

**TECHNICAL PROGRAMME OF ICAR-Bt COTTON TRIALS  
NORTH ZONE: 2020-21**

**Last date for submission of seeds at CICR, Sirsa: 27/04/2020 before 4.00 PM**

**Issue of coded seeds: 29/04/2020 after 3.00 PM**

**Private R & D (for deregulated Bt event only)** – Please pay the prescribed testing fee (as detailed below) through online in State Bank of India Current A/c no. 10663183268, IFSC code no. SBIN0002274 in favour of the Project Coordinator (Cotton Improvement), Coimbatore. No entry shall be entertained without the submission of testing fee and hard copy of all the documents as per the ICAR Test Guidelines (available in official website).

<b>S. No.</b>	<b>Particulars</b>	<b>Total per entry for all the 5 locations</b>
1	Testing fee	Rs.5,00,000
2	GST @ 18%	Rs. 90,000
3	Total	Rs.5,90,000
4	TDS @ 10% (-)	Rs. 50,000
5	Total amount payable	Rs.5,40,000

**GENERAL POINTS TO BE NOTED**

- ❖ The seeds sponsored for the trials should be acid delinted without any seed treatment and 200 g seeds to be packed individually and **each packet of seed must be labelled with the name of the sponsoring company, name of the entry, trial name, etc.**
- ❖ No seeds shall be accepted after the due date as mentioned above for coding.
- ❖ The list of entry as per the trial given below is final, and no addition / modification will be entertained.
- ❖ M/s. Rasi Seeds and M/s. Seed works are requested to send requisite seeds of check hybrids as indicated in each trial.

## NORTH ZONE TRIAL

### Initial Evaluation Trial of Intra-Hirsutum Hybrids (New Entries)

Seed requirement: 200 g x 5

Number of Rows: 4 (Protected) / 2 (Unprotected)

Replications: 3

Design: Completely Randomized Block Design

S. No.	Entries	Sponsored by	Location
1.	ACH 902-2 BG II	Ajeet Seeds Pvt Ltd	Sriganganagar
2.	ARCH 1114 BG II	Ankur Seeds Pvt Ltd	Faridkot
3.	ARCH 1117 BG II	Ankur Seeds Pvt Ltd	Bathinda
4.	SP 7683 BG II	Bayer Biosciences Pvt Ltd	Hisar
5.	KCH 9322 BG II	Kaveri Seeds Pvt Ltd	CICR, Sirsa
6.	KCH 9344 BG II	Kaveri Seeds Pvt Ltd	
7.	C 9314 BG II	Mahyco Pvt Ltd	
8.	C 9315 BG II	Mahyco Pvt Ltd	
9.	MC 5410 BG II	Rallis India Limited	
10.	MC 5411 BG II	Rallis India Limited	
11.	RCH 983 BG II	Rasi Seeds Pvt Ltd	
12.	RCH 986 BG II	Rasi Seeds Pvt Ltd	
13.	US 705 BG II	Seed Works International Pvt Ltd	
14.	US 706 BG II	Seed Works International Pvt Ltd	
15.	<b>Zonal BGII Check – 1</b>	<b>RCH 773 BG II</b>	
16.	<b>Zonal BGII Check – 2</b>	<b>US 51 BG II</b>	

**Data to be recorded:** Given at the end

### Advanced Evaluation Trial of Intra-Hirsutum Hybrids – I (Promoted Entries)

Locations: Sriganaganagar, Faridkot, Bathinda, Hisar and CICR, Sirsa

Seed requirement: 200 g x 5

Number of Rows: 4 (Protected) / 2 (Unprotected)

Replications: 3

Design: Completely Randomized Block Design

S. No.	Entries Promoted	Sponsored by
1.	ACH 911-2 BG II	Ajeet Seeds Pvt Ltd
2.	ACH 999-2 BG II	Ajeet Seeds Pvt Ltd
3.	ARCH 1901 BG II	Ankur Seeds Pvt Ltd
4.	ARCH 1902 BG II	Ankur Seeds Pvt Ltd
5.	SP 7678 BG II	Bayer Biosciences Pvt Ltd
6.	Tejas BG II	Crystal Crop Protection Ltd
7.	Josh BG II	Crystal Crop Protection Ltd
8.	KCH 9323 BG II	Kaveri Seeds Pvt Ltd
9.	KCH 9333 BG II	Kaveri Seeds Pvt Ltd
10.	C 9314 BG II	Mahyco Pvt. Ltd.
11.	C 356 BG II	Mahyco Pvt. Ltd.
12.	MC 5414 BG II	Rallis India Limited
13.	NBC 1911 BG II	Nath Biogenes
14.	NBC 1912 BG II	Nath Biogenes
15.	G COT HY 8 BG II	NAU, Surat
16.	RCH 959 BG II	Rasi Seeds Pvt Ltd
17.	RCH 960 BG II	Rasi Seeds Pvt Ltd
18.	US 701 BG II	Seed Works International Pvt Ltd
19.	US 702 BG II	Seed Works International Pvt Ltd
20.	Solar 109 BG II	Solar Agrotech Pvt Ltd
21.	<b>Zonal BGII Check – 1</b>	<b>RCH 773 BG II</b>
22.	<b>Zonal BGII Check – 2</b>	<b>US 51 BG II</b>

**Data to be recorded:** Given at the end

## Advanced Evaluation Trial of Intra-Hirsutum Hybrids – II (Retained Entries)

Locations: Sriganaganagar, Faridkot, Bathinda, Hisar and CICR, Sirsa

Seed requirement: 200 g x 5

Number of Rows: 4 (Protected) / 2 (Unprotected)

Replications: 3

Design: Completely Randomized Block Design

S. No.	Entries Retained	Sponsored by
1.	ACH 945-2 BGII	Ajeet Seeds Pvt Ltd
2.	ACH 955-2 BGII	Ajeet Seeds Pvt Ltd
3.	ARCH 1808 BGII	Ankur Seeds Pvt Ltd
4.	ARCH 1805 BGII	Ankur Seeds Pvt Ltd
5.	SP7674 BGII	Bayer Biosciences Pvt Ltd
6.	Bio 6515 BGII	Bioseed
7.	Bio 6468 BGII	Bioseed
8.	CCH 666 BGII	Crystal Crop Protection Ltd
9.	CCH 333 BGII	Crystal Crop Protection Ltd
10.	JKCH 15409 BGII	JK Agri Genetics
11.	KCH 307 BGII	Kaveri Seed Pvt Ltd
12.	C 9312 BGII	Mahyco Pvt. Ltd.
13.	C 9313 BGII	Mahyco Pvt. Ltd.
14.	C 352 BGII	Mahyco Pvt. Ltd.
15.	C 354 BGII	Mahyco Pvt. Ltd.
16.	MC5408 BGII	Rallis India Limited
17.	MC5403 BGII	Rallis India Limited
18.	NCS 3444 Bt2	Nuziveedu Seeds Pvt. Ltd.
19.	NCS 3494 Bt2	Nuziveedu Seeds Pvt. Ltd.
20.	RCH 951 BGII	Rasi Seeds Pvt Ltd
21.	RCH 938 BGII	Rasi Seeds Pvt Ltd
22.	SWCH 7716 BGII	Seed Works International Pvt Ltd
23.	<b>Zonal BGII Check – 1</b>	<b>RCH 773 BG II</b>
24.	<b>Zonal BGII Check – 2</b>	<b>US 51 BG II</b>

**Data to be recorded:** Given at the end

### Initial Evaluation Trial of Bt Cotton Varieties (New Entries)

Seed requirement: 200 g x 5

Number of Rows: 4 (Protected) / 2 (Unprotected)

Replications: 3

Design: Completely Randomized Block Design

S. No.	Entries	Sponsored by	Location	Local Check
1.	CICR 20 Bt	CICR, Nagpur	Sriganganagar	RS 2013
2.	CICR 44 Bt	CICR, Nagpur	Faridkot	LH 2108
3.	FBt 1901	PAU, Faridkot	Bathinda	LH 2108
4.	FBt 1903	PAU, Faridkot	Sirsa (CICR)	CSH 3129
5.	FBt 1908	PAU, Faridkot	Hisar	H 1098i
6.	PBHBt 22	PAU, Bathinda		
7.	HAU Bt1	CCSHAU, Hisar		
8.	ARCV 22 Bt	Ankur Seeds Pvt Ltd		
9.	ARCV 44 Bt	Ankur Seeds Pvt Ltd		
10.	<b>F 2228 (Non-Bt ZC)</b>			
11.	<b>PAU Bt 1 (Bt ZC)</b>			
12.	<b>Local Check Non-Bt</b>			

**Data to be recorded:** Given at the end

### Advanced Evaluation Trial of Bt Cotton Varieties (Promoted & Retained Entries)

**Trial to be conducted in two spacing with 4 rows each**

1. Normal recommended spacing for varieties
2. Closer spacing (67.5 cm x 20 cm)

Locations: Sriganganagar, Faridkot, Bathinda, Hisar and CICR, Sirsa

Seed requirement: 400 g x 5

Number of Rows: 4 (Protected) / 2 (Unprotected)

Replications: 4

Design: Completely Randomized Block Design

S. No.	Entries Promoted	Sponsored by	Entries Retained	Sponsored by
1.	PBH Bt 21	PAU, Bathinda	PBH Bt 11	PAU, Bathinda
2.	<b>PAU Bt 1 (ZC)</b>		<b>F 2228 (Non-Bt ZC)</b>	
3.	<b>PAU Bt 2 (ZC)</b>		<b>Local Check Non-Bt</b>	

Quantity of Cry Protein and Bio-efficacy data to be generated at ICAR-CICR, Sirsa as detailed at the end.

**Data to be recorded in all the above trials:**

**Biometric evaluation**

1. Germination percentage
2. Plant stand at harvest
3. Plant height (cm) at harvest
4. Number of monopodia
5. Number of sympodia
6. Number of bolls / plant
7. Number of bolls / sq.m.
8. Lint Index (g)
9. Seed Index (g)
10. Ginning outturn (%)
11. Upper Half Mean Length (mm) under HVI Mode
12. Uniformity index under HVI Mode
13. Micronaire under HVI Mode
14. Tenacity under HVI Mode
15. Seed Cotton Yield (q/ha)
16. Qualitative presence of Cry Protein @ 30 days after sowing (DAS) following standard protocol (in leaf) and @ 90 days after sowing (DAS) following standard protocol (in square & boll tissues) in Initial Evaluation Trial and Advanced Evaluation Trial – I.  
Quantity of Cry Protein @ 30, 60, 90, 120 & 150 days after sowing (DAS) following standard protocol (in leaf, square & boll tissues) in Advanced Evaluation Trial – II.
17. Bio-efficacy data to be generated at ICAR-CICR, Sirsa against insect pests. (under laboratory conditions in Advanced Evaluation Trial – II during the third year of evaluation against lepidopteron insect pests of cotton)

**Evaluation under Protected Condition for Insect pests & Diseases incidences**

1. Jassids (average of 3 leaves/plant)
2. Thrips (average of 3 leaves per plant)
3. Whitefly (average of 3 leaves/plant)
4. Bollworms (No. of larvae/5 plants)
5. Percent locule damage
6. Percent open boll damage
7. Percent Disease Index for major diseases

**Evaluation under unprotected condition for insect pests and diseases:**

**Insect pests:**

1. Jassids (average on 3 leaves/plant)
2. Thrips (average of 3 leaves per plant)
3. Spotted bollworms (mean of counts/5 plants)

4. Bollworms (mean of counts/5 plants)
5. Percent Locule damage
6. Percent Open boll damage
7. Population of natural enemies of insect pests of cotton
8. Number of sprays for sap sucking pests – Protected

**Plant Pathology observations**

1. Percent Disease Index (PDI) of Grey Mildew
2. Percent Disease Index(PDI) of Bacterial Leaf Blight
3. Percent Disease Index (PDI) of Alternaria Leaf Spot
4. Percent Disease Index (PDI) of CLCuD (in North Zone only)
5. Incidence of any other diseases/ disorders

*Note: The standard operating protocols for recording data on yield attributes, yield, insect pest and disease incidences as per ICAR-AICRP on Cotton shall be followed.*