYT) of French bean lines has conducted at the research field of ARS, Thakurgaon in order to select a suitable line to develop/release French bean variety. The study was laid out in a randomized complete block design with three replications. Three French bean lines viz., PV Rai-001, PV Rai-003, PV Rai-004, and BARI Jharsheem-1 as check were used as source materials. The unit plot size was 1.2mX6.0m maintaining 30cmX15cm planting space. Cow-dung, N, P, K, S and micro nutrients were used as recommendation, applied as per program designed. Data on couples of yield and yield contributing characters as parameters were recorded and analyzed and furnished in table 8-10.

Table 8. Yield and yield contributing characters of different French bean lines during 2020-21 cropping season at ARS, Thakurgaon.

Variety/lines	Plant height (cm) at		Mean individual pod			Edible pod Yield(g/plot)
	flowering	harvest	Size (cm)	No. green /plot	Weight (g)	
PV Rai-001	102.40	127.33	73.33/15	346.00	3.66	970.00
PV Rai-003	37.80	29.87	59/9.67	351.33	1.66	653.00
PV Rai-004	54.80	39.13	58/9.67	338.67	2.13	697.30
BARI Jharsheem-1	46.00	39.33	58/10.67	265.00	1.86	9.88

Table 9. Yield and yield contributing characters of different French bean lines during 2020-21 cropping season at ARS, Thakurgaon.

Variety/lines	Mean days to			Pod color at harvest
	50% flowering	1 st harvest	Last harvest	
PV Rai-001	59.00	109.00	128.00	-
PV Rai-003	55.00	105.00	127.00	-
PV Rai-004	48.67	109.00	134.00	-
BARI Jharsheem-1	59.00	110.33	132.00	Light green

Table 10. Yield and yield contributing characters of different French bean lines during 2020-21 cropping season at ARS, Thakurgaon.

Variety/lines	Mean seed			
	size L/W (cm)	weight (100) (g)	yield/plot (kg)	color at harvest
PV Rai-001	14.73/1.05	46.00	716.66	Brown
PV Rai-003	12.2/1.01	26.33	300.00	White
PV Rai-004	11.53/1.01	47.00	366.66	Black
BARI Jharsheem-1	11.53/1.07	37.00	733.33	Mosaic

RYT of bitter gourd hybrids

A regional yield trial (RYT) of bitter gourd hybrids has conducted at the research field of ARS, Thakurgaon in order to compare the most suitable ones. The study was laid out in a randomized complete block design with three replications. Six bitter gourd hybrids lines viz., BARIHyB-34, BARIHyB-35, BARIHyB-36, BARIHyB-37, BARIHyB-39 and Hybrid-Tia as check hybrid. The unit plot size was 1.2mX6.0m maintaining 30cmX15cm planting space. Cow-dung, N, P, K, S and micro nutrients were used as recommendation, applied as per program designed. Data on couples of yield and yield contributing characters as parameters were recorded and analyzed and furnished in table 11-12.

Table 11. Performance of different bitter gourd hybrid lines during 2020-21 cropping season at ARS, Thakurgaon.

Variety/lines	Mean days to			Fruit yield (kg/plant)
	1 st flowering	1 st harvest	Last harvest	
BARIHyB-34	5-5-21	27-6-21	18-7-21	2.30
BARIHyB-35	2-5-21	27-6-21	18-7-21	2.32
BARIHyB-36	4-5-21	24-6-21	22-7-21	2.57
BARIHyB-37	2-5-21	24-6-21	19-7-21	1.80
BARIHyB-39	5-5-21	30-6-21	22-7-21	1.70
Hybrid-Tia	5-5-21	24-6-21	22-7-21	2.53

BARIHyB= BARI Hybrid Bitter gourd;

Table 12. Performance of different bitter gourd hybrid lines during 2020-21 cropping season at ARS, Thakurgaon.

Variety/lines	Mean infestation/infection % by			Fruit yield (t/ha)
	fruit fly	powdery mildew	virus	
BARIHyB-34	15.75	-	-	27.60
BARIHyB-35	14.67	-	-	27.84
BARIHyB-36	11.35	-	-	30.84
BARIHyB-37	14.47	-	-	21.60
BARIHyB-39	21.33	-	-	20.14
Hybrid-Tia	11.49	-	-	30.36

All the hybrids performed well with exception in BARIHyB-36 and Hybrid-Tia those were almost at par to each other. Due to warmer season fruit fly infestation was high with few exceptions in BARIHyB-39. BARI Hybrid Bitter gourd-36 may propose as a hybrid bitter gourd variety.

A.Promotional activities at ARS, Thakurgaon

During 2019-20 and 2020-21 seasons various promotional activities were arranged and done by ARS, Thakurgaon. The objectives of those promotional activities were to inform the up dated achievements of BARI to the farmers, extension personnel, NGOs, scientific staffs, students from various schools, colleges, ex-officials and policy planners of the government. Some of those major activities are furnishing in Table 9.

Table 9. Various promotional activities executed at ARS, Thakurgaon during 2020-21season.

Sl. no.	Type of activities	Topic/Subject	Participants/ beneficiaries	Numbers
1.	Sapling distribution and Plantation (1)	On the ocation of “Mujib Shoto Barshiki” month long Folod Brikkho Ropon up to union level	Various School, and college premises of Thakurgaon district	550
2.	Farmers’ training (4)	-Modern production techniques of vegetable flower & fruit. -Sustainable management of pest & diseases in Spices crops	Farmers	160
3.	Field Day (4)	Productivity of BARI Lau-4, BARI Motorshuti-3, BARI Tomato-19 & 21, BARI Puisak-1	Farmers	400
4.	Visit & Monitoring	Monitoring breeders seed production, Research and project activities	Director (P&E., Training) Project Director hrc.ofrd proj. CSO (Veg)	4
5.	Monitoring & Evaluation	Monitoring & Evaluation of on-going research activities	Taskforce of BARI Research wing for Rangpur Region	3
6.	Visit	Visit for monitoring research activities	PSO (Vegetables) SSO (Vegetables)	3
	Total			1117

