

recorded in Pb. Hybrid followed by PSG-2-6-1. Acidity was found to be maximum in Punjab hybrid alongwith best flavour. Both above varieties have shown excellent quality performance in respect of biochemical tests.

Nitrate and nitrite contents in leafy vegetables (PAU & TNAU)

Analyses of the leaves of above vegetables have shown a minimum content of nitrite and nitrates in different varieties of cauliflower, cabbage and radish. In cauliflower 74-6-C have shown minimum contents of NO_2 and NO_3 content of 5 ppm were found in Punjab Safed and NO_3 in Pb. Ageti (1325/m)

- Varietal trial on processing of peas
- Seven advance lines of peas namely, PB-29(B) 14, RPD 9-1(P), PB -29(B) (18-1), RPC-13-3-7-6, FC-2, 32-1-1-9 were taken for processing qualities at IIHR. Sensory tests were conducted and chemical composition worked out.
- On the basis of frozen storage test, pea lines namely, FC-2 and 32-1-1-9 were found best for chemical composition and sensory qualities. Both the varieties differ in grains and shelling percentage to those of other pea lines even in moisture % ash, chlorophyll II contents, ascorbic acid and different forms of sucrose.
- After storage of pea lines at 18° for 6 months, an increase in moisture and ash content have been noted while reduction in chlorophyll content, vitamin C and sugars have been reported in the annual report.

XV-Workshop

Venue : Banaras Hindu University, Varanasi


Date : 25th-28th March, 1996

Collection, Evaluation and Conservation of Vegetable Germplasm

Some promising lines were identified and reported

Promising Lines Identified

Crop	Source	Notable/Promising lines
Amaranths	Coimbatore	A-115, A-145, A-79, A-58
Brinjal	Bhubaneswar	G-12, G-13, P-4, G-8, G-10, G-11
	Ludhiana	G-13, AB-2
	NBPGR	IC-74207, 74205, 137769, EC-282490
Chillies	Pantnagar	IC-113002, PB-17, PB-26
	Lam	LIC-13, LCA-315, G-4, LCA-305, LCA-235 (res.to CMV), LIC-7, LIC-9, EC-12275, EC-120942 (Tol. to excess moisture)
	Akola	AKS-BR-89-41, AKS- BC-89-44
	Coimbatore	CA-136, CA-86, CA-94
	NBPGR	IC- 119603, 119617, EC-339042, PBC-122
Capsicum	Bathinda	PBC-142(Leaf curl virus)
	Solan	Capsicum-2
Carrot	Hisar	HC-100, HC-256 (red colour)
Cauliflower	Sabour	91-2, 91-1(Early), 81-5,91-1(mid)
Cucumber	Solan	Chamba Local
	Rahuri	RHRC-2, RHRC-1

Crop	Source	Notable/Promising lines	
French bean	IIHR	IIHR-1121, IHR-1105, IHR-1106	
	NBPGR	IC-1783, BD-23	
	Solan	EC-43035 (Bush type), IC-94469-1 (Pole type)	
	Pantnagar	P6-DL, P-51, L-P-6, CL	
	Katrain	HAV-3	
Muskmelon	Ludhiana	MR-1, Punjab Rasila, Makua, Novogibirish, Silver world (completely free from viral diseases)	
Okra	IIHR	IHR-169, IHR-154, IHR-157, IHR-120	
Onion	NHRDF	No.799, Bangalore Rose, Jalgaon, Vari, No.5, Barwad (Red Type), Phule Safed, No. 569.	
	Ludhiana	Early Stopen Yellow, Early Stofen Red.	
Pointed gourd	Faizabad	FP-110, 112, 118, 207	
	Kalyani	Sandhamoni	
Pumpkin	Faizabad	NDPK - 130, 131	
Garden Pea	Jabalpur	JP-180, JP-501, JP Batri Brown 384	
	Pantnagar	TIO, P-388, 1, 501	
	NBPGR	NIC-1122231, EC-269288	
Tomato	Bangalore	IHR-2034, IHR-2030, IHR-2028	
	Bathinda	KM1, KM2, IC-6, Sel-148-6(Mosaic complex)	
	Ludhiana	L-633 (Lowest Borer incidence)	
	Coimbatore	<i>L. hirsutum</i> , <i>L. hirsutum</i> f. <i>glabratum</i> (res. to Leaf curl viruses)	
	Pantnagar	AC-325, 326 (Hot set), AC-142, 284 (Cold set) AC-400, 441, (TMV, LCV)	
	NBPGR	EC-378645, 368838, 378639, 377983, 378833, 368830, 368855	
Cabbage	Solan	Spitzkool	
	Pantnagar	PBOG-54 (Segmented leaf)	
Bottle gourd	Faizabad	 <p style="text-align: center;">Andromonoecious line (Andromon-6)</p>	 <p style="text-align: center;">Andromon-6 (Seedless bottle gourd)</p>
		Rahuri	BIG Round, Sel -1-1
	NBPGR	IC-110389, IC-92429	
Garlic	NHRDF	No. 334, G 323, 179, 282	
	NBPGR	NIC-14034, 13978	
Ridge gourd	NBPGR	NIC- 10222, 10232	
	Jorhat	C-10, C-16	
Radish	NBPGR	IC-143928, 143937	
Methi	NBPGR	IC-143855	
Palak	NBPGR	EC-184349 (High Leaf yield)	

Vegetable Production Technology

1. Application of NPK @ 120:60:60 kg/ha resulted in the highest yield (82.64 q/ha) of chilli var. Pant C-1 with cost benefit ratio 1:2.56 at Pantnagar. Hence, it is recommended for Tarai region while for Durapura conditions, applications of NPK @ 90:60:60 kg/ha is recommended for getting the maximum yield of Pusa Jwala.
2. Application of NPK @ 100:80:60 kg/ha gave the highest yield (99.35 a/ha) of garlic var. G-1 with the C:B ratio of (1:6.04) at Jorhat. This dose is recommended for Jorhat conditions of Assam.
3. Application of nitrogen @ 180 kg/ha and P₂O₅ @ 120 kg/ha showed the maximum C:B ratio (1:2.99) in tomato determinate hybrid ARTH-3, which is recommended for Sabour conditions.
4. For highest yield (9.55 g/ha) and C:B ratio (1:1.83), application of 120 kg nitrogen per hectare and planting at 45 x 30 cm spacing is recommended for seed crop of onion var. Agri Found Dark Red under Durgapura conditions.
5. Yield (10.86 q/ha) and C:B ratio (1:5.36) were highest with the application of nitrogen @ 100 kg/ha and spacing of 45 x 45 cm in carrot at Ranichuari. Hence it is recommended for the var. Nantes for U.P. Hills. Similar dose of nitrogen and spacing is also recommended for var. Pusa Keshar under Sabour conditions.
6. Application of nitrogen as 40 kg/ha basal + 40 kg/ha through top dressing gave highest yield of tomato (31.07 t/ha) with the C:B ratio (1:3.09). Hence it is recommended for Kalyanpur conditions.
7. For effective weed control and highest C:B ratio (1:2.52) in kharif crop of okra, application of Metolachlor @ 1.0 kg ai/ha + One hand weeding at 45 DAS is recommended for Sabour conditions.
8. For getting the optimum yield (73.29 a/ha) and C:B ratio (1:2.45), application of 4 irrigations at Prebloom, bloom, pod set and after Ist picking stages is recommended for vegetable pea var. Bonneville under Bangalore conditions.
9. The cropping sequences of paddy-chilli and Paddy-tomato are recommended for upland and medium low land conditions of Jorhat which gave maximum C:B ratio of 1:4.68 and 1:2.36 respectively.
10. Direct seeding of tomato in the field on raised beds during Ist week of October is recommended for highest net income (Rs.48.221/ha) and C:B ratio (1:2.45) under Tarai conditions of Pantnagar.
11. For getting optimum yield (526 q/ha) and C:B ratio (1:2.09), application of 60 kg nitrogen per ha along with *Azospirillum* as seed treatment (500 g/ha) + seedling dipping (1.0 kg/ha) + soil application (5 kg/ha is recommended for cabbage var. Pride of India under Solan conditions.
12. Application of nitrogen and potassium each @ 60 kg/ha without phosphorus resulted in highest yield (66 q/ha) and C:B ratio (1:2.03) in bitter gourd var. Priya which is recommended for Vellanikkara conditions of Kerala.

Varietal Trials

Varieties identified in XVth Group Meeting

	Crops	Varieties	Source	Recommended zones
1.	Brinjal (long)	BB-26	Bhubaneshwar	V, VII
2.	Brinjal (round)	AB-1	Anand	III, VI, VII
3.	Brinjal (small round)	PLR-1	Coimbatore	IV, VI, VII
4.	Tomato Determinate	Sel-32	Hisar	II, VI, VII
5.	Tomato Indeterminate	DT-10	IARI	IV, VI
		BT-12	Bhubaneshwar	I, IV
6.	Chilli	JCA-283	Jabalpur	VIII (Coimbatore) I (Srinagar)
		Phule-C-5	Rahuri	VII (Jabalpur & Dapoli)

	Crops	Varieties	Source	Recommended zones
7.	Onion	Punjab Red	Ludhiana	VIII (Coimbatore and IIHR)
		Punjab Round	Ludhiana	VII (Rahuri & Akola)
	Bitter gourd	MC-84'	Vellanikkara	VII Rahuri, Vellanikkara, Dapoli, Kalyani and Ranchi (CHES)
	Pumpkin	Pusa Hybrid-1	IARI	IV (Ludhiana), zone No. VIII (Vellanikkara) and VI (IARI).



BB-26 (Utkal Keshari)



AB-1 (Anand Brinjal)



PLR-1



Tomato Sel- 32



DT-10 (Pusa Uphar)



BT-12 (Utkal Urvashi)



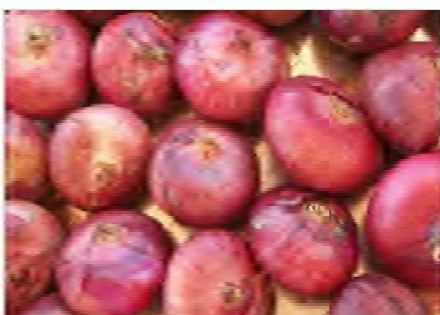
JCA-283



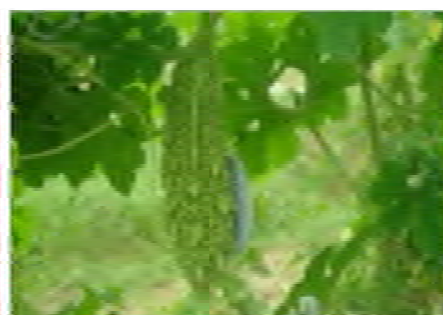
Phule-C-5 (Agnirekha)



Punjab Red round



Onion Punjab Round



MC-84 (Preethi)



Pusa Hybrid No. 1

INSECT PEST MANAGEMENT

Brinjal: To control various insect pest BT@ 500 g (commercial) combined with endosulfan (35 E.C.) @ 350 g ai/ha should be sprayed five times at 14 days interval starting from 10 DAT at Ludhiana conditions.

Onion: For management of thrips, deltamethrin @ 10 g ai/ha should be sprayed thrice at 15 days interval starting from 10 DAT. At Karnal conditions, application of cypermethrin @ 50 g ai/ha at 15 days interval was found quite effective manifesting maximum marketable yield. The B:C ratio was also high.

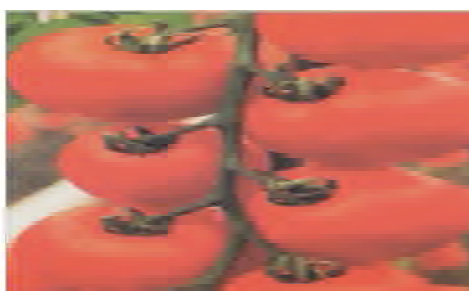
Heterosis Breeding

Hybrids identified on the basis of consistence performance are given as under.

	Crops	Hybrids	Source	Recommended zones
1	Brinjal Small Round	ABH-2	Anand	VII (Already released for zone IV & VI in 1995)
2	Tomato (Indeterminate)	BSS-20	Beejo Sheetal	IV, VI, VII



ABH-2



BSS-20 (Meenakshi)

Disease Management

On the basis of 3 years average data with their cost benefit ratio, following recommendations were accepted by the Chairman and the house.

Chemical control of leaf curl in chillies

Application of phorate in soil @ 1.25 kg ai/ha at the time of transplanting + monocrotophos 0.05% spray at an interval of 10 days had given the best results, at Junagadh in the effective control of disease incidence with ultimate increase in crop yield thereby presenting an incremental cost benefit ratio 5:98.

Integrated management of insect borne viruses in chilli/capsicum

At Coimbatore, the soil application of Carbofuran 3G @ 1.00 kg ai/ha + covering the nurse bed with nylon net of 400 mesh followed with three sprays of neem oil 2% at 15 and 35 days after transplanting had recorded lesser mosaic incidence and highest yield and with the cost benefit ratio of 1:33. However, at Sabour, use of nylon net and soil application of Furadon @ 1 kg ai/ha in seed bed and Furadon application @ 5 kg ai/ha one in a week after transplanting + 3 sprays of nuvacron 1 ml/litre was most effective in managing the disease with a cost benefit ratio of 1:5.64.

Control of curd rot complex of cauliflower

It was concluded that 5 sprays of Ridomil-MZ combined with Streptocycline 100 ppm was exceedingly effective in controlling the curd rot complex disease and increasing the seed yield of cauliflower at Katrain. The treatment resulted in 83.33% disease control with seed yield of 12.47 q/ha and earned a net profit of Rs. 477747/ha.

Management of leaf blight disease of onion

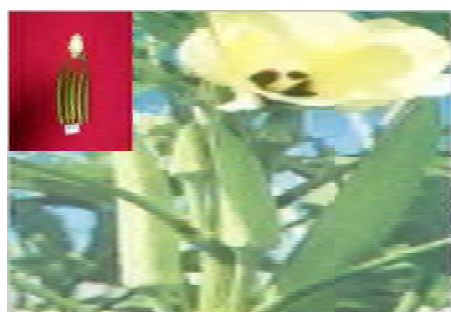
At NHRDF Karnal and Nasik, the four sprays at 15 days interval with mancozeb @ 0.3% + monocrotophos @ 0.05% was best to reduce the disease intensity (2.85%) as compared to check (19.08%). The yield was 340.43 q/ha with cost benefit ratio 1:8.09. The yield in control plot was 230.52 q/ha.

Resistant Varietal Trial

After going through the data provided by PDVR, the following recommendations were made for identification of disease resistant varieties.

Varieties Identified for Release

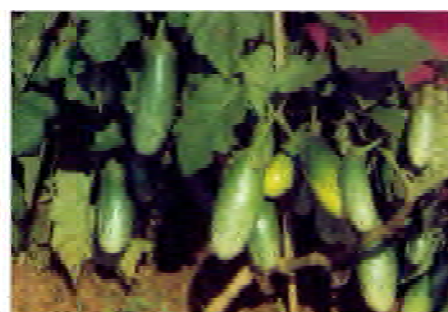
	Crops	Varieties	Breeding centres	Recommended zones
1.	Okra (YVMV)	HRB-9-2	Hisar	IV and VI
2.	Brinjal (Bacterial wilt)	SM 6-6 BB-44	Vellanikkara	I, VII and VIII V and VII



HRB-9-2 (Varsha Uphar)



SM-6-6 (Sweta)



BB-44 (Utkal Madhuri)

XVI -Worskshop

Venue : Tamil Nadu Agricultural University, Coimbatore

Date : 28th - 31st May, 1997

Collection, Evaluation and Conservation of Vegetable Germplasm

Crops	Source	No. of lines tested	No. table/Promising lines
Amaranth	Coimbatore	12	A-77, A-13, A-76 and A-10
Brinjal	IARI	55	B-1 and B-40
Capsicum	Solan	12	Capsicum-2
Carrot (tropical)	Hisar	58	HC-155, HC-2, HC-199 and Hisar Local (Red), HCP.160 (Purple) and HCB-22 (black)
Chillies	Coimbatore	85	CA 83, CA 80
	Jorhat	17	Jati Long, Round chilli
Cauliflower			
Early	PDVR	58	Kunwari.10, Kunwari.15, Hazipur.1 and Kutaki 13
	Sabour	21	91-1, 19-2 and 93-2
Mid	PDVR	54	Agahani.10, Pusi.13 and Pusi.8
	Sabour	25	81-5, 84-3, 93-1
Cucumber	Solan	35	Market Long
French bean	Pantnagar	20	RL.1, LS.1 and SL.2
	IIHR-Jorhat		IIHR.1119, HAU-7, HAU-4