Report of the Joint Inspection Team for their visit to Punjab during 14-19 October, 2012 to review National Horticulture Mission Progress

Districts visited by J.I.T of National Horticulture Mission

1. Hoshiarpur 2. Gurdaspur 3. Amritsar 4. Kapurthala

National Horticulture Mission

Ministry of Agriculture

Department of Agriculture & Cooperation

Krishi Bhawan, New Delhi-110001

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Observations and Actionable Issues

A wrap up meeting held with Dr. L.S. Brar, State Mission Director and Director Horticulture at Chandigarh. Based on the observations during the field visit, the important issues including physical and financial target and achievements were discussed.

1. JIT observed that expenditure till November, 2012 is Rs. 20.47 crore out of annual plan allocation of Rs. 62.90 crore which is only 78.4% out of 26.00 crore released. Therefore it is noticed that good efforts have been made for timely utilization of budget released to the State from NHM.
2. Team felt satisfied with the achievement made in various NHM / NMMI components in the districts. Departmental staffs are fully exposed to technical advances in the field of Horticulture and protected cultivation technologies resulting in adequate technology transfer to farmers in districts.
3. JIT visited the new area expansion programme in four districts as test case where plantation is done in cluster of mango, litchi, kinnow. It has been noticed that the progress by and large is good under this activity for small and marginal farmers. It is also observed that field functionaries are supervising clusters regularly after planting the crops as per package recommended by SAU's.
4. Incidence of bacterial canker is spreading fast in kinnow growing (Gurdaspur, Hoshiapur and Kapurthala) districts, necessary control measures need to be done immediately with recommended pesticides to kill leaf minor which helps in spreading the disease.
5. JIT observed that rejuvenation programme in mango was not properly adopted as per recommended technologies. Old plantations of mango, needed rejuvenation of decline and senile orchards. Such programme may be initiated in large area on priority basis which will not only increase the productivity but also quality of fruits. The programme may be strictly monitored and supervised as it needs regular supervision and practical guidance to the farmers.
6. The problem faced by the farmers relates to lack of awareness of rejuvenation and its benefits and recommendation of suitable inter crop, which will allow the farmers to have extra income till the fruit tree starts bearing. Training and on-field demonstration need to

be done. Training manual should be prepared for distribution to the trainees in simple local language.

7. Government Model nurseries existing in the districts are yet to be made fully functional, SHM may look into the matter for holistic development of Horticulture in the State. Step needs to be initiated to accredit more nurseries for ensuring supply of good quality planting material to the farmers.
8. JIT visited private model nursery at Hoshiapur to be an exemplary status and able to lead the Kinnow in good production by supplying elite planting material for the State. Mother plants maintained in net house are healthy and free from viral diseases.
9. Team also visited citrus estate aimed to shift agriculture focus away from traditional water and soil depleting cropping pattern to encourage non conventional farm activity for profuse cultivation of citrus in the State. Also visited laboratories which are fully equipped and functional with modern equipments being used to detect plant soil hunger and viruses etc.
10. JIT visited modern mushroom units at Hoshiarpur where mushroom growers complained that electric tariff for mushroom related work is charged on industrial rate. The rates should be at par with Agriculture.
11. Another problem faced by mushroom grower is from Pollution Control Board, Necessary instruction needs to be issued by SHM to Pollution Control convincing them that mushroom cultivation does not come under Pollution act.
12. There is a demand of farmers for motorized machine to clean the vermi compost mechanically. Such motorized units are available with SHM, Tamil Nadu.
13. There is great potential to cultivate flowers and off season vegetables in Kapurthala and Hoshiapur districts beside fruit crops.
14. The efforts are being made to cultivate litchi under Sugarcane and kinnow under Banana in Gurdaspur and Hoshiarpur districts. Presently litchi plants are growing well but Kinnow is not comfortable with Banana as it requires lot of water. As such we may not recommend Banana cultivation in Punjab due to frost problem.
15. Display board with NHM logo was present at cites wherever NHM financial assistance provided.

Report of the Joint Inspection Team on its visit to Punjab during 14-19 October, 2012 to review the progress under the National Horticulture Mission

The Joint Inspection Team (JIT) comprising Dr. Om Prakash, Chief Consultant, National Horticulture Mission and Shri R.P Singh, STA, National Horticulture Mission visited Punjab during 14-19 October, 2012 to review the progress under National Horticulture Mission and other programmes in the State. Dr. K.G. Singh, Senior Research Engineer, Department of Soil and Water Conservation Engineering, PAU, Ludhiana joined the Team. Dr. L. S. Brar, Director Horticulture & Mission Director, Punjab coordinated the visit of the Team in Gurdaspur, Amritsar, Hoshiarpur and Kapurthala districts of the State.

About Punjab

Geographical area of State is 5036 thousand hectares with estimated population of about 2.43 crores. The State has 20 districts and is classified as a sub tropical region. There are three types of agro-climatic zones i.e. Arid-irrigated zone, Sub mountain Zone and Central Zone. The soil is mostly sandy loam with pH range 8-9. Therefore, it has good potential for cultivation of various horticultural crops. Approximately, 7861 thousand ha is the cropped area of the geographical area is under cultivation. The net sown area is 42 lakh ha which is 84 % of total area is. Out of the total net sown area, horticulture crops are grown on an area of 2.69 lakh ha which is 3.42 % of the net sown area. The area under fruit crops upto Feb. 2011 is 0.70 lakh hectares (ha) with a production of 14.14 lakh MT and 1.72 lakh ha is under vegetable crops with production of 36.28 lakh MT. Fresh and cut flowers are grown over 1150 ha area with a production of 9039 MT. Whereas Flower seed is produced on 750 ha area and with a production of 68 MT. Besides this spices and aromatic plants are being grown on an area of 25100 ha with a production of 65598 M.T.

Potential of Horticulture in Punjab

Horticultural crops are being grown in the State in about 2.69 lakh hectares area with an annual production of 51.48 lakh tonnes. The horticulture sector is contributing significantly to GDP in agriculture of the State. Commodity-wise details are given below.

Crops	Area ('000ha)	Production ('000 MTS)
Fruits	70	1414
Vegetables	172	3628
Flowers (Seed Production)	0.750	0.068
Spices & Aromatic crops	25	66
Flowers (fresh fruit)	1.150	9
TOTAL	**268.9**	**5117**

The Punjab State leads in citrus production among the fruit crops with the largest production of Kinnow. This crop occupies an area of 38837 ha contributing 64.20% of the total fruit production of Punjab. Likewise Potato is the major leading vegetable crop of Punjab having an area of 83117 ha with 60.11 % the vegetable production. Apart from Kinnow, other fruit crops like Guava, Peach and Pear has significant area in the state.

Strength of Horticulture

Due to the sandy loam soil and agro climatic condition, Punjab State leads in Kinnow production. Based on the regional natural growing conditions state has established Estates of different fruit viz. Citrus Estate, Litchi Estate and Pear Estate for holistic development. End to end approach has been followed resulting in uplifting the socio economic status of the farmers. Besides this, it also leads in potato seed production and supply seed to the other states. State is self sufficient in planting material. There are 85 nurseries in public & private sector. Apart from this about 7 T.C units have been established which supplying true to type are planting material of Potato, Banana & Papaya etc.

Focus Crops of the State

Main fruit crops of the State are Kinnow, Peach, Pear & Guava. Main vegetable crop of the State is potato apart from the Pea, Cucurbits, & Carrot etc . Besides this seed production of flowers is also done which has great export potential. Flower seeds are exported to Holland. Among spices turmeric & garlic are grown. Emphasis will be given to promote high yielding and certified varieties. District-wise details of crops covered under National Horticulture Mission (NHM) are given below. Only the crops having potential are covered under NHM with end to end approach.

Approved Clusters and Crop Matrix under NHM

No.	Crop Clusters	Districts	Crops
1.	**Fruits (Perennials)**	Hoshiarpur, Bathinda, Mukatsar & Abohar.	Kinnow
		Jalandhar, Ludhiana, Nawan Shahar, Patiala.	Peach
		Ludhiana, Sangrur, Patiala, Mohali	Guava
		Amritsar, Tarn Taran & Jalandhar.	Pear
	Fruits (Non Perennials)	Ludhina, Mohali (S.A.S Nagar) & Fatehgarh Sahib.	Banana
2.	**Vegetables**	Jalandhar, Hoshiarpur, Ludhiana & Bathinda	Potato
3.	**Flowers**	Patiala, Ludhiana, Mohali, Fatehgarh Sahib & Sangrur.	Gladiolus , Marigold
4.	**Spices**	Ludhiana, Amritsar, Hoshiarpur & Gurdaspur. Garlic & Turmeric.	Garlic & Turmeric.

Selection of Crops for Intervention under NHM and Rationale

The focus crops were selected under NHM on the basis of following parameters:

1. Market linkages (existing and potential)
2. Production advantage - potential in the domestic market
3. Export potential.

Sr. No.	Focus Crops	Market Linkages				Domestic Market Potential	Export Potential
		AEZ Export	Mandis	Proces-sing units	Cold Storage / Ref. Van		
1	Kinnow	-		√		High	High
2	Guava	-	√	-	-	High	-
3	Pear	-	√	-	-	Medium	-
4	Peach	-	√	-	-	High	-
5	Potato	√	√	-	√	High	High
6	Flowers (fresh)	-	√		√	High	High
7	Flowers (Seed)	-	-	-	-	-	High

Export potential

Focus Crops	Relational
Kinnow	• Thrust on exports through improvement in pre and post harvest practices. • Strong domestic market for Kinnow from Punjab. • High nutritional value and having anti cancerous, cholesterol lowering properties.
Potato	• Large scope for area expansion and productivity improvement and processing. - increase export focus of seed potato to other countries.

Strengths	**Weaknesses**
• Soil profile as well as conditions of the state for growing different horticultural crops. • Adequacy of quality planting material from the Government as well as private registered nurseries. • The average yield of kinnow fruits of the state is substantially higher than all India average. • Farmers in the state are coming forward for huge investment for horticultural activities. • More farmer groups/farmers societies are coming forward to adopt end to end approach. • Based on natural growing climatic conditions, Estates of different fruits such as Kinnow, Litchi & Pear have been established to provide state & art machinery and technical know how under one umbrella.	• The linkage between farmers and R&D institutions is currently weak due to shortage of technical staff. • Due to non amendment of APMC Act wholesale /terminal market could not be established • Post harvest management facilities like cold storages, pre-cooling units, grading/sorting, ripening units, processing units etc. are not being properly utilized mainly for horticultural crops. • The marketing channels are not well developed. • There is a less awareness on Hi-tech horticulture among the growers likewise, lack of awareness about quality consciousness among consumers. • Interrupted supply of electricity for irrigation is problem with the growers of the state
Opportunities • Scope for trial testing of new horticultural crops especially flowers & vegetable for acclimatization in the state. • Rainfed areas especially Kandi Belt can be utilized for promotion of	**Challenges** • Depleting water table in the state is great matter of concern to combat to save water resources in the coming years. • Sudden/Drastic changes in the climate are major challenges. Extreme hot or

horticultural crops such as Aonla and Peas. • Cultivation of flowers & high value vegetables under protected conditions i.e. protected cultivation. • To impart training to staff & farmers through S.A.U. Production and productivity of horticulture crops can be increased. To promote organic farming & GAP certification for export of produce. • To set up infrastructure for post harvest management, marketing & processing industries for horticultural crops.	frost conditions cause much loss to the orchards. Need to develop varieties which can withstand extreme climatic conditions. • Development of varieties free from diseases such as Phytophthora in kinnow, early/late blight in potato, needs to be emphasized. • To control excessive use of chemical fertilizer & pesticides in horticulture crops especially vegetables also need to checked. • Lack of online market information.

Strategy for Horticulture Development

Guiding Principles under NHM

The objective of the National Horticulture Mission is to double the production & productivity of horticulture crops.

There is an end-to-end approach under mission covering production, post harvest management, processing and marketing to assure appropriate returns to growers/producers; Promote Research and Development (R&D) of technologies for production, post-harvest management and processing in potential belts/clusters; Enhance acreage, coverage, and productivity in potential belts clusters. To achieve the objectives and goals of NHM, Strategy and Road Map has been prepared for next 3 years. The objective of preparing the Strategy and Road Map is to develop a demand-driven approach for horticultural products. The Strategy has been prepared based on the SWOC analysis and includes the following:

- ❖ Increase the area under horticultural crops.
- ❖ Identification of Market linkages of production areas in the State with
    - Agri Export Zones
    - Existing post harvest management infrastructure, processing facilities.
    - Whole sale/Terminal Markets, Existing Mandis.

- Mapping of production clusters of various horticultural crops with markets
- To enhance the productivity with good agricultural practices (GAP).
- Transfer of technology through exposure visits, show & seminars.
- Identify missing links between farmers and processors, traders and retailers.
- High tech horticulture under protected conditions.

Existing Infrastructure for Planting material, Post-harvest management, marketing and Processing

Nursery Sub-Plan for quality planting material for area expansion of various horticulture crops.

Existing Planting Material Production Units (nurseries) in the State

Disease free planting material is pre-requisite for establishment of healthy orchard resulting in quality production. There are about 85 Govt. as well as private registered nurseries in the state from where good quality disease free planting material is supplied to the growers. Apart from this T.C. units are also proving helpful in meeting the arising demand of planting material.

Nursery Act & Certification of Planting Material

The Nursery Act of the State was old & needed amendments. The required amendment has been incorporated in the act. This act is submitted to the State government for approval. After renewal of the nursery act, the nursery owners could be punished with fine or imprisonment if he sells the inferior planting material. Certification of planting material has been made mandatory prior to sale of fruit plants. While procuring the planting material from private nurseries as well as Govt. nurseries, due procedure is adopted for certifying the material by a Technical Committee consists of SAU's representative.

The Directorate of Horticulture has already issued instructions to Private Nurseries/District horticulture heads to get the nurseries accredited from NHB prior to the sale of fruit plants otherwise they will not be eligible for the sale of planting material.

Existing Infrastructure for Post Harvest Management & Marketing in the State

Pack Houses:

Under NHM 121 Pack Houses have been set up in the State for fruits and vegetables. These Pack Houses will reduce the post harvest losses to some extent. Pack house is the basic need of horticultural sector for collection grading & sorting of the produce. There is big potential of the activity in the state.

Cold Storages:

The total capacity of cold storage facilities was about 1393000 MT before launching the NHM scheme i.e. before 2005-06. Over 80% of this capacity is utilized by potatoes alone. Thus, at present, total 465 cold storages are available in the State. Few more projects have also been submitted to Govt. of India for sanction

Sr. No	**Number of Cold Store Before NHM**	**Capacity (M.T)**	**Number of Cold Store After NHM**	**Capacity (M.T)**
1.	425	1393000	465	1536992

Markets/Mandis

There are 110 Agriculture Produce Marketing Committee (APMC) markets/mandies in the State. The current processing is less than 2% of the total horticulture production. There is potential for increase in the number of processing units especially for Kinnow, Potato, Turmeric, Aonla, Garlic and Coriander with linkage to the proposed Food Parks.

S. No.	**Name of Processor**	**District**	**Product**
1.	Punjab Agro Juices Limited Village Alamgarh	Ferozepur	Kinnow Juice Concentrate, other fruits and vegetable Juice Concentrate.
2.	Punjab Agro Juices Limited Unna Road	Hoshiarpur	-Do-
3.	Farmer Agriculture produce organization, Kangmai	Hoshiarpur	Turmeric processing.
4.	Iqbal Randhawa processing unit, Phuglana	Hoshiapur	-Do-

5.	Kinnow Waxing and Grading Center, Badal.	Shri Mukatsar Sahib	-Do-
6.	Kinnow Waxing and Grading Center, Badal.	Shri Mukatsar Sahib	-Do-
7.	Kinnow Waxing and Grading Center, Talhiwala Jattan, Teh. Fazilka	Ferozepur	-Do-
8.	Kinnow Waxing and Grading Center, Kangmai	Hoshiarpur	-Do-
9.	Kinnow Waxing and Grading Center, Chhauni Kalan,	Hoshiarpur	-Do-

Road Map Ahead:

Progress of various activities made under NHM during 2005-06 to 2011-12 & proposal programme for next 3 years.

Based on the potential for horticulture development in the State, (area already covered, infrastructure available for PHM, Markets & Processing Units), detailed analysis has been made. In order to increase production & productivity of various horticulture crops and to assure appropriate return to the growers, it is proposed to link all the production clusters under NHM with the existing infrastructure and proposed to be created under NHM.

Status of National Horticulture Mission in Punjab

The Centrally Sponsored Scheme of National Horticulture Mission (NHM) is being implemented in 16 districts on a Mission mode approach to address all the issues related to holistic development of Horticulture in the State since 2005-06.

The programme in the State of Punjab is being implemented by the State Horticulture Development Society through District Mission Committees involving farmers, Societies, NGOs, Grower Associations, SHGs, State institutions etc. The programme is being implemented in 16 districts. The district covered under the programme includes Firozpur, Bhatinda, Muktasar, Amritsar, Hoshiarpur, Gurdaspur, Kapurthala, Ludhiana, Jalandhar, Patiala , Fatehgarh Sahib, Taran Taran, Faridkot, Nawasahar, Sangrur and SAS Nagar Mohali.

The focus crops identified under the programme includes Citrus, Guava, Ber, Pear, Grapes, Litchi, Flowers, Spices and Aromatic plants.

Major activities being undertaken in the programme are production and distribution of planting material, vegetable seed production, area expansion, rejuvenation of old and senile orchards, creation of community water resources, protected cultivation, IPM/INM, organic farming, development of post harvest management & marketing infrastructure and human resource development.

Physical Progress

Salient progress till 2011-12 is as follows:-

- An additional area of 0.34 ha of identified horticulture crops are covered.
- 2 nurseries have been established for production of quality planting materials.
- An area of 10270 ha. has been covered under rejuvenation of old and senile orchards.
- Organic farming has been adopted in an area of 6300 ha for promotion of organic cultivation of horticultural crops.
- IPM practices have been adopted in an area of 2000 ha.
- 22 IPM/INM infrastructure facilities such as Leaf tissue analysis labs, disease forecasting units have been created.
- 343 community water structures have been created.
- Harvest Under the component of Post Management, 222 units including pack houses, cold storage units, refrigerated vans, primary/ mobile processing units, ripening chambers, pre cooling units attach to cold storages and mobile pre cooling units) have been established.
- 46 market infrastructures have been set up.

Financial Progress

During 2005-06 to 2011-12, an amount of Rs. 186.21 crore was released to the State. The State has reported an expenditure of Rs. 180.03 crore till March 2012.

An allocation of Rs. 74.00 crore has been approved including GOI share of Rs. 62.90 crore for Annual Action Plan 2012-13. Funds to the tune of Rs. 26.00 crore has been released during the current financial year and out of which an expenditure of Rs. 20.47 crore has been reported.

Year wise details of Outlay, Funds Released and Expenditure under NHM in Punjab

Year	Outlay	Release	Expenditure
2005-06	60.74	28.69	6.97
2006-07	59.74	11.50	17.75
2007-08	68.54	24.10	17.14
2008-09	78.02	14.12	25.48
2009-10	38.54	25.78	36.09
2010-11	42.50	35.00	37.03
2011-12	46.75	47.02	39.57
2012-13	62.90	26.00	20.47

Highlights of the State

Punjab produces about 5.11 m. MT of horticultural produce from an area of 0.27 m. ha. accounting for 2.12% of horticulture produce in the country. Major share of production is from vegetables (70.23%) and fruit (26.89%)

- 84.13 lakh MT of fruits have been traded in organized markets with average price of Rs. 25.70/kg.
- 12.84 lakh MT of vegetables have been traded in organized markets with average price of Rs. 9.20/kg.

Potato

- Punjab is the fourth largest producer of Potato in the country and accounts for 5% of the total production of potato in the country. The production of potato is 585 of the total vegetable production in the State.
- The production of the potato in the state is 2.09m. MT grown in an area of 0.08m. ha. The productivity of the crop is 25.0 t/ha.
- The production of potato is concentrated in the belts of Jalandhar, Hoshiarpur, Ludhiana and Patiala.

- Frequent occurrence of frost is a constraint. Use of micro-irrigation has helped to contain the problem to some extent. The available infrastructure for post harvest management of potatoes in the state is inadequate.
- 4.61 lakh MT of potatoes have been traded in organized markets with average price of Rs. 3.79 /kg.

Cauliflower

- The state produces about 2.29 % of the total production of Cauliflower in the country and 5.3% of the total vegetable production in the state.
- The productivity is 17.78 MT/ha. which is the second highest in the country after West Bengal.
- The production of cauliflower is concentrated in Gurdaspur, Fatehgarh Sahib and Nawansher.
- 0.77 lakh MT of cauliflower have been trade in organized markets with average price of Rs. 8.87 /kg.

Peas

- Punjab accounts for 5.7% of the total production of Peas in the country.
- The state produces about 0.20 m. MT of peas from an area of 0.02 m. ha. having productivity of 10.2 MT/ha.
- The major peas growing belts in the state are Jalandhar, Amristsar and Hoshiarpur.
- 0.01 lakh MT of peas have been traded in organized markets with average price of Rs. 15.26/kg.

Citrus

- Punjab is leading producer of orange mandarin and accounts for 28% of the production of orange mandarin production in the country with productivity of 21.2 MT/ha.
- Punjab is ranked at third place in production of Citrus in the country and accounts for 12.1% of the total production in the country.

- The production of citrus forms 65.58% of the total fruit production of the state. The state produces 0.90m. MT of citrus in the state in an area of 0.04m. ha. The productivity of the crop is 20.1 MT/ ha which is second highest after Karnataka.
- The main fruit of citrus group grown in the Punjab is Kinnow. The crop is being grown in the belt of Firozepur, Faridkot and Hoshiarpur. Debittering plants have been set up at Faridkot and Hoshiapur for processing of kinnows.
- 0.68 lakh MT of citrus have been traded in organized markets with average price of Rs. 1.82/ kg.

Guava

- Punjab accounts for 6.9% of total production of Guava in the country and the sixth most guava producing state in the country.
- The state produces about 0.17m MT of guava from an area of 0.008 m. ha. having productivity of 21.8 MT/ ha which is the second highest after Madhya Pradesh in the country.
- 0.09 lakh MT of guava have been traded in organized markets with average price of Rs. 7.88/ kg.

Litchi

- Punjab is ranked fifth in litchi producing state in the country and is contributing about 4.8% to total litchi production in the country.
- The production of litchi is about 0.04 MT from an area of 0.002 m. ha. having productivity of 14.7 MT/ha which is highest among the litchi producing state in the country.

HOSHIARPUR DISTRICT

District Profile

Hoshiarpur lies in the north-east of Punjab and is bounded by Nawanshahar, Rupnagar and Kapurthala districts of Punjab and Una district of Himachal Pradesh. It has river Beas in the north-west.

1.	Geographical area	339267 Hect.
2.	Blocks	10 nos.
3.	Villages	1417 nos.
4.	Rainfall	997mm
5.	Land use	
	■ Geographical area	339267
	■ Net sown area	205000
	■ Fallow land	1000
	■ Land not available for cultivation	133267
6	Size of holding	
	■ Less than 1 ha.	30090 families
	■ Between 1 and 2 ha.	20145
	■ Above 2 ha.	36989
7	Irrigation facilities and sources	
	■ Net irrigated area	146000

District Hoshiarpur-Brief Note

Department of Horticulture Punjab is in the service of farming community and provides the technical guidance and know-how regarding cultivation and after care of fruits, vegetables, floriculture and mushroom cultivation through its extension staff posted at block level. In District Hoshiarpur area under fruit crops is 9236 hectares and under vegetables 28435 hectare. Besides providing technical support, department also provides quality planting material of fruits and vegetable seeds at reasonable rates through three Govt.gardens and nurseries situated at Chaunni Kalan,Bhunga and Khiala Bulanda and potato seed farm situated at village Khanaura

Punjab Govt has established 2 Citrus Estates at Chaunni Kalan and Bhunga for overall development of Citrus and these Estates have facilities like mechanical grading and waxing units

from where farmers can get their produce graded and waxed for marketing in distant markets like Kolkata,Bangaluru and Varanasi etc. This helps in fetching good price of the produce and Punjab Agri Export Corporation(PAGREXCO) provides subsidy for grading, waxing, packing material and transportation etc. In these Citrus Estates latest machinery such as mechanical sprayers, hydraulic pruners, rotary tillers etc are provided to Citrus growers on rent basis along with/without tractors, which in turn helps in reducing production cost and increase profit of farmers.

Department also has Govt fruit preservation laboratory which provides around 15000 bolts of different types of squashes etc on no profit no loss basis.

Department of Horticulture encourages farmers to adopt modern techniques of vegetable cultivation such as poly-house and net house cultivation and provides subsidy to the farmers adopting these techniques.

Under National Horticulture Mission department provided financial assistants for planting new orchards, rejuvenation old and senile orchards, pollination support through bee keeping, organic farming, plasti-culture, modern equipment etc.

Overall despite the problems like lack of staff, lack conveyance for mobility etc. Department is fully dedicated to serve the farming community by promoting crop diversification through Horticulture crops i.e. fruits, vegetables, floriculture, sericulture and mushroom cultivation.

Area under fruits in District Hoshiarpur upto 30-10-2012

Progress Report under National Mission on Micro Irrigation Scheme Year 2011-12

Sr.No	Kind of Fruit	Total Area (ha.)
1	Kinnow	6782.37
2	Malta	167.80
3	Lemon	29.55
4	Mango	1353.30
5	Litchi	289.40

6	Guava	255.75
7	Peach	124.60
8	Pear	42.90
9	Plum	9.55
10	Ber	7.10
11	Grapes	0.40
12	Aonla	131.20
13	Banana	4.00
14	Other Fruits	78.50
	Total	**9236.22**

Progress Report of National Mission on Micro Irrigation Scheme Year 2011-12

Sr.No.	Funds Received (GOI) (Lacs)	Expend-iture (Lacs)	No. of Benefi-ciary	Area Covered	Remarks
1	**123.73**	**118.19**	**361 No.**	**442 Hect.**	**Funds received in (2011-12)=85.93 Lacs** **Spillover amt. (2010-11) = 36.81 "** **Interest = 0.99 "** **Total funds = 123.73 "**

Visit of Citrus Estate

With an aim to improve the quality and productivity of citrus the Govt. of Punjab through Department of Horticulture has established five Citrus Estates in natural citrus growing areas of the state in the year 2007, to provide all the infrastructural facilities under one roof to obtain more productivity and good quality of produce. These five Citrus Estates are at Abohar (Ferozepur), Tahliwala Jattan (Ferozepur), Badal (Muktsar), and Bhunga (Hoshiarpur), Hoshiarpur.

Citrus Estate Hoshairpur is situated in Village Chauni Kalan which is approximately 2 Kilometre away from District headquarter Hoshiarpur (Punjab) on the Hoshiarpur-Chandigarh Road. It was the joint effort of the progressive farmers of this area who convinced the Punjab Government regarding establishment of Citrus Estate in this kinnow growing area.

The meeting of the Executive Committee is conducted every month under the Chairmanship of Deputy Director Horticulture, Hoshiarpur who is also Chairman-cum-C.E.O., Citrus Estate, Hoshiapur. In this meeting various decisions for the proper functioning, purchase of new implements, progress made during the last month etc. are discussed and on the basis of discussions the future course of action is framed. Further to implement the decisions taken in the monthly Executive Committee meetings the following committees comprising of farmer members drawn form the Executive Committee have been constituted.

Aims and objectives

- To provide quality nursery plants, various other inputs such as fertilizers, insecticides / pesticides, machinery equipment, packing material etc., either directly or through authorized sale outlets.
- To promote and propagate citrus plantation and citrus based industry.
- To make arrangements for treatment, packaging, storage, marketing, processing, preservation, transport and export of citrus.
- To formulate policy / action plan for promotion of citrus cultivation.
- To help establishment of cold storages, packing houses and processing factories concerned to citrus.
- To take steps for the promotion of technical know-how for the proper maintenance, packing, marketing etc., to the citrus growers.
- To undertake or assist in undertaking programmes and employment generation, growth and diversification of agriculture and industries based on citrus.
- To organize technology transfer through, training and extension to the growers.
- To promote organization of marketing chains both for domestic and export marketing of citrus.
- To build a skilled cadre for managing the citrus plantations.
- To accelerate the development of rainfed and kandi regions through citrus.
- To promote measures for increasing the utilization of irrigation potential, water conservation and its efficient management.
- To organize / catalyze the primary producers of citrus in suitable groups towards the performance of activities related to the achievement of the objectives of the Society.

- To pave the way for establishment of integrated producers' organizations with forward and backward linkages related to citrus, other fruits and vegetables which are used for blending with citrus juice.
- To prepare, print and publish papers, periodicals, monographs and books on citrus, other fruits and vegetables in furtherance of the objectives of the Society.

The shortage of staff was a big issue with the Department of Horticulture, Punjab and it was very difficult for their permanent staff to reach each and every farmer and provide them the expert advice. With the formation of Citrus Estate Hoshiarpur this issue has been so far resolve by the appointment of Expert Technical Staff through the Department of Horticulture, Punjab on contractual basis. Currently there are 4 Horticulture Development Officers (out of them one post is filled and others are vacant) who are providing expert technical advice / remedial measures to the farmers by visiting their orchards on regular basis. They try to provide the onsite solution to the various plant and soil related problems as to increase the citrus productivity and best quality produce.

The description of physical progress achieved by the technical staff of Citrus Estate Hoshiapur is as an follows:

1. Total No. Villages Covered : 331
2. Total No. of farmers : 300 approx.
3. No. of Registered Farmers : 263
4. Total Area : 1229 Hect.
5. Total Area Registered : 687 Hect.

More than 75% of the Citrus growers are now registered members of the Estate and this figure is on the rise every month as more and more farmers are getting aware of the services and facilities being provided by the Citrus Estate Hoshiapur.

Technical Know How

To provide technical know-how for pest control, plant diseases etc. Citrus Estate Hosshiarpur is working as a Scientific Centre, Disease Preventive Centre for the farmers of different circles / villages coming under the Estate.

Citrus Estate Hoshiapur has also initiated the research on the effect of different harvesting dates on the physico-chemical quality characters of the kinnow fruit through Punjab Horticulture Post harvest Technology Centre, Punjab Agricultural University, Ludhiana. The main objective behind this research is to study the periodic changes towards maturity in the physico-chemical quality characteristics of Kinnow. This research will be very fruitful as regards to the marketing and processing of kinnow fruit.

Various awareness camps and seminars are also organized by the technical staff of Citrus Estate Hoshiapur to educate the farmers regarding service provided by the Estate such as subsidies being provided by the Govt., recent developments in Citrus Industry, increasing the utilization of irrigation potential, water conservation and its efficient management etc. The information regarding the proper and timely use of insecticides and pesticides is also provided to the farmers during these awareness campuses. At present the technical staffs working under the Citrus Estate Hoshiarpur organizes 1 village camp every month in the village / circle allotted to them.

Mechanization

Mechanisation of the farming is need of the day now. Most of the farmers registered with the estate are small farmers and they can not afford to spend too much on the purchase of the costly and latest technology implements. Citrus Estate Hoshiapur is playing an important role in the mechanization of the orchards by providing various latest technology implements. The description of implements with the Estate which are provided to the farmers at the maintenance charge is given as below:

Sr. No.	Name of the Implement	Units
1.	Tractors	5
2.	Rotavators	6
3.	Diggers	2
4.	Tractor mounted spray pumps	4
5.	Honda Engine spray pumps	4
6.	Tiller	1
7.	Sub soiler	1
8.	Leveller (Karah)	1
9.	Rotary Tillers	2
10.	Shrub master	2
11.	Disc Harrow	2
12.	Zinda	1
13.	Peas drill machine	1
14.	Wheet drill machine	1
15.	Disc plough	1
16.	Front Loader	1
17.	Prunner	1
18.	Washing pump	1
	Total	**37**

Pheromone Traps

In order to prevent the white fly attack on the kinnow orchards Citrus Estate Hoshiarpur is providing Pheromone Traps. These traps act as indicative measure to the farmers regarding the attack of the white fly.

Farmer's Feedback

The registered farmers of Citrus Estate Hoshiapur are very much satisfied with the technical support and facilities provided to them.

JIT visit to District-Hoshiarpur

S.N	Name of the Beneficiary	Address	Crop	Year of Plantation	Area in Hect.	Nos plant-ed	Nos. surviv-ed as on date of inspecti on	% age of survival	Remarks
1.	Gurinder Kaur W/o Jatinder Singh	Village-Kukran, Block Garhshankar	Kinnow Mandarin (Rejuvenation & drip)	20.6.2007	2.0	1100	1080	98.2	• Rs. 30,000/ subsidy were given in kinds. • Orchard was well maintained but facing problems of leaf miner, thrips, phytophthora, root rot and fruit drop, advised accordingly for control of pest / diseases. • Drip installed by M/S Jain irrigation has not working properly; the matter was discussed with Govt. authorities and local dealer for immediate correction.
2.	Dalbir Singh s/o Gurdev Singh	Village-Kukran, Block-Garhshankar	Kinnow Rejuvenation & Drip	2006-07	2.00	11.00	1075	97.7	• Rs. 30,000 was given as subsidy (in kinds) • Orchard is well maintained but some problems of fruit drop, thrips, leaf minor noticed, advised to spray micronutrients and pesticide for control. • Drip installed but not in

									used, flood irrigation was done, advised to correct the defects.
3.	Balihar Singh S/o Gurubakhash Singh	Vilage Badhoan Block Mohilpur	Kinnow (Rejuvenation & Drip)	2006-07	2.00	1080	1020	94.4	• Rs. 30,000 given as subsidy under rejuvenation programme. • Orchard is well maintained but disease / pest noticed, advised to spray pesticides accordingly.
4.	Gunraj Singh S/o Jaswant Singh	Village Bajwara Hoshiarpur	Naturally ventilated poly house, 1008 (Sq. m), Gerbera .	2011-12	1008 sq. m	-	-	-	• Subsidy Rs. 467500 was given for structure. Problem of Thrips and viruses, advised to control • Market tie up has been done.
5.	Harpreet Kaur w/o Gunraj Singh	-do-	-do-	2011-12	2008 sq. meter				• Rs. 4,67500/ given as subsidy vide cheque No. 004130, dated 2.11.2012. • Farmer growing tomato crop which is in good condition. • Advised to spray neem formulation for control of pests at initial stage.
6.	Gurpreet Kaur W/o Sri Mohinder Lal	Village - Salempur Block-Hoshiarpur II.	Kinnow Mandarin AEP / Drip (High density)	2010-11	1.45	920	900	97.8	• Total subsidy released Rs. 58000 to farmer. • Sunburn, leaf minor, bacterial canker, fruit drop, noticed

									maximum, advised to control pest / disease by applying pesticide / micronutrients.
7.	Mohinder Lal S/o Shri Rkha Ram	Village-Bohan Block-HSP-II	Pack house (kinnow)	2011-12	-	-	-	-	• Assistance of Rs. 1.50 lakh was given to farmer. • Construction work is over, being utilized properly.
8.	S.S. Bajwa	Village Purhiram Block HSP I	Cold Storage (3974.4 MT) & Ice factory	2010-11	-	-	-	-	• Maize, peach, apple, potato / vegetables and kinnow are being kept. • Total subsidy of Rs. 9061632 / released.
9.	Harsunjeet Singh S/o Harbhagat Singh	Village-Khanpur Thiara, Block HSP II	Pack house	2010-11	-	-	-	-	• Subsidy 1.5 lakh released and being utilized for mushroom, flowers and vegetables.
10.	Harsunjeet Singh S/o Harbhagat Singh	Village Khanpur Thiara, Block HSP II	Mushroom compost unit (Botton type mushroom)	2011-12	-	-	-	-	• Subsidy Rs. 10,0000/- lakh has been released vide cheque No. 031244, dated 22.6.2011. • Composing is being done to cultivate button mushroom in winter. • Electricity tariff should be at per with Agriculture rate instead of industrial rate being paid by mushroom farmer. • Pollution control Board should not interfere in mushroom growing

									trade.
11.	Shankar Nursery (Chaman Lal Sood)	Village P.O. Chotial Dharmshala Road, Hoshiapur II	Kinnow plants produced and sold (1.00 lakh/85000) @ 30/per plant	2010-11	Shed net 40300 sq. ft.	Capa-city 102000 plants			• Subsidy Rs. 12.5 lakh given to beneficiary out of 27 lakh proposed. • Rs. 25,50,000 realized against sale of plants.
12.	Citrus Estate	Hoshiarpur (NHM)							• This is a part of the Punjab Govt. is new approach to shift agriculture focus away from traditional water and soil depleting cropping pattern and to encourage non conventional farm activity for large scale citrus cultivation in the State.
13.	Gurcharan Singh Kulwant	Bohan ,Hoshiarpur II	Carrot washing machine	2011-12	-	-	-	-	• Total subsidy Rs. 60,000/- was given on this unit and in working condition. • Need subsidy for pond to store water required for washing.

Activity visited by JIT

- Area expansion of kinnow
- Rejuvenation of kinnow
- Drip under kinnow
- Naturally Ventilated Poly house
- High Density Orchard of Kinnow with drip
- Pack house (floriculture) / shed net.
- Cold storage
- Mushroom compost unit
- Private Model Nursery of kinnow
- Citrus estate
- Carrot washing machine

Observation

1. JIT visited private model nursery named as Shankar Nursery owned by Shri Chaman lal Sood, Hoshiarpur II to be of exemplary status and able to lead the area in production of elite planting material of kinnow for the State. The mother plants of kinnow maintained in the net house were also visited and found free from viral diseases except few insect damaged leaves.
2. Drip installed by various agencies in Kinnow is not properly functioning due to release of less water. Technical problems noticed in the orchard and due to this problem farmer abandoned drip and flood irrigation is given to plants which invite Phytophthora problem in orchards.
3. Training on canopy management needs to be imparted at initial stage so that tree structure is developed.
4. Thrip, leaf minor, micro-nutrient problems, bacterial canker, fruit rot and fruit drop are major problem in kinnow, advised them accordingly to control the pests timely.
5. Team also visited citrus Estate is new approach to shift agriculture focus away from traditional water and soil depleting cropping pattern and to encourage non conventional farm activity for large scale citrus cultivation in the state. Lab is well equipped for identification of soil / plant hunger and identification of pests / diseases with latest technology.

6. Visited Mushroom compost unit, having all modern facilities to prepare compost for cultivation of button mushroom. Farmers complained about the electivity tariff which is not at par with Agriculture. As I was told that mushroom comes under industry as per Punjab Govt. Beside this farmers are also facing problem from pollution control board during cultivation of mushroom. Mushroom growers expect clear instruction from the State Horticulture Mission so that their problems are resolved.
7. NHM Board with log was present at sites.

GURDASPUR DISTRICT

Gurdaspur is situated at 32° 02'N latitude, 75° 24' E Longitude and at an elevation of 260 meters above mean sea level. It is surrounded by Hoshiarpur district of Punjab in the east, Pakistan in the West, states of Himachal Pradesh and Jammu and Kashmir in the North and district Amritsar of Punjab in the South

The district comprising total geographical area of 3, 56,000 hectares (7.1% of the state area) consists of sub – division, 5 tehsils, 16 blocks and 1642 villages. All the Villages of the district connected with roads to different towns and headquarter. The population of the district as per 1991 census is 17.57 lakh (8.7% of the State) out of which 78% rural Density of population is 492 per sq. km. Literacy among rural population (58.4%) is lower than the urban population (73.7%) Average Literacy rate of the district (61.8%) is higher than state average.

The average size of holding is 2.33 ha Total farming families in the district are 1, 13,208 out of which 5,082 farming families are schedule caste. About 40% holdings are marginal (< 1 ha) and 22% are small (1-2 ha). There are only about 2,359 farm holdings which have average farm size of >10 ha. The percentage of small and marginal holding in the district is considerably high. As it is evident from table 1, the number of semi- medium farm families and area owned by them have increased while that of large farm families has decreased mainly due to fragmentation of large and holding. There are about 11,357 tractors, 67466 tube wells.

The Gurdaspur District is predominantly and expanse of the deposits Indus - river system comprising rivers Ravi and Beas. River Ravi forms a boundary with Jammu and Kashmir and later with Pakistan on the International border, River Chakki, a tributary of Beas forms the boundary of district with Himachal Pardesh before entering into the district at Mirthal.

Soil of District

Soil of District is brown to dark brown in colour with marked variation in clay particles. In general soil varies from medium to heavy in texture. Part of the area in the district particularly

in Kalanaur and Dera Baba Nanak blocks are salt affected, water logged and water prone. Part of the area in Dharkalan blocks of district is prone to soil erosion.

Sub soil is suitable for irrigation. About 80% of the gross cultivated area of the district is irrigated. The canal irrigation is available in about 35.5% area which is supplemented with tube well irrigation) whereas remaining 64.5% of net irrigated area is covered by underground water which is lifted by electric (mainly) or diesel operated pumping sets. Underground water is deep in Dhar, Pathankot, Dinanagar, Kehnuwan and Shri Hargobindpur blocks where depth of water varies from 98 meters to 300 metres.

The district has high rainfall and high humidity conditions which are favourable for the development and spread of insects –pest and diseases. The District represents (sub-soil) less hot climate . The average annual rainfall of the districts 886.7 mm. About 60% of the total rainfall is received from July to September. The Mean monthly temperature varies from 12 C in January to 33° C in June with annual mean temperature of 23.2° C Upper reaches,

AGRO-CLIMATIC REGIONS

The district Gurdaspur divided into three Agro – Climatic regions, Brief description of theses regions as follows.

I) **Sub- mountain undulating region**: This region comprises Pathankot, Dharkalan, Narot Jaimal Singh and Bamial blocks of the district. Large numbers of streams which originated in the Shivalik hills have produced vary uneven topography. Lower Shivalik hills in the north-east of the district sandwiched between Jammu and Kashmir and Himachel Pradesh in the hilly track of the district. Altitude of this region varies between 300-900 metres.

The hill ranges are mostly sandy and support only sparse vegetation. Due to variation in degree of slope, run off rate is high in upper reaches. Steep gradient of land , bare land surface and heavy rains cause severe soil erosion . This area needs massive affrications

The soil texture of this region varies from pure sand to silt to fine clay. The soils are generally shallows in the hills and quite deep in the plains. Underground water reservoir is

inadequate but quality of water is good. The annual rainfall is more than 900 mm. The important fruits crops of this region are Litchi and Mango.

II) Undulating plain region:

This region includes Gurdaspur, Dinanagar, Dhariwal, Kahnuwan, and some parts of Shri Hargobindpur and Dera Baba 'Nanak blocks' of District. Slope of the land is less steep than that of Sub- mountain undulating region.

Numerous drains and canals transverse this region, Number of streams is less than sub-mountainous undulating region. Annual rainfall of this zone is 800-900 mm. The combination of moderate temperature and high humidity makes this region most congenial for the development of plant diseases and insects –pest attack.

Soil of this region is medium to heavy in texture. Mild to moderate alkalinity problems prevail in the soils of Kalanaur and Dera Baba Nanak. The important fruits crops of this region are Litchi, Mango, Citrus and Guava etc

III) Central Plain Region

This region comprises Batala , Fatehgarh Churian ,Quadian , some parts of Dera Baba Nanak, Shri Hargobindpur and Dhariwal blocks.This region has homogeneous land with gentle slope and therefore it is free from wind or water erosion. In Dera baba Nanak and Batala blocks the medium to fine sand available at 50-65 meters depth. The tube wells can be installed within 100 meters depth. Quality of underground water is good. The annual rainfall is about 800 mm.

Soil of this region is medium to heavy in texture. Soil is generally well drained. Moderate alkali problems exits in Dera Baba Nanak and Fatehgarh Churian blocks. Part of the area in the north of Dera Baba Nanak and south of Shri Hargobindpur is prone to flood.

The important fruits crops of this region are Litchi, Mango, Citrus and Guava etc and in part of Dera Baba Nanak Cauliflower-Cauliflower-Celery is an important sequence. In areas

surrounding Batala and Quadian blocks seed production of potato is also taken up on large scale by farmers. This plain Zone lying between rivers Ravi and Beas is locally known as 'Majha.'

Agro Ecological Situation

To provide an appropriate for harmonious agriculture development, it is desired that problems related to different farming situations an potential of different area be pin pointed. Keeping in view the type of soil, source of irrigation and topography five situations have been identified in the district Brief description of each situation is given as under.

i) Sub –mountain undulating rainfed Loamy sand soil:

This situation comprising Pathankot, Dharkalan , Narrot Jaimal Singh and Bamial blocks of the district Gurdaspur . This area is mostly rainfed. Soil type varies fom sandy to sandy loam. Total number of villages in this situation are 421 comprising an area of 88562 ha out of which 59% cultivated Potato ,peas ,tomato, cauliflower and muskmelon among vegetables, mango ,litchi, aonla and citrus among fruit are also important horticulture crops of this area.

ii) Undulating plain, tubewell irrigated, clay loam soil:

This situation comprises mainly Gurdaspur, Dinanagar, Kahnuwan and parts of Shri hargobindpur and Dhariwal blocks .Soil type varies from clay loam to sandy loam.Total number villages in this situation are 494 comprising an area of 87836 ha. Out of which 67505 ha (77%) is cultivated. The important horticulture crops potato, peas, Carrot, cauliflower, cabbage, Brinjal, Chillies among vegetables and Mango, Litchi and citrus among fruits. Raddish for seed production and floriculture are also coming up.

iii) Plain, topography tubewell irrigated alkaline soils:

This situation comprises Kalanaur and parts of Dera Baba Nanak of the district almost entire areas tubewell irrigated as well as by canals also. Soil type varies from sandy loam to caly. This area also salt affected, water logged and flood prone .River Ravi runs along the border of this area .There are 494 villages in this situation comprise an area of

49614 ha. Out of which 38962 ha (77%) is cultivated .Major crops of Dera Baba Nanak blocks are celery, cauliflower and potato and citrus, Guava and pear among fruits.

iv) ***Plain topography ,tubewell irrigated ,loamy soil***:

Major Blocks covered under this situation are Batala, parts of Dhariwal and Fatehgarh Churian .Out of total area of 71800 ha. 86.7% is cultivated which is spread over 319 villages .Soil is medium in texture. Vegetables crops potato, cauliflower, radish, cabbage, turnip, chilies, peas and carrot and fruit crops pear, guava etc are cultivated.

v) Plain topography ,canal irrigated sandy loam soil:

This situation comprises parts of shri hargobindpur and Quadian blocks source of irrigation is canal which is supplemented with tubewell irrigation. Soil type in this situation varies from sandy loam to clay loam. There are 168 villages having 51816 ha. area out of which 76% is cultivated .Among vegetables are potato, cauliflower, brinjal ,carrot tomato and chillies and among fruits are pear, guava and kinnow etc are cultivated.

Horticulture Based Input Supplying Agencies in District Gurdaspur

Sr. No.	Name	Status	No
A.	**Horticulture Nurseries**		
1.	Department of Horticulture (Quadian & Gurdaspur)	Public	2
2.	PAU. Regional research Station, Gurdaspur Public	Public	1
3.	Diwan garden & Nursery Phool Piara Private	Private	1
4.	Dojhi Ram fruit nursery Chak Madho Singh	Private	1
5.	Ram Kishore Kilash Chand Chak Madho Singh	Private	1
6.	Ohari Nursery, Dinanagar	Private	1
7.	Gobind Garden & Nursery	Private	1
	Mann Nursery, Gurdaspur	Private	1

B.	**Vegetables Seed Production Units**		
	1. Vegetables Seed Farm, Gurdaspur, Public	Public	1
	2. Vegetable Seed Farm, Sohal	Public	1
	3. Gopal Seed Farm	Private	1
	4. Gurdaspur Seeds Farm	Private	1
C.	Cold Store (Vegetables & Fruits)	Private	7
D.	**Processing Units**		
	1. Community Canning Centre	Public	1
	2. Glaycier Food Products	Private	1
	3. Green Gold Haldi processing Plant Sallopur	Private	1
	4. Monsoon Food Product Nainekot	Private	1
E.	**Fertilizers and pesticides branches**	--	2
	1. IFFCO	--	2
	2. MARKFED	--	8
	3. PUNJAB AGRO	--	5
	4 Private Dealers (Fertilizers)	--	740
	5. Private Dealers (Pesticides)	--	378
	6 Seed Dealers	--	39
F.	**Credit Institutions**		
	1. Punjab Agricultural Development Bank	--	4
	2. Nationalized Banks	--	148
	3. Cooperative Societies	--	178
G.	**Integrated Mushroom Unit**		
	Kahlon Mushroom Unit, Dinanagar		

Department of Horticulture:

The District Horticulture office is located at Gurdaspur and is headed by Deputy Director Horticulture (DDH). There are 14 Posts of Horticulture Development Officer (HDO) in the district. In Extension the provision of posts at Dhar, Pathankot, Sujanpur, Ghiala, Dinanagar, Gurdaspur, Qadian, Batala, Dera Baba Nanak, Fatehgarh Churian and in addition there are one

post of Horti. Dev. Officer at Seed Farm Gurdaspur and one at Nursery Gurdaspur, Department of Horticulture is responsible for the implementation of various govt. schemes. It provides technical guidance to the farmers by conducting field demonstrations, adaptive trails and organizing training camps. The department is also responsible for the supply of good quality seed of Vegetables, flowers, Mushroom etc. and also supplies Fruit and Ornamental plants to the farmers.

Two nurseries of fruit and ornamental plants are located at Gurdaspur and one at Qadian. Two Vegetable Farms in which the good quality seed produced are located at Gurdaspur and Sohal. There is one nursery of PAU. Regional Research Station at Gurdaspur and 6 Private registered Nurseries which supply the good quality of fruit plant as per demand of farmers.

Status of Horticulture Crops in District Gurdaspur

In Gurdaspur district Mango and Litchi are the most important crops. Both Fruit crops are very refreshing delicious nutritious and fetch good return for the growers because these are available during the hottest period of the year. There is tremendous scope for the expansion of fruit cultivation in terms of area and productivity since Mango is a predominant crop occupying considerable area.

Present Status of Fruit Crops

Sr. No.	Name of Fruit	Area in Ha.	Production (M. tonnes)
1	Kinnow	615.4	6154
2	Malta	70.6	706
3	Nimbu	4.9	49
4	Mango	2100.1	22004
5	Litchi	1172.5	11725
6	Guava	144.9	1449
7	Pear	56.7	745
8	Peach	30.4	407
9	Plum	26.8	245
10	Ber	2.4	60
11	Amla	101.4	856
12	Banana	10.4	--
13	Others	7.8	78
Total		**4344.3**	**44478**

I) Mango: - Mango is an important crop of District Gurdaspur. It is being cultivated in Dhar, Pathankot and Dinanagar Block. The Climate of this block is suitable for mango cultivation. The productivity of the Mango crop is increased by rejuvenation and replacement of senile plants from the orchard. The fruits of Mango are used to make Mango Pepper, Ambchoor etc.

II) Litchi: - Litchi is Cultivated is sub mountain region of the Gurdaspur Distt. Specifically in Pathankot, Sujanpur, Narot Jaimal Singh, Dinanagar and Gurdaspur. The annual rainfall of these blocks is 900 mm. High humidity in the atmosphere is very favourable for producing good quality Litchi fruits in the region. There are tremendous scopes of expansion of area under litchi cultivation.

III) Kinnow: Kinnow is cultivated in the surrounding of Ghiala, Gurdaspur, Dinanagar, Dera Baba Nanak, Dhariwal and some part of Sri Hargobindpur etc. blocks of the Distt. For the cultivation of citrus crop[s sandy loam soil is very suitable. The major area falls in surrounding of Ghiala Village. The Kinnow Growers are getting good income from their orchard. Therefore the area under this crop is increased subsequently in future.

Vegetables: - The important vegetable crops are Potato, Cabbage, Cauliflowers, Tomato, Brinjal, Chilly, radish, carrot, peas and vine crops are grown in the district Area production and productivity can be substantially increased through adoption of package of practices. The early vegetables are produced by using of plastic culture. The farmers are adopting this new technique largely. Therefore the area under vegetable increased tremendously. There is three big fruit and vegetable markets at Pathankot, Batala and Gurdaspur. The Pathankot market is big market which is linked with the Jammu and Kashmir, Himachal Pradesh.

Spices and Aromatic Crops: - Celery which is locally known as Karnauli is cultivated in Batala, Dera Baba Nanak Block. Celery is grown under Tube well irrigated condition on clay loam type of soil.

Farmers are not aware about the new techniques. Therefore department is imparting new techniques by demonstration in the fields and nursery raising method of improved cultivation practices etc.

The Turmeric is also is spice crops. The area under this crop is increased in Kahnuwan, Qadian, Gurdaspur, Kalanaur etc. For the processing of Turmeric, one processing unit has established under NHM Scheme.

Area under Chilli and Garlic is also increased because the farmers adopted to new techniques as bed sowing, seed treatment, fertilizers management, insect, pest is cease also control which is demonstrate in the field of the farmers by the department. The farmers are getting good income from spices and aromatic crops.

Vermiculture and Organic Farming

By the awareness of the people about the health, there is a big demand of organic food. Therefore the organic Vegetable and fruits can produce by using vermin compost. The Organic manure is made with help of vermiculture. The department has established 102 vermiculture units and so many farmers are keen to established vermiculture units. Regarding organic farming one Cluster each of Litchi and Tomato has been identified.

Bee-Keeping: - To enhance the productivity of fruits and vegetables with pollination through bee-keeping, the Department is giving assistance to the horticulturists on bee-keeping.

Self Employment and Value Addition

To enhance the post harvest management to processing units under self employment and value addition has been installed under NHM scheme at Kahnuwan Distt. Gurdaspur. One processing unit based on turmeric processing and other for Sauce, Jam, Squash, etc. They are getting good income through self employment and value addition.

Protected Cultivation

1. **Low Tunnel: -** Farmers started growing of vegetable crops for getting early production and income by protecting vegetables from frost in the month of December and January under low tunnel. This technique has been started with the help of NHM Scheme. The farmers increased the area every year under low tunneling and getting more income than without protected cultivation.

2. **Poly House/Net House: -** The farmers had been installed 17 poly houses with the assistance of NHM to produce Capsicum, Tomato, Cucumber and off season Dhania and Palak . The farmers are satisfied to produce vegetables in poly house because the quality is better than the crops that are grown in open fields. Market demand is more due to less use of pesticides in poly house crops

The area under different Vegetables & Production in district Gurdaspur upto year 2011-12

Sr No	Vegetables	Area in ha.	Production(tonnes)
1	Potato	788	16536
2	Onion	132	1933
3	Garlic	43	387
4	Tomato	200	6539
5	Brinjal	185	5972
6	Cauli flower	1352	27541
7	Cabbage	85	1690
8	Lady finger	160	1243
9	Chilli	86	1824
10	Pea	374	2735
11	Vine vegetables	699	11998
12	Root Vegetables	676	10688
13	Others	296	4833
14	Musk Melon	79	1199
15	Water Melon	10	182
	Total	**5165**	**95300**

Scope: - Farmers are getting more income from orchards than agronomic crops. The agronomic crop has needed more irrigation water, labour, time, Machinery etc.

So, the cost of production is more than orchards but the profit is less. Therefore with the help of NHM assistance the area under Orchards increased from 3360 ha in 2004-05 to 4344 ha in 2011-12, so the total area increased 1000 ha in seven years

Progress Report under NHM For the Year 2011-12 Distt.Gurdaspur

Sr. No.	Activity	Balance as on 31-3-2011		Target 2011-12		Total Target 2011-12		Achievement						Balance Funds		Remarks
								Opening Balance of Progress upto 29-2-2012		Progress during the month 31-3- 2012		Total Progress				
		Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	
1	Estb. of New orchards (hac)	---	---	113.8	1529985	113.8	1529985	91.3	1271386	22.5	258599	113.8	1529985	---	---	---
2	Maintenance of garden 2nd 2010-11 (hac.)	---	---	126.66	508367	126.7	508367	126.26	506247	0.4	2120	126.66	508367	---	---	---
3	Maintenance of garden 3rd 2009-10 (hac.)	---	---	89.4	603450	89.4	603450	89.4	603450	---	---	89.4	603450	---	---	---
4	Banana Cultivation (hac)	---	---	2	62401	2	62401	2	62401	---	---	2	62401	---	---	---
5	Banana Cultivation 2nd inst. 2010-11 (hac)	---	---	2.25	23400	2.25	23400	2.25	23400	---	---	2.25	23400	---	---	---
6	Spices and Aromatic crops	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7	Vermi compost (unit)	---	---	6	180000	6	180000	2	60000	4	120000	6	180000	---	---	---
8	Pollination through Bee-Keeping	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
9	Self employment and value addition on field	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

10	Protected cultivation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
	1.Green House(High tech) (sq.m)	---	---	9	4207500	9	4207500	8	3740000	1	467500	9	4207500	---	---	---
	2.Green house(Normal)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	3.Mulching	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	4.Shading Net	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	5.Low Tunnels	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11	Horticulture Mechanization (power machine)	---	---	12	547125	12	547125	12	547125	---	---	12	547125	---	---	---
12	Mission Management	---	16447	---	138738	---	155185		105083	---	4259	---	109342	---	45843	---
13	Bank interest	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14	Power Sprey Pump			1	17000	1	17000	1	17000	---	---	1	17000	---	---	
15	Preservation unit (upgradation)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16	Exposure Visit(Out of the State)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17	Exposure Visit (Within State)	---	---	50	90000	50	90000	50	90000	---	---	50	90000	---	---	---
18	Seed Production (Patato) Public Sector (hac.)	---	---	14	700000	14	700000		404874	---	191993	---	596867	---	103133	
	Total	**---**	**16447**	**---**	**8607966**	**---**	**8624413**		**7430966**	**---**	**1044471**		**8475437**	**---**	**148976**	**---**

Visit of JIT -District Gurdaspur

S.N	Name of the Beneficiary	Address	Crop	Year of Plantation	Area in Hect.	Nos planted	Nos. survived as on date of inspection	% age of survival	Remarks
1.	Jornail Singh S/o Karan Singh	Village Jalmara Jattan Gurdaspur	Kinnow with sprinklers	2011-12	0.7	275	275	100	• Subsidy amount Rs. 15903/ paid. • Water suckers to be removed. • Control of termite and leaf miner suggested • Need tractor (mini) for mechanization from NHM.
2.	S. Singh S/o Subash Chander	Village - Kounterpur Gurdaspur	Kinnow	2011-12	1.0	660	660	100	• Subsidy amount Rs. 38167 paid. • Water shoots leaf miner, bacterial canker to be managed. • Gram as inter crop being practiced.
3.	Lekh Raj S/o Jashwant Singh	Village - Gheala Gurdaspur	Kinnow	2011-12	0.7	275	275	100	• Rs. 15903 paid as subsidy. • Very good canopy management done by farmer. • Leaf miner and bacterial canker to be control.

									• Inter cropping with pea being taken.
4.	Narain Singh S/o Basant Singh	Village-Chakmanson, Gurudaspur	Kinnow with sprinkler	2011-12	1.5	900	860	97	• Rs. 50890 paid as subsidy to farmer. • Inter cropped with radish • Litchi + Banana + Kinnow are also grown as inter crops. • Bacterial canker noticed in mango.
5.	Narbinder Singh S/o Daljeet Singh	Village Mehandipur, Gurdapur	Litchi (Calcutta at Dehradoon)	2006-07 2008-09	2.00	250	240	99	• All subsidy amounts paid. • Peach is taken as inter crop. • Leaf folder noticed on litchi, and advised accordingly.
6.	Sri Baldev Singh (Raj cold storage)	Village Rawal near Ranjeet Bagh (Gurdaspur)	Cold Storage (3999.26 MT)	2011-12	-	-	-	-	• Subsidy of Rs. 9598224 released to farmer. • Apple, Peach, Pear and other fruit including potato are kept in full capacity.
7.	Sukhwinder Kaur	Haripur, Near Radh Soami Satsang, Ghai, G.T Road, Dinanagar Gurdaspur	Integrated mushroom unit.	2011-12	-	-	-	-	• Total amount of Rs. 25,53000 have been released by NHM. • Unit is running smoothly.
8.	Ravinder Singh S/o Khajan Singh	Village Mehandipur, Gurdaspur	Litchi (Culcuttia & Dehradoon)	2008-09	1.00	110	108	98	• Subsidy amount of Rs. 20250 paid to farmer.

									• Litchi inter cropped with peach. • Leaf folder to be controlled • Pruning to be done as suggested.
9.	Pooran Singh S/o Khajan Singh	Village Mehandipur, Gurudaspur	Litchi (HD) , (Calcuttia & Dehradoon)	2009-10	0.8	110	110	100	• Good management. • Advised to train plants.
10.	Jaswinder Singh S/o Daljeet Singh	Village Mehandipur, Gurudaspur	Litchi (Calcuttia & Dehradoon)	2008-09	1.00	125	120	97	• Rs. 22500 paid as subsidy to farmer. • Inter cropped with low chill fruits. • Insect problem in litchi, advised to control • Good Growth and canopy management.
11.	Saurav Singh S/o Yuvraj Singh	Village Chak Madho Singh, Gurdaspur	Litchi (Calcuttia & Dehradoon)	2011-12	1.6	125	110	88	• Subsidy Rs. 10575 released by cheque. • Good growth but leaf roller noticed.
12.	Sansaar S/o Deputy Ram	Village Pijore Pathankot, Gudrdaspur	Litchi (Dehradoon)	2010-11	1.8	172	152	88	• Subsidy Rs. 16920 paid to farmer. • Available market is Pathankot. • Advised to control pests.
13.	Smt. Punam Gupta	Bhur, Gurdaspur	Drip (Kinnow)	2009-10	4.19	6 M x 6 m	Jain Irrigation	-	• Working smoothly.
14.	Smt. Rachna Pathania W/o Chain S. Pathania	Bhur Gurdaspur	Micro Sprinkler (Vegetable)	2009-10	1.00	1x1 M	Jain Irrigation	-	• Subsidy amount paid in full. • Sprinkler working

									satisfactory.
15.	Jairnail Singh	Village Talmera Jattan Pathankot	Kinnow micro sprinkler	2011-12	1.00	10x10 M	Jain irrigation		• Subsidy amount paid to farmer. • Working satisfactory.
		Chak Madho Singh, Gurdaspur	Vermi compost unit	2006-07	-	-	-	-	• Subsidy Rs. 30,000 paid to farmer. • Compost is used in Litchi orchard. • Need motor operated mess for cleaning of compost.

Activity visited by JIT

- Area expansion programme of kinnow
- High Density of Litchi Plantation.
- Vermi compost
- Drip / sprinkler / vegetable and fruit crops
- Integrated mushroom unit.
- Cold storage
- Poly house / shed net.

Observation

1. Team noticed that there is quick adoption of new technologies by the villagers. There was good response for drip irrigation, farm mechanization, high density plantation and mushroom cultivation in the district.
2. Climatic condition of the district is suitable for the cultivation of different types of Fruit like Litchi, mango, kinnow and other low chill fruits.
3. There is great potential to develop protected cultivation of flowers and off season vegetables along with necessary inputs.
4. Team noticed due to good paying capacity and changing food habits in urban areas demand for seasonal vegetables, spices (turmeric / zinger) and fruit canned, preserved processed and ready to serve horticulture produce is expanding day by day.
5. Overall performance of the district is good under area expansion programme. Plants are getting due attention under frequent technology transfer by the official in the district.
6. The canopy management in litchi, peach and other fruits crops exists with good intercrops.
7. Control of termites, leaf miner, water shoots, Bacterial canker (in citrus), leaf folder (litchi) has been advised accordingly.
8. Litchi is intercropped with peach, banana + kinnow is usual practice but advised farmer not to take banana as inter crop in litchi.
9. Farmers need motorized machine for cleaning vermi compost for large production.
10. The NHM logo with display board placed at most the sites.

AMRITSAR DISTRICT

District profile

Amritsar is one of the border district, lies in the North West frontier of Punjab. The District comprises of Four Tehsils. (Amritsar-one, Amritsar-Two Ajnala and Baba Bakala), Five Sub-Tehsils (Attari, Lopoke, Majitha, Ramdass & Tarsika) and Nine Community Development blocks (Ajnala, Chogawan, Harsha Chhina, Jandiala Guru, Majitha, Rayya, Tarsika, Verka & Attari).

The geographical area of the district is 2.64 lakh hectares, out of which 2.17 lac hectare is under cultivation. 99 % cultivated area is irrigated. 15% area is canal irrigated & 84% area is tube well irrigated. The cropping intensity of the District is 196%.

According to agriculture censes 2010-11, this district has 70705 farming families. Out of which 3030 are schedule castes farming families. maximum farming holdings (26405) fall under semi medium category (2-4 hectare). The wheat, Paddy, Sugarcane, Potato, Peas, pear & oil seeds are major crops of the District Amritsar.

It falls in the central alluvial plains. The soil of Amritsar District is sandy loam to loam. It slopes gently to the high right bank of river Beas. Block Ajnala, Harsha Chhina, Chogawan have alkaline soils. Amritsar District experiences extremes of climatic conditions. The average minimum & maximum temperature is 0.8^{o}C to 1^{o}c & 41.8 ^{o}C to 46.9 ^{o}C in winter & summer respectively. The mean annual rainfall fluctuate around 415mm.

HORTICULTURE STATUS OF DISTRICT AMRITSAR 2011-12.

Net area	-	**2,23,000 ha.**
Total area under fruits	-	**2171 ha.**
Total area under Vegetables	-	**16437 ha.**
Share of Major fruits		
Pear	-	**826 ha. (38%)**
Kinnow	-	**483 ha. (22%)**
Gauva	-	**383 ha. (18%)**

Share of Major Vegetables

Pea	-	**5066 ha. (31%)**
Potato	-	**4990 ha. (30%)**
Tomato	-	**1121 ha. (7%)**
Total area under Flowers	-	**21 ha.**
Share of Major flowers		
Marigold	-	**53%**
Gladiolus	-	**22%**
Roses	-	**17%**
No of mushroom Units	-	**31**
Production(Qtl)	-	**1749**
No. of Net Houses	-	**110**
Govt. Units in Asr. Distt.		
Govt. garden & Nursery Attari	-	**101 acre**
Fruit Production Lab at Khalsa College Amritsar.	-	**1**

Progress Report under NHM (Year 2011-12) Upto 31st March, 2012 (District Amritsar)

Component	Unit	Target		Previous Achievement		Achievement during the month		Total Progress		Balance		Number of benefi--ciary	Remarks
		Phy	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.		
Establishment of new gardens													
a) High density planting for Citrus orchards at the spacing 6mx3m. i)Kinnow	ha.	23.5	5,64,000/-	0.3	7,200/-	22.6	5,42,400/-	22.9	5,49,600/-	0.6	14,400/-	18	
Normal Spacing Kinnow Guava Pear	ha.	 0.8 6.0 4.4	 12,722/- 59,266/- 65,340/-	 - 3.6 -	 - 35,561/- -	 0.8 2.4 4.4	 12,722/- 23,705/- 65,340/-	 0.8 6.0 4.4	 12,722/- 59,266/- 65,340/-	 - - -	 - - -	 2 6 4	
Maintenance of Garden (10-11) 1st Inst. (a) High density													
(b) Normal spacing													
i) Kinnow	ha.	8.2	41,668/-	6.0	30,006/-	2.2	11,662/-	8.2	41,668/-	-	-	17	
ii) Guava	ha.	3.0	9,876/-	1.8	5,926/-	1.2	3,950/-	3.0	9,876/-	-	-	6	
iii) Peach/Pear		6.4	31,680/-	-	-	6.4	31,680/-	6.4	31,680/-	-	-	4	
Maintenance of Garden (09-10) (2nd Inst.) j) Kinnow jj) Guava iii) Pear	ha.	20.4 1.0 10.80	1,37,700/- 6,750/- 72,900/-	11.1 1.0 -	74,925/- 6,750/- -	9.3 - 10.80	62,775/- - 72,900/-	20.4 1.0 10.80	1,37,700/- 6,750/- 72,900/-	- - -	- - -	21 2 6	
Banana (T.C) Plantation	ha.	1.25	39,000/-	1.25	39,000/-	-	-	1.25	39,000/-	-	-	2	
Maintenance of	ha.	16.6	1,72,640/-	10.3	1,07,120/-	6.3	65,520/-	16.6	1,72,640/-	-	-	45	

Banana (T.C)													
Spices													
Green House(Naturally ventilated System (i) Tubular structure	Sq.m	3000	14,02,500/	2000	9,35,000/-	1000	4,67,500/-	3000	14,02,500/	-	-	2	
2. Plastic Tunnels	Sq.m	376500	46,49,748/-	376500	46,49,748/-			376500	46,49,748/-	-	-	666	Physical Progress was made during the year 2010-11
Component	Unit	Target		Previous Achievement		Achievement during the month		Total Progress		Balance		Number of Beneficiaries	Remarks
		Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.		
Vermi compost Units	Unit	2	60,000/-	2	60,000/-	-	-	2	60,000/-			2	
Pollination support through beekeeping													
(b) Honey bee colony	No.	290	2,32,000/-	250	2,00,000/-	40	32,000/-	290	2,32,000/	-	-	8	
(c) Hives	No.	290	2,03,000/-	250	1,75,000/-	40	28,000/-	290	2,03,000/-	-	-	8	
Horticulture Mechanization													
(a) Power operated machines/tools including Power Saw and Plant Protection equipments etc.	No.	2	35,000/-	1	17,500/-	1	17,500/-	2	35,000/-	-	-	2	
(b) Power Machines (upto	No.	10	5,37,991/-	8	4,40,641/-	2	97,350/-	10	5,37,991/-	-	-	10	

20 BHP)													
(c) Power machines (20 HP & above													
HRD													
(e) Exposure visit of farmers													
(i) Within the District													
(ii) Within the State													
(iii) Outside the State	No.	50	90,000/-	50	90,000/-	-	-	50	90,000/-	-	-	50	Exposure Visit is made for 3 days
INTEGRATED POST HARVEST MANAGEMENT													
1. Pack house	No.	1	1,50,000/-	-	-	1	1,50,000/-	1	1,50,000/-	-	-	1	
3. Cold storage units													
Mission Management		-	52,034/-	-	42,034/-	-	10,000/-	-	52,034/-	-	-	-	
State level Show/Seminar													
District Level Show/Seminar													
G- Total			86,25,815/-	-	69,16,411/-	-	16.95,004/-	-	86,11,415/	-	14,400/-	874	

Visit of JIT-District- Amritsar

S.N	Name of the Beneficiary	Address	Crop	Year of Plantation	Area in Hect.	Nos planted	Nos. survived as on date of inspection	% age of survival	Remarks
1.	Jitender Pal Kaur	Amritsar- Ambala Road PO Central Jail Amritsar	Poly house/ Green house (Capsicum) coloured	2011-12	2000 sq. m	-	-	-	• Subsidy Rs. 9,35000 has been released • Capsicum is growing well. • No disease problem.
2.	Smt. Narinder Kaur	-do-	Poly house (Coloured Capsicum)	2011-12	1000 Sq. m.	-	-	-	• Rs. 4,67500/ given as subsidy to grower. • Coloured capsicum has been planted on different dates and growing well.
3.	Sri Vikram Paratap Singh S/o Harkan Wal Singh	Village - Gumtala Amritsar	Vermi compost unit	2011-12	-	-	-	-	• Total Rs. 30,000/ given as subsidy. • Good manure is being prepared.
4.	Sri Vishal deep Singh, S/o Harkanwal Singh	Village - Gumtala, Amritsar	Vermi compost unit	2009-10	-	-	-	-	• Total subsidy Rs. 30,000 given to farmer. • Farm refuge may be used judiciously for compost making. • Compost is used for its own.
5.	Jaswant Singh S/o Bela Singh	Village & Po Jetuwal / Amtritsar	Micro sprinkler in Peas.	2011-12	1.0 ha.	-	-	-	• Total subsidy amounting Rs. 2718 was paid. • Sprinkler is being

									used in pea crop.
6.	Karam Jeet Singh S/o Kapoor Singh	Village - Chogawan Sadhpur, Amritsar	Drip Turmeric Onion Tomato	2011-12	1.8 ha	1.2 (lateral to lateral) x 0.4 (Driper spacing)	-	-	• Total subsidy amounting Rs. 77266 was paid to him • Produced turmeric (80 quintal) under flood irrigation whereas 120 Quintal per acre in drip irrigated plots. • Crops were growing healthy except leaf spot-disease in turmeric.
7.	M/s Heir cold storage	Vilalge - Rakh Devidaspur, Amritsar	Cold Storage	2011-12	3393.52 MT	-	-	-	• Total amount Rs. 77,37,225. released. • Potato and Pear were kept in the storage.
8.	Baljit Kumar W/o Puran Singh	Village-Attari, Amritsar	Pear (Pathar Nakh)	2005-06	2.00	-	-	-	• Total subsidy amounting Rs. 45000/- given to well farmer. • Well maintained canopy and plants looked healthy.

Activity visited by JIT

- Area expansion programme of Pather Nakh
- Poly house and green house for vegetable and flower cultivation
- Vermi compost units
- Micro sprinkler in peas and carrot
- Drip in turmeric, onion and tomato.
- Cold storage.
- Turmeric powder making machine

Observation

1. Team informed by the turmeric farmer that 120 quintal per acre yield taken under drip whereas 80 quintal per acre yield was taken under flood irrigation and had more disease problems.
2. Team advised to vegetable growers that excessive withdrawal of ground water if not properly monitored, may create environment problem which may lead to ecological imbalance.
3. Departmental staffs are properly exposed to technical advances in the field of Horticulture and protected cultivation technologies, resulting in adequate technology transfer to farmers.
4. Team felt satisfied with the achievement made in various components in district.
5. Team advised to collect vermi wash along with compost in all units.
6. Most places, NHM logo found displayed with board.

KAPURTHALA

Kapurthala, the legendry province of Maharajas, founded by Rana Kapur and consolidated by Sardar Jassa Singh Ahluwalia, in the middle of eighteenth centry, is one of the small districts of Punjab. A contemporary of awesome invaders-Nadir Shah and Ahmed Shah Abdali, Jassa Singh, the famed sardar not only fortified and protected the province against aggression, but also established it in all its glory. Maharaja Jagatji architect of modern Kapurthala-the Paris of Punjab. Hill aesthetic sense and architectural vision stand embodied beautifully in the genteel elegance of the Jagatjit to name a few of his edifices. A great admirer of French Architecture and British lifestyle, the Maharaja was no less a devout Sikh and a secuklarist, Magnificent Moorish Mosque, majestic Panch mandir and splendid State Gurdwara Sahib stand testimony to this fact. Retaining its princely legacy and marching ahead with contemporary times, Kapurthala has emerged as district contributing significantly to t;he agrarian, industrial and services cultivation, has contributing to the agrarian, industrial and services cultivation, has contributed more than its share in the agricultural output of the state. An overall letup in farm productivity, 47.22 quintals of wheat and 40.27 quintals of paddy per hectare is no mean an achievement. A rail coach factory (RCF) at Hussainpur, spread over 1200 acres of land, is one of the most modern manufacturing facilities of the Indian Railways and one of the largest producers of the state-of-the –art rail coaches in the world. Jagatjit Industries Limited (JIL) at HKamira is a distillery of repute. Phagwara, a distant bifurcate, with its textile, sugar and starch mills, is another industrial hub of eminence. Kapurthala also takes pride in housing the campus of Punjab Technical University (PTU); with a host of technical institutions of the state, including the recently commissioned Caparo School of Manufacturing Technology, set up in collaboration with the University of Biramingham (UK); affiliated to it. A manifestation of leap of imagination is the Pushpa Gujrat Science City-a scientific Museum which takes the visitor straight into an odyssey of the 21st century and beyond. The Kali Vein, now rechristened as the Holy Vein, with one of the most prominent national wetlands-Kanjli, on its embankments, is an epitome of regions piety and ecological heritage of the region. Mostly a stretch of sandy loam alluvial plains, a good part of the land mass of the district prone to floods, most of this area has been rescued from inundation with the construction of Dhusi Bandh, a ridge extending right from Tahil in district Hoshiapur to Harike Barrage in district Amritsar. The

region south of Holy Vein is known as dona and is relatively more sandy in texture. Scanty patches of Kollar affected soils still dot the cultivable horizon in the district, although a vigorous campaign by the State Department of Agriculture has been able to reclaim most of such problematic soils through a host of measures, including monitoring of soil characteristics through Soil Testing Laboratories and supply of subsidized amendments, mostly Gypsum (Calcium Sulphate Dehydrate) to the farmers.

S.No.	**Particulars**	**Statistics**
1.	District Headquarters	Kapurthala
2.	No. of Tehsils	4-Bhollath, Kapurthala, Bhagwara and Sultanpur Lodhi
3.	No. of Blocks	5- Dhilwan, Kapurthala, Nadala, Phagwara and Sultanpur Lodhi
4.	No. of villages	701
5.	Geographical Area	1634 sq. km (1.67 lakh hectare)
6.	Land Utilization	
	Net Sown Area	1.352 Lakh hectare
	Land Put to Non-agricultural Usage	0.292 lakh hectare
	Forest Land	0.020 lakh hectare
	Barren, Uncultivable Land	0.001 lakh hectare
	Fallow Land	0.001 lakh hectare
7.	Major Crops	Wheat, paddy, potato, sugarcane & seasonal vegetables
8.	Soil Type	Central Alluvial Plains
9.	Rainfall	570.2 mm (Normal), 465.0 mm (Actual)
10.	Irrigation	
	Net Irrigation Area	1.5 lakh hectare
	Irrigation Through Tubewells	1.35 lakh hectare
11.	Fertilizers Consumption	192.6 kg. per hectare
12.	Agriculture Support Facilities	
	Mandis	42
	Regulated Markets	5
	Cold Storage	15
13.	Population	
	Headcount	754521

	Population Density	462 per sq. km.
	Sex Ratio	1000:888
14.	Classification of Workers	
	No. of Cultivators	59495
	No. of Agricultural Labourers	35360
	Other Workers	162797
15.	Land Holding	
	No. of Holdings	32673
	Below 1 Hectare	4790
	1 to 2 Hectare	6714
	2 to 4 Hectare	10144
	4 to 10 Hectare	8441
	10 Ha & Above	2584
16.	Area under Orchards (ha)	426
17.	Area under Vegetables (ha)	18726

Information about Geographical Area of District Kapurthala

Operational Holdings in District Kapurthala

Sr. No.	**Holding Size**	**General**		**Scheduled Caste**		**Total**		**Percentage**	
		Area	**No.**	**Area**		**No.**	**Area**	**No.**	**Area**
1.	Marginal (Less than 1 ha)	2621	980	491	810	3112	4790	2.4	14.6
2.	Small (1 to 2 ha)	8150	5971	1006	743	9156	6714	7.1	20.6
3.	Semi-medium (2 to 4 ha)	25091	9493	1664	651	26755	10144	20.9	31.1
4.	Medium (4 to 10 ha)	46880	8176	1388	265	48268	8441	37.7	25.8
5.	Large (Above 10 ha)	40184	2541	642	43	40826	2584	31.9	7.9

Crop wise Land use Pattern in District

Sl. No.	Crop	District Area (Ha)	State Area (Ha)	Percent Share to the State
1.	Wheat	110930	3468000	3.2
2.	Paddy	108440	2642000	4.1
3.	Sugarcane	4190	84000	5.0
4.	Sunflower	3235	17800	18.2
5.	Maize	2960	148000	2.0
6.	Oilseed	720	49000	1.5
7.	Pulses	230	31500	0.7

Information on Soils for the District (Area in ha)

Sl. No.	Name of the Block	Black Soil		Red Soil		Sandy Soil		Sandy Loam		Others	
		Area	%	Area	%	Area	%	Area	%	Area	%
1.	Kapurthala	-	-	-	-	540	1.5	24,570	68.25	10,890	30.25
2.	Sultanpur Lodhi	-	-	-	-	1600	3.6	28,020	62.3	15,380	34.1
3.	Dhilwan	-	-	-	-	720	2.7	17,896	66.3	8,384	31.0
4.	Nadala	-	-	-	-	480	1.7	16,590	59.3	10,930	39.0
5.	Phagwara	-	-	-	-	-	-	20,904	67.4	10,096	32.6

Source wise Irrigation in District Kapurthala

S. No.	Tehsil	Source of Irrigation					
		Canal		Private Tubewells		Govt. Tubewells	
		Area (Ha)	%	Area (Ha)	%	Area (Ha)	%
1.	Bholath	Nil	Nil	20122	96.40	754	3.60
2.	Kapurthala	Nil	Nil	54638	100.00	Nil	Nil
3.	Phagwara	85	0.40	22435	96.40	736	3.20
4.	Sultanpur Lodhi	Nil	Nil	37034	100.00	Nil	Nil
5.	**Total**	**85**	**0.06**	**134229**	**98.84**	**1490**	**4.1**

Groundwater Resource Estimation Kapurthala

S. No.	Block	Annual Ground Water Availability (Ham)*	Allocation Domestic and Industrial Use (Ham)	Existing Ground water Draft for Irrigation (Ham)	Net Groundwater Availability for Future Irrigation Development (Ham)	Present Stage of Ground water Development (%)	Category
1.	Bhollath	10559	518	18437	-8396	178	Overexploited
2.	Dhilwan	10929	272	20103	-9446	186	-do-
3.	Kapurthala	12565	831	24918	-13184	204	-do-
4.	Phagwara	12521	623	32038	-20140	260	-do-
5.	Sultanpur	15583	337	29533	-14187	190	-do-

Progress Report NHM for the year 2011-12 (Up to March, 2012) District Kapurthala

Component	Unit	Target 2011-12		Balance of Previous Years		Total Target		Opening Balance of Progress		Progress during the month		Total progress		Balance Funds		No. o Beneficiarie
Establishment of New Garden	Hect.	-	27927	-	*42414 #7200	-	77541	2.6	62041	1	15500	3.6	77541	-	-	8
Maintenance of Garden (0-9)	Hect.	-	20687	-	-	-	20687	2	13500	-	-	2	13500	-	7187	1
Spices & Aromatic Plants	Hect.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vermi compost	No. of units	3	90000	-	-	3	90000	-	-	1	30000	1	30000	2	60000	1
Vermi Bed	No. of units	20	100000	-	-	20	100000	-	-	1	5000	1	30000	2	60000	1
Bee Keeping (i) Honey Bee Colony and bee hives	No.	80	120000	-	-	80	120000	-	-	80	120000	80	120000	-	-	5
Loose Flowers	Hect.	1.3	15600	-	-	1.3	15600	-	-	0.8	9600	0.8	9600	0.5	6000	1
Pack House	No.	1	150000	-	-	1	150000	-	-	1	150000	1	150000	-	-	1
Horticulture Seminar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HRD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Exposure Visit	No.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Plastic Tunnel	Hect.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cold Storage Units	No.	2	14600000	-	-	2	14600000	2	14600000	-	-	2	14600000	-	-	2
Horticulture Mechanism	No.	7	368606	-	-	7	368606	3	135556	4	23350	7	368606	-	-	7
Mission Management	-	-	51000	-	-	-	51000	-	44800	-	6200	-	51000	-	-	-
Total			**15547780**		**51694**		**15599474**		**14857977**		**573310**		**15431287**		**168187**	**29**

Note: * During finalization of balance sheet 2010-11 Amount of Rs. 44494/- was found unutilized
Amount of Rs. 7200/- recover from beneficiary against excess payment.

JIT Visit to District- Kapurthala

S.N	Name of the Beneficiary	Address	Crop	Year of Plantation	Area in Hect.	Nos planted	Nos. survived as on date of inspection	% age of survival	Remarks
1.	Hardev Singh S/o Jaginder Singh	Vilalge-Dhelwan Po Dhelwan, Kapurthala	Kinnow (High Density)	2011-12	1.0	275	270	98	• First subsidy amounting Rs. 12000 paid. • Well maintained orchard with inter cropping of gram.
2.	Jasbir Singh S/o Jaginder Singh	-do-	-do-	2011-12	1.00	275	270	98	-do-
3.	Nirmal Singh S/o Swaran Singh	-do-	-do-	2011-12	0.6	110	107	97	• First installment amounting Rs. 4800 paid.
4.	Jarnail Singh S/o Swarna Singh	-do-	-do-	2011-12	0.6	110	107	97	• Plants are growing well but incidence of leaf miner noticed on leaves.
5.	Surinder Singh S/o Shingara Singh	Village Nadala Kapurthala	Vermi compost 30’20’x10’’	2011-12	-	-	-	-	• Rs. 30,000 given as subsidy • The depth of vermin bed was 11-12” which is not standard, advised to raise the height at least 3’
6.	Smt. Harbans Kaur W/o Udham Singh	Village - Bhagatpur, Sit, Shekhupur Kapurthala	Micro irrigation and micro sprinkler (Carrot)	2011-12	1.00 (5x5m sprinkler)	-	-	-	• Subsidy amount Rs. 50092 @ 85% paid to farmer. • Carrot is being irrigated by drip.
7.	Bhajan Singh S/o	Vilalge Kalianwal Sit,	Mini	2011-12	1.07(10x	-	-	-	• Subsidy @ 75%

	Ganga Singh	Teh. Khalu, Kapurthala	sprinkler (Carrot)		10m)				amounting Rs. 66756 / paid to farmer. • Good growth of carrot observed.
8.	MAKHKIJA Cold Storage (Sri Kishan Lal)	Vilalge Bhullarai Block Phagwara, Kapurthala	Cold Storage 4549.20 MT	2011-12	4549.20 MT				• Subsidy amounting Rs. 9600000 has released to beneficiary. • Cold storage is in working condition, some perishable commodities like Tamarind, Sweet orange, turmeric and potato are kept.
9.	Roopsingh S/o Jagat Singh	Kassabad -Kapurthal	Kinnow	2009-10	4.00	720	690	96%	• Subsidy cheque amount Rs. 45000 has been given to farmers. • Incidence of Bacterial canker, leaf miner and fruit drop noticed, advised according for control. • Canopy management needs to be done.
10.	Harsunjit Singh	Thiara-Kapurthala	Kinnow under Drip Line	2006-07	5.00 (3x6M)	-	-	-	• Disease problem notice and advised to control. • Subsidy cheque amounting Rs. 84192 was given to farmer. • Good maintenance.
11.	Kanwardip Singh	Thiara, Kapurthala	Kinnow under drip	2007-08	4.33 (3x4m)	-	-	-	• Disease / pest observed & advised

			line						accordingly to control • Subsidy cheque amounting Rs. 84616 has been given to farmer by SHM. • Good maintenance.

Activity visited by JIT

- Area expansion programme of kinnow
- High Density plantation of kinnow
- Vermi compost
- Drip and sprinkler irrigation in vegetables
- Cold storage (4549.20 MT)

Observation

1. Climatic conditions are suitable for cultivation of kinnow and vegetables in the district.
2. Team noticed that adoption rate and receptivity of local farmers is comparatively fast due to high literacy rate and good exposure.
3. Incidence of bacterial canker, leaf minor and fruit drop in citrus noticed in severe form, advised to use pesticide for control.
4. It is good that kinnow and mango are also taken together in many places.
5. Rejuvenation of old mango and kinnow needs to taken on priority basis.
6. Good visibility of NHM programme is noticed at activity sites.

Photographs

Kinnow Orchard

Litchi in banana

Bacterial Canker disease

Area Expansion Programme

Litchi Intercropped with Peach

Discussion with farmers in Litchi orchard

Photographs

Capsicum cultivation under poly house

Vermi compost unit at Amritshar

Shed net for raizing nursery

Flower cultivation in poly house

Tomato / onion under drip

Tomato and onion under drip

Photographs

Turmeric cultivation

Turmeric cultivation

Area Expansion programme (Peach)

Area Expansion programme of Citrus

Visit to cold Storage

Sweet pea under sprinkler