ISSN (Online) = 2707-5218

International Journal of Cotton Research and Technology

Research Manuscript

www.sciplatform.com



Approval and commercial release of conventional, yielding, early maturing and heat tolerant with desirable fiber traits variety CIM-554

Khan Idrees Muhammad, Shehzad Fazal, Husain Khadim										
Head Plant Breeding Section, Central Cotton Research Institute, Multan										
Authors'	All the authors have contributed equally.									
Contribution			(0000 11		_					
*Corresponding Au	thor's Email Addres	S	peer6000@gmail.com		Review Process: Double-blind peer review					
Received: 01 A	Received: 01 April 2021 Revised:			Accepted: 10 August 2021 Published Online: 20		Published Online: 26 August 2021				
Digital Object Identifier (DOI) Number: https://dx.doi.org/10.33865/ijcrt.003.01.0430										
	ABSTRACT									

Changes in the environment including heat and drought significantly declined the production of cotton. CCRI,. Multan developed a new variety CIM-554 through hybridization in this scenario. There is significantly higher yields recorded in advance varietal and agro-climatic Trials at farmers' fields and Govt. Farms in four consecutive years (2005-2008). In varietal trials, CIM-554 gave 20.2%, 14.5%, 12.6%, 12.8%, 22.7%, and 28.4%, increase- over commercial varieties MNH-786, CIM-534, CIM-496 NIAB-111, CIM-506 and CIM-499 respectively for seed cotton yield. In Zonal varietal trials (2007-08), CIM-554 gave a 4.9% higher yield of seed cotton over standard while in 2008-09, CIM-554 gave 21.8% higher seed cotton over the standard i.e CIM-496. CIM-554 exceeded commercial variety CIM-499 during 2004-05 in Punjab in National level Trial i.e. NCVT. CIM-554 had possessed desirable traits with high ginning GOT %age, better fiber qualities, and spinning qualities. Commercial cultivation of this variety significantly contributed to the overall cotton production as well as it can be used as valuable.

Keywords: Cotton, conventional, early maturing, yield, upland cotton.

INTRODUCTION: Cotton is a cash crop and is a vital source of raw material to the textile industry. The cotton production is declined to 1% in Gross Domestic Production and it contributed to 5.1 % in agriculture value addition. This year production of cotton massively declined, therefore, it maintained supply chain for cotton textile industry, the import of raw cotton during July has increased to 345.363 thousand tonnes compared to 97.354 thousand tones within same period last year showing a growth of 254.75 % while in value terms it reached to US\$ 588.236 million against US\$ 224.647 million witnessing the growth of 161.85%. 2015-16, the cotton crop was sown on an area of 2917 thousand hectares, showing a decrease of 1.5% over last year's area of 2961 thousand hectares. Cotton production for the year 2015 stood at 10.074 million bales against 13.960 million bales last year showing a decline of 27.8 %. The major reason for the low yield of seed cotton includes CLCuV and pink bollworm infestation as the major reasons in Pakistan. There are several varieties of cotton namely, CIM-448, CIM-1100, CIM-446, MNH-552, CIM-443, and MNH-554 was developed by various cotton breeding centers which have shown tolerance against CLCuV. Cotton varieties exhibit tolerance but it showed susceptibility in presence of high inoculum and pressure in the environment (Shah et al., 2004) Besides, the Cotton (Gossypium) crop suffered multiple shocks during the 2020-21 growing season such as prolonged and frequent rains badly hit the standing cotton (Gossypium) crop, with additional crop losses coming from severe attacks of pink bollworm. While the crop generally becomes more pest attacks during the rainy season, the risks heightened further this year as the plant was still in the early stage of growth due to sowing delays. Simultaneously, nonexistence of support prices discouraged farmers from investing in fertilizer and pesticides. Highly significant variations among years, genotypes (varieties), and year × genotypes interaction for several bolls per plant, boll weight and seed

cotton yield (Arshad *et al.*, 2005) particularly in case of American cotton.

OBJECTIVES: In this perspective, a strategy was developed to exploit exotic material employing a conventional breeding approach to develop a variety with wider adaptability to various types of stresses.

MATERIALS AND METHODS

The replicated varietal trials in CIM-554 is developed by hybridization of a local line 2579-4/97 and exotic variety W-1103 during 1997-98. W-1103 is short stature, early maturing variety having adequate resistance against CLCV and prevailing sucking insect pests. Further, it was highly heat and droughttolerant. The local line 2579/97 was tall, early maturing, highly heat-tolerant in nature. It has a high staple length and had an oblong boll shape. The strain was bulked during 2003-2004 in F₆ generation. The ancestral selection procedure was used sorting of desirable genotypes from different populations and lines with similar morphology, fiber and seed characters were selected. This variety passed through a series of yield trials viz. multilocational varietal trials, zonal varietal trials at farmers' fields and Govt. farms, Co-ordinated varietal trials i.e., NCVT of Pakistan Central Cotton Committee and Provincial Coordinated Cotton (PCC) Trials of the Punjab Government.

RESULTS

Varietal and zonal trials: A new strain CIM-554 was tested in Varietal Trials with replications at CCRI, Multan, and its testing centers to compare with the commercial varieties in last five years of data. The data presented in table 1 showed that CIM-554 is significantly higher yielding than other commercial varieties. CIM-554 gave 20.2% increase over MNH-786, 14.5% increase over CIM-534, 12.6% increase over CIM-496, 12.8% increase over NIAB111, 22.7% increase over and 28.4% increase over MNH-786, CIM-534, CIM-496, NIAB-111, CIM-506 and CIM-499 respectively. Variety CIM-554 was checked in

Year	Name	Location		Varieties / seed cotton (kg ha ⁻¹)									
	of Trial		CIM- 554	CIM- 786	CIM- 534	CIM- 496	NIAB- 111	CIM- 506	CIM- 499	5 %			
2005- 06	VT-3	Multan	4392	-	-	4153	3922	4005	-	-			
		Khanewal	4361	-	-	4021	3842	3962					
		Average	4377	-	-	4087	3882	3984	-	83.47			
2006- 07	VT-2	Multan	4401	-	-	3815	-	3148	-	-			
		Khanewal	4232	-	-	3640	-	3059	-	-			
		Average	4317	-	-	3728	-	3104	-	87.64			
	2 Years A	verage	4347	-	-	3907	-	3544	-	-			
2007- 08	VT-2	Multan	4424	3971	3987	4112	-	-	-	-			
		Khanewal	4003	3429	3780	4046	-	-	-	-			
		Average	4214	3700	3884	4079	-	-	-	206.47			
2008- 09	VT-2	Multan	4166	3182	3299	2593	-	-	-	-			
		Khanewal	3156	2523	2682	3045	-	-	-	-			
		Average	3661	2853	2991	2819	-	-	-	87.38			
	2 Years A	verage	3937	3276	3437	3449	-	-	-	-			
	% increas	se over	-	20.2	14.5	12.6	12.8	22.7	28.4	-			

Table1: Yield performance of CIM-554 in varietal trials at Central Cotton Research Institute, Multan during 2002 to 2008

Zonal Varietal Trials at farms of government level in different progressive growers in different ecological zones during 2007-08 and 2008-09. The data in table 2 revealed that based on an average of 20 locations conducted during 2007-2008, CIM-554 yielded 3768 kgha⁻¹ compared with 3591 kgha⁻¹ of CIM-496.

Sr. No	Name of grower/location	Varietie cotton (
		CIM- CIM-			
		554	496		
1	Mr. Muhammad Saleem, Jalla Arian, Lodhran	3716	3500		
2	Mr. Muhammad Tahir, Lodhran	4000	3750		
3	Ch. Muhammad Akram, Lodhran	3360	3250		
4	Haji Tariq Mahmood Bhutta, 6-Faiz, Multan	4225	4080		
5	Ch. Ghohar Ali, Makhdum Rasheed	3965	3670		
6	Ch. Muhammad Hanif 108/7R, Sahiwal	3300	3100		
7	Ch. Muhammad Saddiq, 17/11R, Sahiwal	3210	3090		
8	Mr. Khuda Bux, 19 Kasi, Multan	4160	3900		
9	Mian Mehboob Qureshi, Kot Addu	3570	3600		
10	Mian Abbas Qureshi, Kot Addu	3960	3810		
11	Mr. Shahid Manzoor, Khanpur	3570	3610		
12	Ch. Rehmat Ali, 88/10-R, KWL	3210	2950		
13	Mr. Aleem Ahmad Khan, Tounsa	3810	3740		
14	Sh. Abdul Rasheed, Burewala	3865	3500		
15	Ch. Sher Bahdar 255/EB, Burewala	3240	3060		
16	Haji Allah Ditta, Kukar Hatta	3290	3160		
17	Ch. Ramzan Ahmad, Hasilpur	4050	3950		
18	Mr. Ghulam Mustafa Chatta, Uch Sharif	4107	4000		
19	Ch. Zia-ur-Rehman, Liaquat Pur	4360	4040		
20	Ch. Hafeez, Rajanpur	4400	4060		
	Average	3768	3591		

Table 2: Yield performance of CIM-554 in Zonal Varietal Trial at farmers' fields during 2007-08.

During 2008-09, CIM-554 was tested in ZVT in different ecological zones. Data is presented in table 3, which showed that CIM-554 has the highest seed cotton yield 3465 kg ha^{-1} compared with 2844 kg ha⁻¹ of CIM-496.

REGIONAL ADAPTABILITY TRIALS. National Coordinated

Varietal Trials: The CIM-554 included in NCVT for two years. Name of grower/location Sr. Varieties/ seed No. cotton (kg ha-1) CIM-CIM-496 554 Ch. Hafeez, Rajanpur 1 3580 2817 2 Ch. Zia-ur-Rehman, Liaquat Pur 3512 2928 3 Mr. Ghulam Mustafa Chatta, Uch Sharif 3487 2880 4 Haji Tariq Mahmood Bhutta, 6-Faiz, 2918 2188 Multan 5 Ch. Ghohar Ali, Makhdum Rasheed 3140 2455 6 Ch. Muhammad Hanif 108/7R, Sahiwal 3467 3051 7 Ch. Muhammad Saddiq, 17/11R, Sahiwal 3571 2995 Ch. Muhammad Akbar 70/5L, Sahiwal 8 3240 2529 9 Mr. Khuda Bux, 19 Kasi, Multan 3119 2527 10 Mian Mehboob Oureshi, Kot Addu 3490 2985 11 Mian Abbas Oureshi, Kot Addu 3570 2828 12 Mr. Shahid Manzoor, Khanpur 3511 2921 13 Ch. Rehmat Ali, 88/10-R, KWL 3860 3329 14 Mr. Aleem Ahmad Khan, Tounsa 3776 3112 15 Sh. Abdul Rasheed. Burewala 3560 3061 16 Haji Allah Ditta, Kukar Hatta 3281 2706 17 Ch. Ramzan Ahmad, Hasilpur 3800 3133 18 Mr. Muhammad Tahir, Lodhran 3460 2801 19 Ch. Muhammad Akram, Lodhran 3378 2920 Mr. Muhammad Saleem, Jalla Arian, 20 3580 2715 Lodhran 3465 Average 2844

Table 3: Yield performance of CIM-554 in Zonal Varietal Trial at farmers' fields during 2008-09

Yield data for 2007-08 are given in table 4 indicated that in Faisalabad Region CIM-554 gave high yield (3100 kg ha⁻¹) as compared to the standard variety CIM-496 (2780 kg ha⁻¹). CIM-554 again gave a higher yield compared with standard variety CIM-496 (2326 kg ha⁻¹) based on average of all the locations in Punjab (2517 kg ha⁻¹). CIM-554 was also included in NCVT during 2008-09. The yield data presented in table 4 revealed that based on an average of 20 locations of Punjab. The CIM-554 had presented a higher yield (3095 kg ha⁻¹) as compared with 2940

kg ha⁻¹ of standard variety CIM-496. On average, during two consecutive years both CIM-554 and CIM-496 gave same yields but CIM-554 exceeded in both years.

Provincial Coordinated Trials: CIM-554 have been evaluated in PCC Trials for two consecutive years i.e. 2007-08 and 2008-09 by the Punjab Government. The yield data for the year 2007-2008 in table 5 revealed based on the average of all 16 locations CIM-554 gave 2279 kg ha⁻¹ yield which is higher than CIM-496 (2256 kg ha⁻¹). The yield data for the year 2008-09 given in table 7 revealed that CIM-554 gave a higher yield (2551 kg ha⁻¹) compared with standard variety CIM-496 (2261 kg ha⁻¹).

Entomological studies: Entomology Section of CCRI conducted entomological studies in host plant resistant trial for assessing tolerance levels against jassids, whitefly, thrips, and bollworm damage as compared to commercial variety CIM-496. Pest population data is under the self-control of Aphids Jassids thrips un-sprayed conditions shown in table-5 indicated that CIM-554 has shown better tolerance against sucking pest and at part against bollworm compared with CIM-496.

Pathological studies: Pathological studies of CIM-554 relating to leaf curl virus (CLCuV) were conducted by the Pathology Section of C Multan. Table 9 presented the results of field screening of CIM-55 NCVT during 2008-2009. The data presented in table 5 showed disease incidence (at 90 days after sowing) at CCRI Multan ranged fi 41.2% to 100% recorded on 25.8.200.

Evaluation for morphological and fiber characteristics: Plant traits viz, plant height, number of monopodial and sympodial branches, maximum boll weight, average boll weight, and number of bolls per plant presented in Table 9 showed that on average of two years (2008 and 2009), CIM-554 had 178cm plant height, 1.8 and 27 monopodial and sympodial branches per plant respectively. It possessed 4g average boll weight and 29 bolls plant⁻¹. CIM-554 was developed by exploitation of local and exotic germplasm for expected outcome. Leaf shape is normal and nectaried. It has landed pubescence of stem and leaves. Pollen color is creamy, and the boll shape is oval. CIM-554 is adapted in many environments, it has wide adaptability for heat and other abiotic stresses in cotton (Gossypium).

DISCUSSION

Cotton is a sensitive crop that is significantly affected according to cultivars, location as well as environmental conditions. Therefore, genetic potential of cotton germplasm for various morphological parameters is highly desirable to sort out high potential strains to be used in future breeding (Khan et al., 2010). Different breeding procedures are devised to obtain the desired genetic variability and/or parental combinations or selection of genotypes in diverse segregating populations (Esmail et al., 2008). These procedures may include introduction of exotic germplasm (leaf or seed), hybridization, and polyploidy. Studies reported development of cotton genotypes by hybridizing the distant parents as a potential source for the development of new varieties (Punitha and Raveendran, 2004; Akter et al., 2009). CIM-554 was developed by exploitation of local and exotic germplasm having promising outcomes based on agronomical, morphological, and physiological traits which is one of the established procedures for estimation of genetic diversity (Bajracharya et al., 2006). Anjum et al. (2014) have confirmed results of CIM-554 observed during its development which have exhibited high genetic potential in all agronomic and fiber traits recorded and exceeded with standards used during trials.

Availability: Limited quantities of seed of CIM-554 for research purposes can be requested from author. Appropriate recognition of source should be given when it contributes to the development of new cultivars, breeding lines, or hybrids.

ACKNOWLEDGEMENTS

The funds and facilities provided by the PCCC and the keen interest of Vice-President, PCCC leading to the development of this variety are thankfully acknowledged. Director, CCRI, Multan deserves sincerest thanks for his technical guidance and support for the development of this variety. The testing and seed multiplication facilities provided by the Punjab Seed Corporation at Khanewal are also acknowledged. The cooperation extended by the Director of Research, PCCC, Karachi, and Director, Cotton Research Institute, Faisalabad for testing of this variety in NCVT and Provincial Coordinated Cotton Trials respectively is also appreciably acknowledged.

YEAR	REGION	No of Trials	Seed Cotton Yield (Kgha-1)			
			CIM-554	CIM-496		
2007-08	Multan	07	2182	2065		
cotton	Faisalabad	04	3100	2780		
ECCRI,	Average		2641	2422		
554 in	% increase over			9.04		
d 2008-09	Multan	06	3095	2940		
l from	Faisalabad	03	2935	3090		
i ii Oili	Average		3015	3015		
	% increase over			0		

Table. 4: Yield performance of CIM-554 and standards in National Coordinated Varietal Trial at different locations during 2007-08 and 2008-09.

- **REFERENCES:** Akter, A., M. Hasan, A. Paul, M. Mutlib and M. J. S. J. o. A. Hossain, 2009. Selection of parent for improvement of restorer line in rice (*Oryza sativa* L.). Journal of Agriculture, 7(2): 43-50.
- Anjum, Z. I., M. T. Azhar, K. Hayat, F. Ashraf, U. Shahzad and M. Azam, 2014. Development of high yielding and clcuv resistant ulpand cotton variety "cim-608". Pakistan Journal of phytopathology, 26(1): 25-34.
- Arshad, M., R. Ali, M. Idrees and M. Afzal, 2005. Indigenous evaluation of long staple and high yield upland cotton variety CIM 707. The Pakistan cottons, 49: 35-44.
- Bajracharya, J., K. Steele, D. Jarvis, B. Sthapit and J. Witcombe, 2006. Rice landrace diversity in Nepal: Variability of agromorphological traits and SSR markers in landraces from a highaltitude site. Field crops research, 95(2-3): 327-335.
- Esmail, R., J. Zhang and A. Abdel-Hamid, 2008. Genetic diversity in elite cotton germplasm lines using field performance and rapd markers. World journal of agriculture sciences, 4(3): 369-375.
- Khan, N. U., K. B. Marwat, G. Hassan, S. B. Farhatullah, K. Makhdoom, W. Ahmad and H. U. Khan, 2010. Genetic variation and heritability for cotton seed, fiber and oil traits in *Gossypium hirsutum* L. Pakistan journal of botany, 42(1): 615-625.
- Punitha, D. and T. Raveendran, 2004. DNA fingerprinting studies in coloured cotton genotypes. Plant breeding, 123(1): 101-103.
- Shah, H., S. Khalid, S. Naqvi and T. Yasmin, 2004. A simple method for screening cotton germplasm against cotton leafcurl begomovirus. Sarhad Journal of Agriculture: 453-458.

Sr.	Varieties	CRI	CRS	CRS	CRI	CRS	CRS	CRSS	A.A.	ARI	ARS	ARS	ARS	CCRI	NIAB	CRSS	PSC	Average
No.		FSD	Multan		RYK	Sahiwal	BWP	Jhang		FSD	BWP	KWL		Multan		Piplan	KWL	
	VH-255	4121	3149	2852	1937	3712	1650	2517	2701	2166	2489	2197	3525	3748	4688	2956	3047	2966
_	FH-942	3636	3040	1722	1937	3027	1650	2652		1074	2410	1950	4445	3389	4258	2292	3081	2667
		3062	2498	1238	2169	3505	1211	2282		1204	2491	2074	2513	4035	5109	3095	3064	2586
	MG-3	3143	3069	1650	2831	3314	2081	2434		1870	2593	1728	1856	3228	3497	2535	2780	2579
-	FH-113	3114	2989	1812	2292	2485	2090	2117	2752	2481	2680	2170	1146	3443	3673	2808	2880	2558
	CRSM-70 NIBGE-	2710	3826	1758	1900	3410	1292	1717 2305	2106	814	2708	1506	2971	3407	3617 4287	3138 2890	3131	2501
	115	3229	2750	1722	1970	3426	1103	2305	1712	1148	2412	2543	1216	3910	4287	2890	3064	2480
		2643	2551	1381	2669	3744	1381	1808	1518	2000	2670	2123	1781	3228	3979	2918	2712	2444
9	FH-941	2535	2817	1094	2761	2581	1453	1924		1278	2715	2247	2115	3300	4109	3320	2160	2435
10	NIAB-852	2332	2750	1094	2330	2677	1247	1934	1989	1018	2698	2247	2503	3461	3732	2253	2746	2313
11	SLH-284	2512	2578	1704	2239	3665	1458	2063	2000	1148	2621	1926	1001	3910	3120	2258	2579	2299
	BH-168	2332	3202	1023	2061	2677	1688	1663	1511	1407	2682	1728	2675	3390	3481	2402	2646	2286
		2368		1005	1830	2629	1381	1782	2077	1018	2708	2543	1954	3084	3694	2942	2546	2279
14	CRSM-38	1954	4331	1453	1238	3107	1305	2595		851	2712	1901	727	2995	2485	2727	3265	2261
		1794	1	700	2099	2597	1758	1545		1167	2698	2543	2583	3210	3288	2789	2796	2256
	GS-1	2349	2405	807	1754	3219	1426	1939		1093	2701	1407	802	3676	4474	3267	2712	2248
_	RH-610	2813	2166	1381	2115	2549	1449	1474		1111	2706	2519	1615	2833	4132	2473	2528	2229
	RH-541	2356	2684	771	1431	3107	1327	1404		1037	2492	2148	2298	2457	3929	3095	3014	2195
	BH-167	1878	2671	466	1900	2358	1103	1552	1629	1852	2707	2419	2341	2744	3688	3277	2193	2174
	ASR-1	1371	2285	700	1754	2756	1399	1452		1407	2579	2321	2077	2600	3600	2076	2378	2081
	VH-260	1363	2484	718	1883	1753	1386	1369	2196	1018	2705	1752	1162	3228	3240	3478	2361	2006
	MG-2	478	1993	861	1092	2056	1372	2847	1855	1037	2695	1456	840	1901	2152	2043	3382	1754
	CIM-541	1100	2192	359	1146	2023	996	1261		589	2498	2148	1588	2367	2029	2976	2010	1678
	MG-1	665	1594	448	447	2166	789	2106		555	2468	1210	3213	-	1911	1483	2579	1557
Tab	le 5: Yield	l perf	ormanc	e of new	[,] strain	ıs (Kg ha	⁻¹) in P	rovinci	al Coc	rdinat	ed Cot	ton Tri	als (P	CCT) du	ring 2	007-20	008.	
	Varietie	es				No. of i	nsects/	leaf						% boll	worm	damag	е	
				Jassid		W	hitefly]	Thrips		9	Spotte	d		Р	ink	
	CIM-55	4		0.8	3		12.97			0.52	2		11.0				4.0	
	CIM-49	6		1.0	0		16.60			0.26	; ;		11.4			3	3.30	
Table	CIM-49		M-554 to			and bollw		nage at	: Centra			arch Ins		Multan d	luring			
Table Sr.		n of Cl	M-554 to CCRI			SC A	orm dai	nage at CRS				arch Ins CF	titute,	CRI	NIA	2008-20 B)09. CRS	Average
Sr. No	6: Reaction Variet	n of Cl ies	CCRI Multan	o sucking CRS Multan	pests a PS KV	SC A VL B	orm dai ARS WP	CRS BWP	C Sah	al Cotto RS iwal	n Resea RSS Jhang	CF RY	titute, RI K	CRI FSD	NIA FSI	2008-20 B (D V(009. CRS ehari	0
Sr. No . 1	6: Reaction Variet FH-942	n of Cl ies	CCRI Multan 2883	o sucking CRS Multan 2028	pests a PS KV 32	SC A VL B 65 3	orm dan ARS WP 166	CRS BWP 3659	C Sah 27	al Cotto RS iwal 747	n Resea RSS Jhang 4004	CF RY 223	titute, RI K 32	CRI FSD 1848	NIA FSI 362	2008-20 B (0 D V(4 3	009. CRS ehari 3570	3007
Sr. No 1 2	6: Reaction Variet FH-942 RH-620	n of Cl ies	CCRI Multan 2883 2511	CRS Multan 2028 1872	PSts a PS KV 32 38	SC A VL B 65 3 56 3	orm dan RS WP 166 013	CRS BWP 3659 2762	C Sah 27 22	RS iwal 747 296	n Resea RSS Jhang 4004 3108	CF RY 223 200	titute, RI K B2 67	CRI FSD 1848 2534	NIA FSI 362 404	2008-20 B 0 D Vo 4 3 7 2	009. CRS ehari 3570 2063	3007 2739
Sr. No. 1 2 3	6: Reaction Variet FH-942 RH-620 VH-255	n of Cl ies	CCRI Multan 2883 2511 3117	Sucking CRS Multan 2028 1872 2574	Pests a PS KV 32 38 39	SC A VL B 65 3 56 3 47 2	orm dar IRS WP 166 013 523	CRS BWP 3659 2762 2673	C Sah 27 22 22	RS iwal 747 296	n Resea RSS Jhang 4004 3108 3705	CF RY 222 200 202	titute, XI YK 32 67 24	CRI FSD 1848 2534 3120	NIA FSI 362 404 431	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	009. CRS ehari 3570 2063 2655	3007 2739 2995
Sr. No. 1 2 3 4	6: Reaction Variet FH-942 RH-620 VH-255 CRSM-20	n of Cl ies	CCRI Multan 2883 2511 3117 2461	CRS Multan 2028 1872 2574 2730	pests a PS KV 32 38 39 40	SC A VL B 65 3 56 3 47 2 72 3	orm dan NRS WP 166 013 523 133	CRS BWP 3659 2762 2673 3372	C Sah 27 22 22 22 24	al Cotto RS iwal 747 296 296 405	n Resea RSS Jhang 4004 3108 3705 3885	CF RY 222 200 200 200	titute, XI K 32 67 24 24 24	CRI FSD 1848 2534 3120 3044	NIA FSI 362 404 431 311	2008-20 B 0 V 0 4 3 7 2 1 2 1 3	OO9. CRS ehari 8570 2063 2655 3121	3007 2739 2995 3033
Sr. No. 1 2 3 4 5	6: Reaction Variet FH-942 RH-620 VH-255 CRSM-20 MG-6	n of Cl ies	CCRI Multan 2883 2511 3117 2461 2708	Sucking CRS Multan 2028 1872 2574 2730 2496	Pests a PS KV 32 38 39 40 35	SC A VL B 65 3 56 3 47 2 72 3 88 3	orm dan NRS WP 166 013 523 133 366	CRS BWP 3659 2762 2673 3372 2619	C Sah 27 22 22 22 24 24 23	al Cotto RS iwal 747 296 296 405 337	n Reset RSS Jhang 4004 3108 3705 3885 4004	CF RY 222 200 200 200 200 200	titute, KI %K 32 67 24 24 24 24	CRI FSD 1848 2534 3120 3044 2669	NIA FSI 362 404 431 311 386	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	O09. CRS ehari 3570 2063 2655 3121 3175	3007 2739 2995 3033 2986
Sr. No. 1 2 3 4	6: Reaction Variet FH-942 RH-620 VH-255 CRSM-20 MG-6 CIM-557	n of Cl ies	CCRI Multan 2883 2511 3117 2461 2708 2340	Sucking CRS Multan 2028 1872 2574 2730 2496 1716	Pests a PS KV 32 38 39 40 35 33	AC A B B 65 3 56 3 47 2 72 3 88 3 18 3	orm dan RS WP 166 013 523 133 366 079	CRS BWP 3659 2762 2673 3372 2619 2062	C Sah 27 22 22 22 24 23 24 23	Al Cotto RS iwal 747 296 296 337 302	n Resea RSS Jhang 4004 3108 3705 3885 4004 3168	CF RY 223 200 200 200 200 200 200 200 200 200	titute, XI XK 32 57 24 24 24 24 54	CRI FSD 1848 2534 3120 3044 2669 2282	NIA FSI 362 404 431 311 386 348	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	009. CRS ehari 3570 2063 2655 3121 3175 2368	3007 2739 2995 3033 2986 2553
Sr. No. 1 2 3 4 5 6	6: Reaction Variet FH-942 RH-620 VH-255 CRSM-20 MG-6	n of Cl ies	CCRI Multan 2883 2511 3117 2461 2708	Sucking CRS Multan 2028 1872 2574 2730 2496	Pests a PS KV 32 38 39 40 35	SC A VL B 65 3 56 3 47 2 72 3 88 3 18 3 77 2	orm dan NRS WP 166 013 523 133 366	CRS BWP 3659 2762 2673 3372 2619	C Sah 27 22 22 24 24 23 28 18	al Cotto RS iwal 747 296 296 405 337	n Reset RSS Jhang 4004 3108 3705 3885 4004	CF RY 222 200 200 200 200 200	titute, R 'K 32 57 24 24 24 24 24 24 24 24 24 24	CRI FSD 1848 2534 3120 3044 2669	NIA FSI 362 404 431 311 386	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	O09. CRS ehari 3570 2063 2655 3121 3175	3007 2739 2995 3033 2986
Sr. No. 1 2 3 4 5 6 7	6: Reaction Variet FH-942 RH-620 VH-255 CRSM-20 MG-6 CIM-557 GS-1	n of Cl ies	CCRI Multan 2883 2511 3117 2461 2708 2340 2355	Sucking CRS Multam 2028 1872 2574 2730 2496 1716 1466	Pests a PS KV 32 38 39 40 35 33 36	SC A VL B 65 3 56 3 47 2 72 3 88 3 18 3 77 2 41 2	orm dar ARS WP 166 013 523 133 366 079 756	CRS BWP 3659 2762 2673 3372 2619 2062 1972	C Sah 27 22 22 24 24 23 28 28 18 22	Al Cotto RS iwal 747 296 296 405 337 302 359	n Reset RSS Jhang 4004 3108 3705 3885 4004 3168 3227	CF RY 223 200 200 200 200 200 200 200 200 200	titute, R 'K 32 57 24 24 24 24 50 50	CRI FSD 1848 2534 3120 3044 2669 2282 1777	NIA FSI 362 404 431 311 386 348 251	2008-20 B 0 O Value 4 3 7 2 1 2 1 3 0 3 4 2 9 2 7 2	O09. CRS ehari 3570 2063 2655 3121 3175 2368 2458	3007 2739 2995 3033 2986 2553 2305
Sr. No. 1 2 3 4 5 6 7 8	6: Reaction Variet FH-942 RH-620 VH-255 CRSM-20 MG-6 CIM-557 GS-1 VH-277	n of Cl ies	CCRI Multan 2883 2511 3117 2461 2708 2340 2355 1953	Sucking CRS Multam 2028 1872 2574 2730 2496 1716 1466 1326	PS KV 32 38 39 40 35 33 36 36	SC A VL B 65 3 56 3 47 2 72 3 88 3 18 3 77 2 41 2 56 2	orm dan IRS WP 166 013 523 133 366 079 756 679	CRS BWP 3659 2762 2673 3372 2619 2062 1972 2116	C Sah 27 22 22 24 24 23 28 28 18 22 22 28	al Cotto RS iwal 296 296 296 296 296 296 205 837 802 359 255	n Reset RSS Jhang 4004 3108 3705 3885 4004 3168 3227 2510	CF RY 223 200 200 200 200 200 200 200 144 129 155	titute, R % 32 57 24 24 24 24 50 24 50 24	CRI FSD 1848 2534 3120 3044 2669 2282 1777 2328	NIA FSI 362 404 431 311 386 348 251 249	2008-20 B 0 V V 4 33 7 22 1 22 1 33 0 33 4 22 9 22 7 22 2 22	009. CRS ehari 3570 2063 2063 2055 3121 3175 2368 2458 2117	3007 2739 2995 3033 2986 2553 2305 2270
Sr. No. 1 2 3 4 5 6 7 8 9 10 11	6: Reaction Variet FH-942 RH-620 VH-255 CRSM-20 MG-6 CIM-557 GS-1 VH-277 NIAB-85 CRSM-38 VH-207	n of Cl ies	CCRI Multan 2883 2511 3117 2461 2708 2340 2355 1953 3038 2242 2552	Sucking CRS Multam 2028 1872 2574 2730 2496 1716 1466 1326 2106 3042 1872	Pests a KV 32 38 39 40 35: 33 36 36 38 38 33 36 38 33 36 38 33 34	SC A VL B 65 3 56 3 47 2 72 3 88 3 18 3 77 2 41 2 56 2 54 2 80 2	orm dat IRS WP 166 013 523 133 366 079 756 679 979 823 899 100	CRS BWP 3659 2762 2673 3372 2619 2062 1972 2116 3498 2152 2726	C Sah 27 22 22 24 24 23 28 18 22 28 22 28 23 28 23 28	al Cotto RS iwal 747 296 296 837 302 359 255 397 350 397	n Resea RSS Jhang 4004 3108 3705 3885 4004 3168 3227 2510 3825 3825 3425 2989	CF RY 222 200 200 200 200 144 122 155 200 133 133	titute, R G K K K K K K K K	CRI FSD 1848 2534 3120 3044 2669 2282 1777 2328 2229 1894 2510	NIA FSI 362 404 431 311 386 348 251 249 397	2008-20 B 0 V0 V0 4 33 7 22 1 22 1 33 4 22 9 22 7 22 2 22 7 22 7 22 7 22 7 22 7 22 0 33	OO9. CRS ehari 3570 2063 2121 3175 2368 2458 2117 2529 2363 3104	3007 2739 2995 3033 2986 2553 2305 2270 2996 2534 2534 2807
Sr. No. 1 2 3 4 5 6 7 8 9 10 11 12	6: Reaction Variet FH-942 RH-620 VH-255 CRSM-20 MG-6 CIM-557 GS-1 VH-277 NIAB-85 CRSM-38 VH-207 SLH-317	n of Cl ies	CCRI Multan 2883 2511 3117 2461 2708 2340 2355 1953 3038 2242 2552 2784	Sucking CRS Multan 2028 1872 2574 2730 2496 1716 1466 1326 2106 3042 1872 2028	Pests a KV 32 38 39 40 35: 33 36 38 39: 40: 35: 33: 36: 38: 33: 36: 38: 33: 36: 38: 33: 34: 34:	SC A VL B 65 3 56 3 47 2 72 3 88 3 18 3 77 2 41 2 56 2 54 2 80 2 80 2	orm dat IRS WP 166 013 523 133 366 079 756 679 979 823 899 746	CRS BWP 3659 2762 2673 3372 2619 2062 1972 2116 3498 2152 2726 2421	C Sah 277 222 224 224 235 24 235 24 255 255 255 255 255 255 255 255 255	al Cotto RS iwal 747 296 296 296 405 337 302 359 255 397 350 397 405 405	n Resea RSS Jhang 4004 3108 3705 3885 4004 3168 3227 2510 3825 3825 3425 2989 4005	CF RY 220 200 200 200 200 144 122 155 200 133 139 199 16	titute, XI XK 32 67 24 24 24 24 50 24 50 24 35 31 79	CRI FSD 1848 2534 3120 3044 2669 2282 1777 2328 2229 1894 2510 1466	NIA FSI 362 404 431 311 386 348 251 249 397 288 387 319	2008-20 B 0 V0 V0 4 33 7 22 1 22 1 33 4 22 9 22 7 22 2 22 7 22 7 22 7 22 7 22 7 22 7 22 8 22	OO9. CRS ehari 3570 2063 2655 3121 3175 2368 2458 2117 2529 2363 3104 2476	3007 2739 2995 3033 2986 2553 2305 2270 2996 2534 2534 2807 2608
Sr. No. 1 2 3 4 5 6 7 8 9 10 11 12 13 13	6: Reaction Variet FH-942 RH-620 VH-255 CRSM-20 MG-6 CIM-557 GS-1 VH-277 NIAB-85 CRSM-38 VH-207 SLH-317 CIM-496	n of Cl ies	CCRI Multan 2883 2511 3117 2461 2708 2340 2355 1953 3038 2242 2552 2784 1350	Sucking CRS Multam 2028 1872 2574 2730 2496 1716 1466 1326 2106 3042 1872 2028 780	Pests a KV 32 38 39 40 35: 33 36 36 36 38 33 36 38 34 34 32	SC A VL B 65 3 56 3 47 2 72 3 88 3 18 3 77 2 41 2 56 2 54 2 80 2 80 2 65 2	orm dan IRS WP 166 013 523 133 366 079 756 679 979 823 899 746 946 100	CRS BWP 3659 2762 2673 3372 2619 2062 1972 2116 3498 2152 2726 2421 2493	C Sah 277 222 244 235 245 245 255 255 255 255 255 255 255 25	al Cotto RS iwal 747 296 405 337 302 359 255 397 350 397 405 405 405	n Resea RSS Jhang 4004 3108 3705 3885 4004 3168 3227 2510 3825 3825 3425 2989 4005 2929	CF RY 220 200 200 200 200 144 122 155 200 133 135 200 133 195 166 13	titute, R G G C C C C C C C C	CRI FSD 1848 2534 3120 3044 2669 2282 1777 2328 2229 1894 2510 1466 2581	NIA FSI 362 404 431 311 386 348 251 249 397 288 387 319 298	2008-20 B 0 V 0 4 3 7 2 1 2 1 3 0 3 4 2 9 2 7 2 2 2 7 2 2 2 7 2 0 3 8 2 5 1	OO9. CRS ehari 3570 2063 2655 3121 3175 2368 2458 2117 2529 2363 3104 2476 991	3007 2739 2995 3033 2986 2553 2305 2270 2996 2534 2534 2807 2608 2261
Sr. No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14	6: Reaction Variet FH-942 RH-620 VH-255 CRSM-20 MG-6 CIM-557 GS-1 VH-277 NIAB-85 CRSM-38 VH-207 SLH-317 CIM-496 GS-14	n of CI ies	CCRI Multan 2883 2511 3117 2461 2708 2340 2355 1953 3038 2242 2552 2784 1350 2154	Sucking CRS Multan 2028 1872 2574 2730 2496 1716 1466 1326 2106 3042 1872 2028 780 1794	Pests a KV 32 38 39 40 35: 33 36 36 38 33 36 38 33 36 38 33 36 38 33 36 38 33 34 34 32 39	SC A VL B 65 3 56 3 47 2 72 3 88 3 18 3 77 2 41 2 56 2 54 2 80 2 80 2 65 2 447 2	orm dat IRS WP 166 013 523 133 366 079 756 679 979 823 899 746 946 713	CRS BWP 3659 2762 2673 3372 2619 2062 1972 2116 3498 2152 2726 2421 2493 2600	C Sah 27 22 22 24 24 23 28 28 22 28 22 28 23 28 28 24 24 24 24 24 21 22	al Cotto RS iwal 747 296 296 296 405 337 302 359 255 397 305 397 405 405 405 405 405 405 405 405	n Reserved and a served at a s	CF RY 220 200 200 200 200 144 122 155 200 133 199 166 133	titute, R K 32 57 24 24 24 24 50 24 50 24 35 31 79 78 92	CRI FSD 1848 2534 3120 3044 2669 2282 1777 2328 2229 1894 2510 1466 2581 2364	NIA FSI 362 404 431 311 386 348 251 249 397 288 387 319 298 287	2008-20 B 0 4 3 7 2 1 2 1 2 1 3 0 3 4 2 9 2 7 2 2 2 7 2 0 3 8 2 5 1 1 2	OO9. CRS ehari 3570 2063 2655 3121 3175 2368 2458 2117 2529 2363 3104 2476 991 2440	3007 2739 2995 3033 2986 2553 2305 2270 2996 2534 2807 2608 2608 2261 2558
Sr. No. 1 2 3 4 5 6 7 8 9 100 11 122 133 14 15 15	6: Reaction Variet FH-942 RH-620 VH-255 CRSM-20 MG-6 CIM-557 GS-1 VH-277 NIAB-85 CRSM-38 VH-207 SLH-317 CIM-496 GS-14 CIM-554	n of CI ies	CCRI Multan 2883 2511 3117 2461 2708 2340 2355 1953 3038 2242 2552 2784 1350 2154 2905	Sucking CRS Multan 2028 1872 2574 2730 2496 1716 1466 1326 2106 3042 1872 2028 780 1794 1435	Pests a KV 32 38 39 40 35: 33 36 36 38 33 36 38 33 36 38 33 36 38 33 34 34 32 39 38 38	SC A VL B 65 3 56 3 56 3 47 2 72 3 88 3 18 3 77 2 41 2 56 2 80 2 80 2 65 2 47 2 20 2	orm dat IRS WP 166 013 523 133 366 079 756 679 979 823 899 746 946 713 933 933	CRS BWP 3659 2762 2673 3372 2619 2062 1972 2116 3498 2152 2726 2421 2493 2600 2636	C Sah 27 22 22 24 24 23 28 28 22 28 23 28 28 23 28 28 24 24 24 24 21 22 23 23 24 24 24 24 24 24 23 24 24 24 24 24 24 24 24 24 24 24 24 24	al Cotto RS iwal 747 296 296 296 405 337 302 359 255 397 405 405 405 405 405 405 405 405 405 405 405 405 405 405 405 405 423 423	n Resea RSS Jhang 4004 3108 3705 3885 4004 3168 3227 2510 3825 3425 2989 4005 2989 4005 2929 3706 3706 3766	CF RY 220 200 200 200 200 144 122 155 200 133 199 166 133 129 120 133	titute, (I (Y 32 57 24 24 24 24 50 24 50 24 50 24 50 24 50 70 78 50 24 50 78 78 78	CRI FSD 1848 2534 3120 3044 2669 2282 1777 2328 2229 1894 2510 1466 2581 2364	NIA FSI 362 404 431 311 386 348 251 249 397 288 387 319 298 287 249 287 249	2008-20 B 0 V 0 4 3 7 2 1 2 1 3 0 3 4 2 9 2 7 2 2 2 2 2 7 2 0 3 8 2 5 1 1 2 0 2	009. CRS ehari 3570 2063 2655 3121 3175 2368 2458 2117 2529 2363 3104 2476 991 2440 2691	3007 2739 2995 3033 2986 2553 2305 2270 2996 2534 2807 2608 2608 2261 2558 2551
Sr. No. 1 2 3 4 5 6 7 7 8 9 100 11 122 133 144 155 166 16	6: Reaction Variet FH-942 RH-620 VH-255 CRSM-20 MG-6 CIM-557 GS-1 VH-277 NIAB-85 CRSM-38 VH-207 SLH-317 CIM-496 GS-14 CIM-554 PB-900	n of CI ies	CCRI Multan 2883 2511 3117 2461 2708 2340 2355 1953 3038 2242 2552 2784 1350 2154 2154 2905 2037	Sucking CRS Multan 2028 1872 2574 2730 2496 1716 1466 1326 2106 3042 1872 2028 780 1794 1435 1716	Pests a PS KV 32 38 39 40 355 33 36 36 38 34 34 32 39 40 355 33 36 38 34 32 39 38 38 27	SC A VL B 65 3 56 3 56 3 47 2 72 3 88 3 18 3 77 2 41 2 56 2 80 2 80 2 65 2 47 2 20 2	orm dat IRS WP 166 013 523 133 366 079 756 679 979 823 899 746 946 713 933 746	CRS BWP 3659 2762 2673 3372 2619 2062 1972 2116 3498 2152 2726 2421 2423 2600 2636 2602	C Sah 277 222 24 24 23 28 18 222 28 23 28 28 23 28 24 24 24 24 21 22 23 23 21 22 23 24 24 24 24 24 24 24 24 24 24 24 24 24	al Cotto RS iwal 747 296 296 296 405 337 302 359 255 397 405 405 405 405 405 405 405 405 405 405 405 405 405 405 405 405 405 405 400 400	n Reserved and a second	CF RY 220 200 200 200 200 200 144 122 155 200 133 199 166 133 129 120 133	titute, RI 7K 32 57 24 24 24 24 50 24 50 24 50 24 50 24 50 70 78 78 49	CRI FSD 1848 2534 3120 3044 2669 2282 1777 2328 2229 1894 2510 1466 2581 2364 1689 2023	NIA FSI 362 404 431 311 386 348 251 249 397 288 387 319 298 287 287 249 261	2008-20 B 0 4 3 7 2 1 2 1 2 1 3 0 3 4 2 9 2 7 2 0 3 4 2 9 2 7 2 0 3 8 2 9 2 9 2 7 2 0 3 8 2 9 2 9 2 1 2 0 2 5 2	OO9. CRS ehari 8570 2063 2655 3121 3175 2368 2458 2117 2529 2363 3104 2476 991 2440 2691 2099	3007 2739 2995 3033 2986 2553 2305 2270 2996 2534 2807 2608 2261 2558 2551 2202
Sr. No 1 2 3 4 5 6 7 7 8 9 100 111 122 133 144 155 166 17	6: Reaction Variet FH-942 RH-620 VH-255 CRSM-20 MG-6 CIM-557 GS-1 VH-277 NIAB-85 CRSM-38 VH-207 SLH-317 CIM-496 GS-14 CIM-554 PB-900 NIAB-77	n of CI ies 007 2 3 5 5 4 7	CCRI Multan 2883 2511 3117 2461 2708 2340 2355 1953 3038 2242 2552 2784 1350 2154 2154 2905 2037 2841	Sucking CRS Multan 2028 1872 2574 2730 2496 1716 1466 1326 2106 3042 1872 2028 780 1794 1435 1716 2262	Pests a RV 32: 38 39: 40 35: 33 36 36: 38 33: 36: 38: 33: 34: 32: 39: 38: 39: 38: 39: 39: 39: 38: 39: 38: 39: 39: 39: 39:	SC A VL B 65 3 56 3 56 3 47 2 72 3 88 3 18 3 77 2 41 2 56 2 80 2 80 2 65 2 47 2 20 2 64 3	orm dan IRS WP 166 013 523 133 366 079 756 679 979 823 899 746 946 713 933 746 056 056	CRS BWP 3659 2762 2673 3372 2619 2062 1972 2116 3498 2152 2726 2421 2423 2600 2421 2493 2600 2636 2062 2834	C Sah 27 22 22 24 24 23 28 28 22 28 23 28 28 23 28 24 24 24 21 22 23 21 22 24 24 24 24 24 24 24 24 24 24 24 24	al Cotto RS iwal 747 296 296 296 405 337 302 359 255 397 405 255 397 405 173 255 2300 214	n Reserved and a served at a s	CF RY 220 200 200 200 200 200 144 122 200 133 199 166 133 129 129 133 129 129 133	titute, (K 32 57 24 24 24 24 24 50 24 50 24 50 24 35 51 79 78 92 78 49 36	CRI FSD 1848 2534 3120 3044 2669 2282 1777 2328 2229 1894 2510 1466 2581 2364 1689 2023 2164	NIA FSI 362 404 311 386 348 251 249 397 288 387 319 298 287 261 360	2008-20 B 0 4 3 7 2 1 2 1 3 0 3 4 2 9 2 7 2 0 3 4 2 9 2 7 2 2 2 7 2 0 3 8 2 9 2 7 2 0 3 8 2 9 2 1 2 0 2 5 2 1 2	OO9. CRS ehari 3570 2063 2655 3121 3175 2368 2458 2117 2529 2363 3104 2476 991 2440 2691 2099 2332	3007 2739 2995 3033 2986 2553 2305 2270 2996 2534 2807 2608 2261 2558 2261 2558 2551 2202 2761
Sr. No. 1 2 3 4 5 6 7 7 8 9 100 11 122 133 144 155 166 16	6: Reaction Variet FH-942 RH-620 VH-255 CRSM-20 MG-6 CIM-557 GS-1 VH-277 NIAB-85 CRSM-38 VH-207 SLH-317 CIM-496 GS-14 CIM-554 PB-900 NIAB-77 SITARA-	n of CI ies 007 2 3 5 5 4 7	CCRI Multan 2883 2511 3117 2461 2708 2340 2355 1953 3038 2242 2552 2784 1350 2154 2154 2905 2037 2841 2420	Sucking CRS Multan 2028 1872 2574 2730 2496 1716 1466 1326 2106 3042 1872 2028 780 1794 1435 1716 2262 1248	Pests a RV 32: 38 39: 40 35: 33 36 36: 38 33: 36: 38: 33: 34: 39: 38: 39: 39: 39: 39: 39: 38: 39: 39: 38: 39: 39: 39: 39: 39: 39: 39: 39: 39: 39: 39: 39: 34:	SC A VL B 65 3 56 3 56 3 47 2 72 3 88 3 18 3 77 2 41 2 56 2 80 2 80 2 65 2 47 2 20 2 64 3 62 2	orm dai IRS WP 166 013 523 133 366 079 756 679 979 823 899 746 946 713 933 746 056 656	CRS BWP 3659 2762 2673 3372 2619 2062 1972 2116 3498 2152 2726 2421 2423 2600 2421 2493 2600 2636 2062 2834 3426	C Sah 27 22 24 23 24 23 24 23 24 23 24 23 24 23 24 23 24 21 22 24 21 22 23 19 22 19	al Cotto RS iwal 747 296 296 405 337 302 359 255 397 405 255 255 397 405 223 000 214 440	n Reserved and a served at a s	CF RY 223 200 200 200 200 144 129 155 200 133 199 166 133 199 166 133 129 129 136 147 147	titute, XI YK 32 57 24 24 24 24 24 50 24 50 24 35 31 79 78 92 78 49 36 21	CRI FSD 1848 2534 3120 3044 2669 2282 1777 2328 2229 1894 2510 1466 2581 2364 1689 2023 2164 1724	NIA FSI 362 404 311 386 348 251 249 397 288 387 319 298 287 249 337 319 298 387 319 298 387 338	2008-20 B 0 4 3 7 2 1 2 1 2 1 3 0 3 4 2 9 2 7 2 0 3 4 2 9 2 7 2 0 3 8 2 5 2 1 2 0 2 5 2 1 2 8 1	O09. CRS ehari 8570 2063 2655 3121 3175 2368 2458 2117 2529 2363 3104 2476 991 2440 6991 2332 9955	3007 2739 2995 3033 2986 2553 2305 2270 2996 2534 2807 2608 2261 2558 2261 2558 2551 2202 2761 2443
Sr. No 1 2 3 4 5 6 7 7 8 9 100 111 122 133 144 155 166 177 188 180	6: Reaction Variet FH-942 RH-620 VH-255 CRSM-20 MG-6 CIM-557 GS-1 VH-277 NIAB-85 CRSM-38 VH-207 SLH-317 CIM-496 GS-14 CIM-554 PB-900 NIAB-77 SITARA- A-ONE	n of CI ies 007 2 3 5 5 4 7	CCRI Multan 2883 2511 3117 2461 2708 2340 2355 1953 3038 2242 2552 2784 1350 2154 2154 2905 2037 2841	Sucking CRS Multan 2028 1872 2574 2730 2496 1716 1466 1326 2106 3042 1872 2028 780 1794 1435 1716 2262	Pests a RV 32: 38 39: 40 35: 33 36 36: 38 33: 36: 38: 33: 34: 32: 39: 38: 39: 38: 39: 39: 39: 38: 39: 38: 39: 39: 39: 39:	SC A VL B 65 3 56 3 47 2 72 3 88 3 18 3 77 2 41 2 56 2 54 2 80 2 65 2 47 2 20 2 64 3 62 2 26 2 26 2 26 2 26 2 26 2	orm dan IRS WP 166 013 523 133 366 079 756 679 979 823 899 746 946 713 933 746 056 056	CRS BWP 3659 2762 2673 3372 2619 2062 1972 2116 3498 2152 2726 2421 2423 2600 2421 2493 2600 2636 2062 2834	C Sah 277 222 244 233 246 242 245 242 242 242 242 242 242 242 242	al Cotto RS iwal 747 296 296 296 405 337 302 359 255 397 405 255 397 405 173 255 2300 214	n Reserved and a served at a s	CF RY 220 200 200 200 200 200 144 122 200 133 199 166 133 129 129 133 129 129 133	titute, R K 32 57 24 24 24 24 24 50 24 50 24 35 31 79 78 92 78 49 36 21 38	CRI FSD 1848 2534 3120 3044 2669 2282 1777 2328 2229 1894 2510 1466 2581 2364 1689 2023 2164	NIA FSI 362 404 311 386 348 251 249 397 288 387 319 298 287 261 360	2008-20 B 0 4 3 7 2 1 2 1 2 1 3 0 3 4 2 9 2 7 2 2 2 7 2 0 3 8 2 5 1 1 2 5 2 1 2 8 1 0 3	OO9. CRS ehari 3570 2063 2655 3121 3175 2368 2458 2117 2529 2363 3104 2476 991 2440 2691 2099 2332	3007 2739 2995 3033 2986 2553 2305 2270 2996 2534 2807 2608 2261 2558 2261 2558 2551 2202 2761
Sr. No 1 2 3 4 5 6 7 8 9 100 111 122 133 144 155 166 177 188 199 19	6: Reaction Variet FH-942 RH-620 VH-255 CRSM-20 MG-6 CIM-557 GS-1 VH-277 NIAB-85 CRSM-38 VH-207 SLH-317 CIM-496 GS-14 CIM-554 PB-900 NIAB-77 SITARA- A-ONE	n of CI ies 007 2 3 5 5 4 7	CCRI Multan 2883 2511 3117 2461 2708 2340 2355 1953 3038 2242 2552 2784 1350 2154 2154 2905 2037 2841 2420 2592	Sucking CRS Multan 2028 1872 2574 2730 2496 1716 1466 1326 2106 3042 1872 2028 780 1794 1435 1716 2262 1248 1638	Pests a RV 32: 38 39: 40 35: 33 36 36: 38 33: 36: 38: 33: 34: 39: 38: 39: 38: 39: 38: 39: 38: 39: 38: 37: 39: 30: 30: <t< td=""><td>SC A VL B 65 3 56 3 56 3 47 2 72 3 88 3 18 3 77 2 41 2 56 2 80 2 80 2 65 2 26 2 64 3 62 2 26 2 64 3 62 2 26 2 64 3 62 2 26 2 64 3 62 2 26 2 26 2 26 2 26 2 26 2 26 2 26 2</td><td>orm dat IRS WP 166 013 523 133 366 079 756 679 979 823 899 746 933 746 056 656 6723 1</td><td>CRS BWP 3659 2762 2673 3372 2619 2062 1972 2116 3498 2152 2726 2421 2423 2600 2421 2493 2600 2636 2062 2834 3426 4484</td><td>C Sah 27 22 24 23 24 23 24 23 24 23 24 23 24 23 24 23 24 21 22 23 19 22 28 29 21 22 23 19 22 28 29 21 22 23 19 28 26</td><td>al Cotto RS iwal 747 296 296 405 337 302 359 255 397 405 255 397 405 214 240 384</td><td>n Reserved and a served at a s</td><td>CF RY 223 200 200 200 200 144 129 155 200 133 199 166 133 129 129 166 133 129 129 1129 1129 1129 1129 1129 11</td><td>titute, XI XK 32 57 24 24 24 24 24 24 50 24 50 24 35 31 79 78 92 78 49 36 21 38 22 24 24 24 24 24 24 24 24 24</td><td>CRI FSD 1848 2534 3120 3044 2669 2282 1777 2328 2229 1894 2510 1466 2581 2364 1689 2023 2164 1724 3137</td><td>NIA FSI 362 404 311 386 348 251 249 397 288 387 319 298 287 249 3338 497</td><td>2008-20 B 0 4 3 7 2 1 2 1 3 0 3 4 2 9 2 7 2 2 2 7 2 2 2 7 2 2 2 7 2 2 2 7 2 2 2 7 2 2 2 3 3 2 5 1 1 2 2 1 2 2 8 1 2 8 1 2 0 3 3 6 3 3</td><td>O09. CRS ehari 8570 2063 2655 3121 3175 2368 2458 2117 2529 2363 3104 2476 991 2440 2691 2099 2332 9955 8875</td><td>3007 2739 2995 3033 2986 2553 2305 2270 2996 2534 2807 2608 2261 2558 2261 2558 2551 2202 2761 2443 3247</td></t<>	SC A VL B 65 3 56 3 56 3 47 2 72 3 88 3 18 3 77 2 41 2 56 2 80 2 80 2 65 2 26 2 64 3 62 2 26 2 64 3 62 2 26 2 64 3 62 2 26 2 64 3 62 2 26 2 26 2 26 2 26 2 26 2 26 2 26 2	orm dat IRS WP 166 013 523 133 366 079 756 679 979 823 899 746 933 746 056 656 6723 1	CRS BWP 3659 2762 2673 3372 2619 2062 1972 2116 3498 2152 2726 2421 2423 2600 2421 2493 2600 2636 2062 2834 3426 4484	C Sah 27 22 24 23 24 23 24 23 24 23 24 23 24 23 24 23 24 21 22 23 19 22 28 29 21 22 23 19 22 28 29 21 22 23 19 28 26	al Cotto RS iwal 747 296 296 405 337 302 359 255 397 405 255 397 405 214 240 384	n Reserved and a served at a s	CF RY 223 200 200 200 200 144 129 155 200 133 199 166 133 129 129 166 133 129 129 1129 1129 1129 1129 1129 11	titute, XI XK 32 57 24 24 24 24 24 24 50 24 50 24 35 31 79 78 92 78 49 36 21 38 22 24 24 24 24 24 24 24 24 24	CRI FSD 1848 2534 3120 3044 2669 2282 1777 2328 2229 1894 2510 1466 2581 2364 1689 2023 2164 1724 3137	NIA FSI 362 404 311 386 348 251 249 397 288 387 319 298 287 249 3338 497	2008-20 B 0 4 3 7 2 1 2 1 3 0 3 4 2 9 2 7 2 2 2 7 2 2 2 7 2 2 2 7 2 2 2 7 2 2 2 7 2 2 2 3 3 2 5 1 1 2 2 1 2 2 8 1 2 8 1 2 0 3 3 6 3 3	O09. CRS ehari 8570 2063 2655 3121 3175 2368 2458 2117 2529 2363 3104 2476 991 2440 2691 2099 2332 9955 8875	3007 2739 2995 3033 2986 2553 2305 2270 2996 2534 2807 2608 2261 2558 2261 2558 2551 2202 2761 2443 3247
Sr. No 1 2 3 4 5 6 7 8 9 100 111 122 133 144 155 166 177 188 199 200 211 222	6: Reaction Variet FH-942 RH-620 VH-255 CRSM-20 MG-6 CIM-557 GS-1 VH-277 NIAB-85 CRSM-38 VH-207 SLH-317 CIM-496 GS-14 CIM-554 PB-900 NIAB-77 SITARA- A-ONE FH-941 BH-172 FH-2015	n of CI ies 007 2 3 3 4 5 4 7 008	CCRI Multan 2883 2511 3117 2461 2708 2340 2355 1953 3038 2242 2552 2784 1350 2154 2552 2784 1350 2154 2037 2841 2420 2592 3280 2870 3249	Sucking CRS Multan 2028 1872 2574 2730 2496 1716 1466 1326 2106 3042 1872 2028 780 1794 1435 1716 2262 1248 1638 2964	Pests a RV 32: 38 39: 40 35: 33 36 36 38 33: 36 38 33: 34: 39: 38 39: 38 39: 38 39: 38: 37: 39: 39: 39: 39: 39: 39: 39: 39: 31: 32: 33: 34: 41: 42:	SC A VL B 65 3 56 3 56 3 47 2 72 3 88 3 18 3 77 2 41 2 56 2 80 2 80 2 65 2 47 2 26 2 64 3 62 2 26 2 64 3 62 2 26 2 26 2 64 3 62 2 26 2 69 3 41 2 85 3	orm dar IRS WP 166 013 523 133 366 079 756 679 979 823 899 746 946 713 933 746 056 656 723 233 756 333	CRS BWP 3659 2762 2673 3372 2619 2062 1972 2116 3498 2152 2726 2421 2493 2600 2636 2062 2834 3426 4484 3318 2367 2924	C Sah 277 222 244 233 246 242 242 242 242 242 242 242 242 242	a) Cotto RS iwal 747 296 296 405 337 302 359 255 397 405 255 397 405 214 40 84 579 405 310	n Reser RSS Jhang 4004 3108 3705 3885 4004 3168 3227 2510 3825 3425 2989 4005 2929 3706 3766 3048 3467 3228 3347 3586	CF RY 223 200 200 200 200 144 129 155 200 133 199 166 133 129 129 166 133 129 129 1129 1129 1129 1129 1129 11	titute, RI K 32 57 24 24 24 24 24 50 24 50 24 50 24 35 31 79 78 92 78 49 36 21 38 22 50 24 50 50 50 50 50 50 50 50 50 50	CRI FSD 1848 2534 3120 3044 2669 2282 1777 2328 2229 1894 2510 1466 2581 2364 1689 2023 2164 1724 3137 3038 1496 2492	NIA FSI 362 404 431 311 386 348 251 249 397 288 387 319 298 287 287 287 287 287 287 287 287 287 28	2008-20 B 0 4 33 7 2 1 2 1 3 0 3 4 2 9 2 7 2 2 2 7 2 0 3 8 2 5 2 1 2 0 2 5 2 1 2 0 3 6 3 3 3	009. CRS ehari 8570 2063 2655 3121 3175 2368 2458 2117 2529 2363 3104 2476 991 2332 9955 8875 3911	3007 2739 2995 3033 2986 2553 2305 2270 2996 2534 2807 2608 2261 2558 2551 2202 2761 2558 2551 2202 2761 2443 3247 3326 2691 2973
Sr. No 1 2 3 4 5 6 7 8 9 100 111 122 133 144 155 166 177 188 199 200 211 222 233 243	6: Reaction Variet FH-942 RH-620 VH-255 CRSM-20 MG-6 CIM-557 GS-1 VH-277 NIAB-85 CRSM-38 VH-207 SLH-317 CIM-496 GS-14 CIM-554 PB-900 NIAB-77 SITARA- A-ONE FH-941 BH-172 FH-2015 NIAB-20	n of CI ies 007 2 3 3 4 5 4 7 008	CCRI Multan 2883 2511 3117 2461 2708 2340 2355 1953 3038 2242 2552 2784 1350 2154 2037 2154 2037 2154 2037 2841 2420 2592 3280 2870 3249 2704	Sucking CRS Multan 2028 1872 2574 2730 2496 1716 1466 1326 2106 3042 1872 2028 780 1794 1435 1716 2262 1248 1638 2964 2574 2028	Pests a RV 32: 38 39: 40 35: 36 36 36 36 38 333 36 38 334 34: 39: 38 277 39: 34: 41: 42: 36: 44: 34:	SC A VL B 65 3 56 3 47 2 72 3 88 3 18 3 77 2 41 2 56 2 80 2 80 2 65 2 477 2 26 2 64 3 62 2 69 3 41 2 86 2 97 2	orm dar IRS WP 166 013 523 133 366 079 756 679 979 823 899 746 946 713 933 746 056 656 723 233 756 333 743	CRS BWP 3659 2762 2673 3372 2619 2062 1972 2116 3498 2152 2726 2421 2493 2600 2636 2062 2834 3426 4484 3318 2367 2924 2385	C Sah 27 22 24 23 24 23 24 23 24 23 24 23 24 23 24 21 22 23 19 24 25 26 27 28 29 21 22 23 19 26 26 26 26 26 26 24 23 24	al Cotto RS iwal 747 296 296 405 337 302 359 255 397 405 273 255 397 405 214 940 884 579 405 310 87	n Rese: RSS Jhang 4004 3108 3705 3885 4004 3168 3227 2510 3825 3425 2989 4005 2929 3706 3766 3048 3467 3228 3347 3586 3945 4184 3825	CF RY 223 200 200 200 200 200 200 144 129 200 200 200 200 200 200 200 200 200 2	titute, RI K 32 57 24 24 24 24 24 50 24 50 24 35 31 79 78 92 78 49 36 21 38 22 50 22 21 38 22 21 22 21 22 21 22 21 22 22	CRI FSD 1848 2534 3120 3044 2669 2282 1777 2328 2229 1894 2510 1466 2581 2364 1689 2023 2164 1724 3137 3038 1496 2492 2199	NIA FSI 362 404 311 386 348 251 249 397 288 387 319 298 287 261 360 338 497 458 287 360 338 497 458 287 360 3366	2008-20 B 0 V V 4 33 7 2 1 2 1 3 0 3 4 2 9 2 7 2 2 2 7 2 0 3 8 2 5 2 1 2 0 2 5 2 1 2 0 3 6 3 3 3 7 2 0 2 1 2 0 3 3 3 3 3 3 3 2 2 0 2 0 2	009. CRS ehari 8570 2063 2655 3121 3175 2368 2458 2117 2529 2363 3104 2476 991 2332 9955 3875 3911 3121 2368 2171	3007 2739 2995 3033 2986 2553 2305 2270 2996 2534 2807 2608 2261 2558 2261 2558 2551 2202 2761 2443 3247 3326 2691 2973 2663
Sr. No. 1 2 3 4 5 6 7 7 8 9 100 111 122 133 144 155 166 177 188 199 200 211 222 233 244 140	6: Reaction Variet FH-942 RH-620 VH-255 CRSM-20 MG-6 CIM-557 GS-1 VH-277 NIAB-85 CRSM-33 VH-207 SLH-317 CIM-490 GS-14 CIM-554 PB-900 NIAB-77 SITARA- A-ONE FH-941 BH-172 FH-2015 NIAB-20 FH-113	n of CI ies 007 2 3 3 4 5 4 7 008	CCRI Multan 2883 2511 3117 2461 2708 2340 2355 1953 3038 2242 2552 2784 1350 2154 2037 2154 2037 2841 2420 2592 3280 2870 3249 2704 2685	Sucking CRS Multan 2028 1872 2574 2730 2496 1716 1466 1326 2106 3042 1872 2028 780 1794 1435 1716 2262 1248 1638 2964 2574 2028 2496 2964 2964 2964 2964 2964	Spests 2 PS KV 32: 38 39: 40 35: 33: 36: 36: 36: 38: 33: 34: 32: 39: 38: 27: 39: 34: 41: 42: 36: 44: 34:	SC A VL B 65 3 56 3 56 3 47 2 72 3 88 3 18 3 77 2 41 2 56 2 80 2 80 2 65 2 64 3 62 2 64 3 62 2 64 3 62 2 69 3 41 2 26 2 69 3 41 2 85 3 97 2 26 2	orm dar IRS WP 166 013 523 133 366 079 756 679 979 823 899 746 946 713 933 746 056 656 723 233 756 333 743 923	CRS BWP 3659 2762 2673 3372 2619 2062 1972 2116 3498 2152 2726 2421 2493 2600 2636 2062 2834 3426 4484 3318 2367 2924 2385 3444	C Sah 27 22 22 24 24 23 28 28 22 28 28 28 28 28 28 28 28 28 28	al Cotto RS iwal 747 296 296 405 337 302 359 255 397 405 397 405 255 323 900 214 940 884 579 405 310 87 542	n Rese: RSS Jhang 4004 3108 3705 3885 4004 3168 3227 2510 3825 3425 2989 4005 2929 3706 3766 3766 3048 3467 3228 3347 3586 3945 4184 3825 3604	CF RY 223 200 200 200 200 200 144 129 200 133 199 166 133 129 166 133 129 166 133 129 166 133 129 166 133 129 166 133 129 166 133 129 166 133 129 166 133 129 166 133 129 166 133 129 129 129 129 129 129 129 129 129 129	titute, RI (K 32 57 24 24 24 24 24 24 50 24 35 31 79 78 92 78 92 78 49 36 21 38 22 50 22 21 50 22 50 23 50 79 78 50 22 50 79 78 50 22 50 79 78 50 79 78 50 79 78 50 79 78 50 79 78 50 79 78 50 79 78 50 79 78 50 79 78 50 79 78 50 79 78 50 79 78 50 78 50 79 78 50 78 50 78 50 78 78 50 78 50 78 50 78 50 78 78 50 78 78 78 78 78 78 78 78 78 78	CRI FSD 1848 2534 3120 3044 2669 2282 1777 2328 2229 1894 2510 1466 2581 2364 1689 2023 2164 1724 3137 3038 1496 2492 2199 2504	NIA FSI 362 404 431 311 386 348 251 249 397 288 387 319 298 287 261 360 338 497 458 287 360 336 356	2008-20 B 0 V V 4 33 7 2 1 2 1 3 0 3 4 2 9 2 7 2 2 2 7 2 0 3 8 2 5 2 1 2 0 2 5 2 1 2 0 3 6 3 3 3 7 2 0 2 1 2 0 3 3 3 3 3 7 2 0 2 7 3	OO9. CRS ehari 8570 2063 2655 3121 3175 2368 2458 2117 2529 2363 3104 2476 991 2332 995 3875 8911 3121 2368 2171 3767	3007 2739 2995 3033 2986 2553 2305 2270 2996 2534 2807 2608 2261 2558 2261 2558 2551 2202 2761 2443 3247 3326 2691 2973 2663 3108
Sr. No. 1 2 3 4 5 6 7 7 8 9 100 111 122 133 144 155 166 177 188 199 200 211 222 233 244 255	6: Reaction Variet FH-942 RH-620 VH-255 CRSM-20 MG-6 CIM-557 GS-1 VH-277 NIAB-85 CRSM-33 VH-207 SLH-317 CIM-490 GS-14 CIM-554 PB-900 NIAB-77 SITARA- A-ONE FH-941 BH-172 FH-2015 NIAB-20 FH-113 NN-3	n of CI ies 007 2 3 3 5 4 5 7 008 5 08	CCRI Multan 2883 2511 3117 2461 2708 2340 2355 1953 3038 2242 2552 2784 1350 2154 2037 2841 2420 2592 3280 2870 3249 2704 2685 2912	Sucking CRS Multan 2028 1872 2574 2730 2496 1716 1466 1326 2106 3042 1872 2028 780 1794 1435 1716 2262 1248 1638 2964 2574 2028 2496 2964 2964 2964 2964 2964 2964 2964	Spests 2 PS KV 32: 38 39: 40 35: 33 36 36 36 38 331 34: 32: 39: 38 27: 39: 34: 41: 42: 36: 44: 34: 34: 41: 35:	SC A VL B 65 3 56 3 56 3 47 2 72 3 88 3 18 3 77 2 41 2 56 2 80 2 80 2 65 2 64 3 62 2 64 3 62 2 69 3 41 2 26 2 69 3 41 2 26 2 69 3 41 2 85 3 97 2 26 2 33 3	orm dat IRS WP 166 013 523 133 366 079 756 6 679 9 979 823 899 746 946 7 746 9 933 7 746 0 656 7 733 7 233 7 756 333 743 9 923 0	CRS BWP 3659 2762 2673 3372 2619 2062 1972 2116 3498 2152 2726 2421 2493 2600 2636 2062 2834 3426 4484 3318 2367 2924 2385 3444 2385	C Sah 27 22 24 23 24 23 24 23 24 23 24 23 24 23 24 21 22 23 16 22 23 16 22 23 16 24 25 25	al Cotto RS iwal 747 296 296 447 296 296 405 337 302 359 255 397 405 273 255 300 214 940 884 579 405 310 .87 542	n Rese: RSS Jhang 4004 3108 3705 3885 4004 3168 3227 2510 3825 3425 2989 4005 2989 3706 3766 3766 3048 3467 3228 3347 3586 3945 4184 3825 3604 3527	CF RY 223 200 200 200 200 200 144 122 155 200 133 199 166 133 122 122 166 144 149 199 177 155 177 177 155 177 144 200 200 200 200 200 200 200 200 200 2	titute, (K 32 57 24 24 24 24 24 24 50 24 50 24 35 31 79 78 92 78 92 78 49 36 21 50 22 21 50 22 21 50 22 21 50 79 78 50 22 50 79 78 50 22 50 79 78 50 79 78 50 79 78 78 79 78 78 78 78 79 78 78 78 79 78 79 78 78 79 78 78 79 78 78 79 78 78 78 79 78 78 79 78 78 78 78 78 79 78 78 78 78 79 78 78 78 78 78 78 78 79 78 78 78 78 78 78 78 78 78 78	CRI FSD 1848 2534 3120 3044 2669 2282 1777 2328 2229 1894 2510 1466 2581 2364 1689 2023 2164 1724 3137 3038 1496 2492 2199 2504 2170	NIA FSI 362 404 431 311 386 348 251 249 397 288 387 319 298 287 261 360 338 497 458 287 360 338 497 458 287 360 366 356	2008-20 B 0 V V 4 33 7 2 1 2 1 2 2 2 7 2 2 2 7 2 2 2 7 2 2 2 7 2 0 3 8 2 1 2 0 2 5 2 1 2 0 3 3 3 3 3 7 2 0 2 7 2 0 2 7 3 9 2	O09. CRS ehari 8570 2063 2655 3121 3175 2368 2458 2117 2529 2363 3104 2476 991 2332 1955 3875 3911 3121 2368 2171 3767 2458	3007 2739 2995 3033 2986 2553 2305 2270 2996 2534 2807 2608 2261 2558 2551 2202 2761 2558 2551 2202 2761 2443 3247 3326 2691 2973 2663 3108 2757
Sr. No. 1 2 3 4 5 6 7 7 8 9 100 111 122 133 144 155 166 177 188 199 200 211 222 233 244 255 266 26	6: Reaction Variet FH-942 RH-620 VH-255 CRSM-20 MG-6 CIM-557 GS-1 VH-277 NIAB-85 CRSM-38 VH-207 SLH-317 CIM-490 GS-14 CIM-554 PB-900 NIAB-77 SITARA- A-ONE FH-941 BH-172 FH-2015 NIAB-20 FH-113 NN-3	n of CI ies	CCRI Multan 2883 2511 3117 2461 2708 2340 2355 1953 3038 2242 2552 2784 1350 2154 2037 2420 2592 3280 2870 3249 2704 2685 2912 3566	Sucking CRS Multan 2028 1872 2574 2730 2496 1716 1466 1326 2106 3042 1872 2028 780 1794 1435 1716 2262 1248 1638 2964 2574 2028 2496 2964 2964 2964 2964 2950 3151	Spests a PS KV 32: 38 39: 40 35: 33 36 36 36 38 331 34: 32: 39: 38 27: 39: 34: 41: 42: 36: 44: 34: 41: 35: 41:	SC A VL B 65 3 56 3 56 3 47 2 72 3 88 3 18 3 77 2 41 2 56 2 54 2 80 2 65 2 64 3 62 2 64 3 62 2 64 3 67 2 26 2 69 3 41 2 26 2 27 2 285 3 977 2 26 2 33 3 26 3	orm dar IRS WP 166 013 523 133 366 079 756 679 979 823 899 746 946 713 933 746 933 746 056 656 723 233 756 333 743 923 089 532	CRS BWP 3659 2762 2673 3372 2619 2062 1972 2116 3498 2152 2726 2421 2493 2600 2636 2062 2834 3426 4484 3318 2367 2924 2385 3444 2385 3444 2780 3336	C Sah 27 22 24 23 24 23 24 23 24 23 24 23 24 23 24 21 22 23 16 22 23 16 22 23 16 24 25 25 25	al Cotto RS iwal 747 296 296 405 337 302 359 255 397 405 397 405 255 232 000 214 040 384 579 405 310 .87 542 542 542	n Rese: RSS Jhang 4004 3108 3705 3885 4004 3168 3227 2510 3825 3425 2989 4005 2929 3706 3766 3766 3048 3467 3228 34467 3228 3447 3586 3945 4184 3825 3604 3527 3825	CF RY 223 200 201 202 201 144 122 201 144 122 133 193 16 133 122 133 122 133 122 166 142 151 177 152 177 153 177 142 200 166 167 177 151 177 142 200 166	titute, (K 32 57 24 24 24 24 24 24 50 24 50 24 35 31 79 78 92 78 92 78 49 36 21 50 22 21 50 22 21 50 22 21 50 79 78 50 22 50 79 78 50 22 50 79 78 50 79 78 50 79 78 78 79 78 78 78 78 79 78 78 78 79 78 79 78 78 79 78 78 79 78 78 79 78 78 78 79 78 78 79 78 78 78 78 78 79 78 78 78 78 79 78 78 78 78 78 78 78 79 78 78 78 78 78 78 78 78 78 78	CRI FSD 1848 2534 3120 3044 2669 2282 1777 2328 2229 1894 2510 1466 2581 2364 1689 2023 2164 1724 3137 3038 1496 2492 2199 2504	NIA FSI 362 404 431 311 386 348 251 249 397 288 387 319 298 287 261 360 338 497 458 287 360 336 356	2008-20 B 0 V V 4 33 7 2 1 2 1 2 2 2 7 2 2 2 7 2 2 2 7 2 2 2 7 2 0 3 8 2 1 2 0 2 5 2 1 2 0 3 3 3 3 3 7 2 0 2 7 2 0 2 7 3 9 2	OO9. CRS ehari 8570 2063 2655 3121 3175 2368 2458 2117 2529 2363 3104 2476 991 2332 995 3875 8911 3121 2368 2171 3767	3007 2739 2995 3033 2986 2553 2305 2270 2996 2534 2807 2608 2261 2558 2261 2558 2551 2202 2761 2443 3247 3326 2691 2973 2663 3108

NCVT	CLCuD (%)									
Strains	30*	45	60	75	90					
	(25.06.08)**	(08.07.08)	(23.07.08)	(08.08.08)	(25.08.08)					
FH-942	12.38	43.50	79.75	90.47	90.47					
PB-900	12.78	59.37	83.87	88.20	88.20					
NIAB-777	3.26	39.65	76.36	96.34	96.34					
CIM-496	7.14	43.85	83.23	95.58	100.00					
GH-102	12.01	38.88	85.39	91.93	91.93					
CRIS-129	36.50	51.29	80.27	80.67	80.67					
CRSM-2007	5.93	21.16	63.64	80.90	80.90					
GS-1	3.41	30.56	74.91	91.43	91.43					
BH-172	2.16	17.79	61.27	83.27	83.27					
VH-278	6.90	43.47	90.60	95.95	100.00					
CRSM-38	2.40	27.62	56.73	65.92	65.92					
NIAB-852	7.37	50.51	78.41	92.46	92.46					
SLH-317	4.78	25.43	68.10	84.15	84.15					
NN-3	2.67	13.25	29.07	41.20	41.20					
FH-941	11.89	50.78	86.69	96.66	100.00					
TH-06/2	21.92	72.50	83.41	90.42	90.42					
CIM-557	2.90	17.26	50.72	67.84	67.84					
NIA-78	16.79	52.34	91.31	95.88	95.88					
GS-14	6.57	66.18	95.67	100.00	100.00					
CIM-554	8.50	49.36	81.31	85.98	85.98					

*= Days after planting ** = Observation Dates

 Table 8: Provincial Coordinated Cotton Trials in Punjab during 2008-09 (Yield kg ha⁻¹).

Year	Trial	CIM-554	MNH-786	CIM-534	CIM-496
		Pla	nt height (cms)	· ·	
2007	VT-2	170	144	140	145
2008	VT-2	185	126	136	105
	Average	178	135	138	125
		No. of mono	podial branches plant ⁻¹ .		
2007	VT-2	1.4	3.6	2.3	2.3
2008	VT-2	2.1	2.5	1.8	1.1
	Average	1.8	3.1	2.1	1.7
		No. of symp	odial branches plant ⁻¹ .		
2007	VT-2	26	24	2.6	26
2008	VT-2	28	18	24	21
	Average	27	21	25	24
		Avera	ge boll weight (g).		
2007	VT-2	4.0	4.2	3.5	3.5
2008	VT-2	3.9	4.0	2.9	3.2
Average		4.0	4.1	3.1	3.4
		Numb	er ob bolls plant ⁻¹ .		
2007	VT-2	30	32	40	31
2008	VT-2	27	20	30	20
	Average	29	26	35	26

Sr.	Characters	Varieties						
No.		CIM- 554	MNH- 786	CIM-534	CIM-496	NIAB-111	CIM-506	
1.	Yield of seed cotton (kg ha-1)	4241	3276	3437	3449	3882	3344	
2.	Ginning out turn (%)	41.5	37.4	40.8	41.3	36.5	38.7	
3.	Staple length (mm)	28.5	27.4	28.8	29.1	29.3	28.5	
4.	Micronaire value (µg inch-1)	4.7	5.2	4.6	4.8	4.3	4.7	
5.	Fibre strength (tppsi)	96.8	100.9	97.6	91.7	90.8	101.1	
6.	Maturity ratio	1.04	1.04	1.02	1.04	1.01	1.04	
7.	Uniformity ratio (%)	48.3	47.6	48.1	48.1	47.9	48.0	

Table 10: Summary of salient characteristics of CIM-554

Except where otherwise noted, this item's licence is described as © The Author(s) 2021. Open Access. This item is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if changes were made. The images or other third party material in this it are included in the article's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.