

➤ Horticulture Biotechnology Centre

Tissue culture lab was strengthened under NHM in the year 2008-09 and protocols were developed for potato and banana. The mother culture of latest cvs. were brought from CPRI, Shimla and production of breeder seed/G-1 seed is under mass production. This lab was converted into Horticulture Biotechnology Centre and is located at Karnal near Horticulture Training Institute.

This centre will have additional area of 42 acres exclusively for the production of potato seed tubers. An exclusive seed cold storage is under construction which is built under RKVY.



a) PLANT PRODUCTION

In the State 22Govt. Garden & Nurseries are being run by the department in which quality fruit plants are being produced. During the year 2012-13, 5.41 lacs of fruit plants were produced and further sold to the farmers. The plants were provided to the farmers of the State on reasonable rates.



b) SEED POTATO PRODUCTION

Seed Potato Production

In the field of quality seed potato production department of Horticulture established Horticulture Biotechnology Centre at HTI, Uchani (Karnal) in year 2006. The main objective of this centre was to produce virus free tuber seed of commercial potato varieties. At HBC, Uchani (Karnal) virus free micro plants of different potato crop varieties multiplied through micro propagation and produced quality breeder seed at G-0 stage, which further multiply at GGN, Shamgarh as G-1, G-2 Stages. G-0 stage is considered equivalent to breeder seed. The G-2 stage seed would be provided to the farmers. The production details of last 7 years are as below:-

Potato Mini tubers production (2006-07 to 2013-14)

S. No.	Variety	Year 1/ in vitro stage		Year 2/ G-0 Stage		Year 3/ G-1 Stage		Year 4/ G-2 Stage		Year 5/ G-3 Stage		Remarks
		Input (culture tube)	Output (Micro plants)	Input (Micro plants)	Output (G-0) Mini tubers (No.)	Input (G-0) Mini tubers (No.)	Output (G-1) Tubers (qt)	Input (G-1) (qt)	Output (G-2) (qt)	Input (G-2) (qt)	Output (G-3) (qt)	
A.	06 Batch	2006-07		2007-08		2008-09		2009-10		2010-11		
1.	K. Badshah	1	350	350	2300	2300	1.80	1.80	9.25	9.25	52.5	Sold by DHO Karnal
B.	07 Batch	2007-08		2008-09		2009-10		2010-11		2011-12		
2.	K. Pukhraj	1	5200	5200	37038	37038	38	---	---	---	---	Rejected due to PLRV infection
C.	08 Batch	2008-09		2009-10		2010-11		2011-12		2012-13		
3.	K. Pukhraj	1	2500	2500	6941	---	---	---	---	---	---	Rejected due to PLRV infection
4.	K. Pushkar	1	Nil	---	---	---	---	---	---	---	---	Nil performance in <i>in vitro</i>
5.	K. Khyati	1	15000	15000	91592	91592	60	30	143	---	---	Sold by DHO Karnal
6.	K. Surya	1	2500	2500	7900	7900	2	2	6	---	---	Sold by DHO Karnal
	Total	4	20000	20000	106433	99492	62	32	149			
D.	09 Batch	2009-10		2010-11		2011-12		2012-13		2013-14		
7.	K. Pukhraj	1	1100	1100	1576	1576	0.10	0.10	0.85	---	---	Sold by DHO Karnal
8.	K. Khyati	1	3200	3200	2234	2234	0.24	0.24	3.00	---	---	Sold by DHO Karnal
9.	K. Surya	1	35800	35800	68082	68082	----	----	226.50	---	---	Sold by DHO Karnal
10.	K. Badshah	1	1500	1500	2161	2161	----	----	2.00	---	---	Sold by DHO Karnal
	Total	4	41600	41600	74053	74053	----	----				
E.	10 Batch	2010-11		2011-12		2012-13		2013-14		2014-15		
11.	K. Pukhraj	2	45189	45189	70,122	70,122	15.00			----	----	Sold by DHO Karnal
12.	K. Khyati	1	28125	28125	129912	129912	173.00			----	----	Sold by DHO Karnal
13.	K. Surya	1	27010	27010	101946	101946	69.5			----	----	Sold by DHO Karnal
	Total	4	100324	100324	301980	301980				----	----	
F.	11Batch	2011-2012		2012-2013		2013-2014		2014-2015				
	K. Pukhraj	1	40000	40000	174090	250000	230					Store in cold store
	K. Khyati	1	45000	45000	262563	250000	360					Store in cold store
	K. Chipsona 4					50000	0					
	K. Badshah	1	20000	20000	64975	0	60					Store in cold store
	Total	4	105000	105000	521804	550000	650					

At HBC, Uchani Karnal banana plant G-9 variety also propagated through micro propagation (PTC). The plant produce by this method are free from all virus infection and perform uniformly in field condition and produce high yield. The last seven years production of banana plants are as below:

Sr. No.	Year	Banana Variety	Target	Production	Sale of Plants (No.)	Remark
1.	2007-08	G-9	20000	32271	30271	
2.	2008-09	---do---	20000	22955	22676	439 plants transferred for banana mother plant block at HTI complex
3.	2009-10	---do---	15000	15150	12000	
4.	2010-11	---do---	27000	3000	7802	530 plants transferred for banana mother plant block at HTI complex
5.	2011-12	---do---	25000	25000	21838	
6.	2012-13	---do---	20000	17500	16840	
	Total		127000	115876	111427	

Market Interventions

- Establishment of pack houses and modern fruit and vegetable markets
- In the 1st and 2nd phase markets and pack houses are being developed. The projects for this have already been approved by GOI, in the year 2006-07 for Rs. 67.00 crore and in the year 2009-10 for Rs. 170.00 crore, for establishment of modern market yards and pack houses.
- These pack houses are being set up at district level. Each pack house has fruit and vegetable grading unit/machine, 3-5 cold storage units with 25-100 MT capacity, pre coolers of 5-10 MT with add on facility of ripening chambers 2-5 in no.'s (5-10 MT each) in the districts of Kurukshetra, Sonapat, Jhajjar, Karnal.
- Potato Grading and cold storage unit
- One no. potato grading unit and cold storage unit has been constructed under NHM and is in operation from the last year. This unit has grading capacity of 10 MT/hr. and storage capacity of 1750 MT along with other cold storage facility.
- Development of collection centres
- Each pack house and market shall be linked with collection centres (at block level) and 100 nos. collection centres are proposed in 2nd phase along with refer vans.
- Construction of Agro mall and Farmers information centres
- One no. agro mall at Karnal is under construction wherein all the required facilities like seeds; consultancy and retail market shall be operational under one roof.