

**REPORT OF JOINT INSPECTION TEAM IN ITS VISIT TO RAJASTHAN  
DURING 05-09 JANUARY, 2011**



NATIONAL HORTICULTURE MISSION  
MINISTRY OF AGRICULTURE  
DEPARTMENT OF AGRICULTURE & COOPERATION  
KRISHI BHAVAN, NEW DELHI

## TABLE OF CONTENTS

<b>S. No.</b>	<b>Topic</b>	<b>Page No.</b>
<b>Observations of Joint Inspection Team</b>		<b>3</b>
1	Introduction	4
2	Horticulture in the State	7
3	NHM Intervention in the State	7-13
4	Field Visits	13
(i)	Visit to Jaipur District	13-19
(ii)	Visit to Sikar District	19
(iii)	Visit to Jhunjhunu District	20
(iv)	Visit to Precision Farming Development Centre (PFDC), Bikaner	20-23
(v)	Visit to Sriganganagar District	23-33
8	Highlights of Meeting with Mission Director, SHM, Rajasthan	34

## **Observations of Joint Inspection Team**

- State Horticulture Mission may furnish the list of nurseries established under NHM for accreditation by NHB so that quality planting material could be available to the farmers.
- Farmers may be motivated for protected cultivation.
- The activity under organic certification to be accelerated.
- Emphasis has to be given on the development of infrastructure of post harvest management and markets.
- Boards with NHM logo need to be displayed on the sites of the beneficiary.
- Sufficient staff needs to be outsourced at block level for effective implementation of NHM programme in the State. The field consultants are required to be appointed exclusively for work relating to implementation of NHM programme. Field Consultants so appointed are paid honorarium of Rs. 6000/- only which is a meager amount keeping in view the volume of the work. They leave the job when they get the better opportunity which hampers the field work relating to the Scheme.
- The farmers are adopting intercropping practices in fruits orchards and promoting vegetable cultivation as intercrop which is appreciable.
- The team constituted by the Horticulture Department should visit the orchards periodically and suggest preventive/protection measures so that the confidence level of farmers could be raised.
- The farmers are adopting part circle, mini sprinkler to promote the concept of high water productivity.
- Many farmers are adopting raised bed cultivation with use of plastic mulch, low tunnels without adequate know how, therefore proper attention has to be paid.
- More crops are to be identified other than capsicum, tomato, cucumber and flowers which can give better price in off season.
- There is a potential to establish more Aonla processing units.
- Farmers need training in organic farming practices and awareness about plant protects measures. Imparting training for pest management to the farmers is necessary.
- Farmers are taking care of canopy management in citrus orchards.
- Farmers may be advised to provide properly designed anti chamber at the entry of poly house/shade net house. Pest and disease problems in capsicum cultivated under poly house were noticed.
- Silt trap chamber have not been designed / constructed properly these should be equipped with water storage structure.

## **Report of the Joint Inspection Team under Leadership of Shri Om Prakash, Additional Commissioner, NHM, on its visit to Rajasthan during 5-9 January, 2011 to review the progress under the National Horticulture Mission**

The Joint Inspection Team (JIT) comprising Shri Om Prakash, Additional Commissioner, National Horticulture Mission and Shri P.S. Kohli, Resource Person, National Horticulture Mission visited Rajasthan during 5-9 January, 2011 to review the progress under National Horticulture Mission programme in the State. Dr. L.K. Dashora, Prof. & Dean, College of Horticulture and Forestry, Jhalawar and Er. J.K. Gaur, Principle Investigator, PFDC, S.K. Rajasthan Agriculture University, Bikaner joined the Team. Director, Directorate of Arecanut & Spices Development, Calicut could not join the Team. Shri Rajendra Singh Khichar, Agriculture Research Officer coordinated the visit of the Team in Jaipur District. Shri Yashpal Mahavat, Additional Director, Horticulture accompanied the Team to Siker, Jhunjhunu, Bikaner and Shri Ganga Nagar Districts. A wrap up meeting held with Shri Jagroop Singh Yadav, Mission Director, Government of Rajasthan on 8<sup>th</sup> January, 2011.

### **Introduction**

The state has 33 districts classified under 10 agro climatic zones. Out of these 33 districts, the programmes of National Horticulture Mission are being implemented in 24 districts of the State. The state has 249 panchayat samities and 41353 villages.

Rajasthan has varying topographic features though a major part of the state is dominated by parched and dry region. The extensive topography includes rocky terrain, rolling sand dunes, wetlands, barren tracts or land filled with thorny scrubs, river-drained plains, plateaus, ravines and wooded regions. Five distinct specifications of soils viz., Aridosols, alfisols, entisols, inceptisols and vertisols are found in the state.

### **The salient features of Agriculture in Rajasthan:**

- Agriculture in Rajasthan is primarily rain fed
- Arid and semi-arid areas cover two-third area of the State
- The period of monsoon is short, with late onset and early withdrawal coupled with long drought spell
- 90% of the rainfall is received during monsoon season.
- The rainfall is highly inadequate (average annual rainfall is 575 mm) and variable both in time (3 out of 5 years are drought year) and quantum (15 cm is to 90 cm)
- 65% of cultivation is under kharif season and is mostly depend on rainfall which is sporadic and uncertain
- Due to scarcity of rainfall in arid areas, there is limited availability of ground water
- Only 30% of average gross cropped area of 200 lac ha receives irrigation and two third of gross cropped area is mainly rain fed.
- 65% of irrigation is under wells and tube wells. The ground water is rapidly going down
- Soils are sandy having low water holding capacity, high infiltration rate and shallow in depth in some areas

Rajasthan with its huge geographical area and diverse Agro-climatic conditions favors growing of large number of Horticultural crops like fruits vegetable, spices, flowers and medicinal & aromatic plants. The State is one of the biggest producer of Coriander, Cumin, Fenugreek, Isabagol and Mehnadi in the country, offers excellent

opportunities in horticulture. The state also produces variety of other Horticultural crops like Oranges, Kinnow, Lime, Aonla, Chillies, Garlic, Ajowain, Suwa, Onion,

Tomato, Pea, Cucurbitaceous vegetable and Medicinal & Aromatic Crops like Sonamukhi, Ashwangdha etc. providing surplus produce for processing and export.

The climatic conditions of Rajasthan allow growing various types of horticulture crops specially the seed spices. Rajasthan is having prominent position in production of seed spices in the country. Besides some other crops also have prime positions at production in the country. The contribution of state horticulture crops in the national production is as under:

- 66.51% of Country's Coriander
- 33% of Country's Cumin
- 82% of its Fenugreek
- 14% of its Garlic
- 6% of its Fennel
- Almost all its Psyllium Husk (Isabgol)
- Almost all its Myrtle (Henna)
- Almost all its Ajwain
- 7% of its Mandarin
- Producing export quality Kinnow
- Becoming one of the largest producer of Aonla

Rajasthan offers excellent horticulture development potential inspite of several biophysical as well as development constraints. The endeavors over the past decade made for planned and systematic development of horticultural in the state have now been visualizing in the crops. This is a beginning and the huge untapped potentials are yet to be utilized for the betterment of state.

The varied agro climatic conditions of the State favor growing of a large number of crops. This diversity in climatic conditions creates scope to develop following belts of horticultural crops in the State:

- Mandarin-Warm humid areas of Jhalawar
- Kinnow-Dry and cool climate of Ganganagar
- Pomegranate-arid irrigated parts of State
- Ber-Western parts of the State
- Aonla-Central semi arid parts
- Papaya-Central parts of the state
- Mango-Southern humid parts
- Low volume high value spice cumin-Barmer, Jalore, Pali, Jodhpur, Nagaur,
- Coriander-Kota, Baran, Jhalawar, Bundi, Chittorgarh
- Fennel-Sirohi, Tonk
- Garlic-Jodhpur, Chittorgarh, Baran, Jhalawar, Kota
- Isabgol-Barmer, Jalore
- Mehendi-Pali

Various developmental activities undertaken in the state during past 4-5 years have contributed a lot in overall development of horticulture sector in the State and huge existing potential has now been started converting into production.

The crop group wise and year wise area and production of different horticultural crops in the State from 2004-05 to 2008-09 are as under:

**Crop group wise and year wise area and production of different horticultural crops**

(Area in lakh ha & Prod. lakh MT)

Crop group	2004-05		2005-06		2006-07		2007-08		2008-09	
	Area	Prod.	Area	Prod.	Area	Prod.	Area	Prod.	Area	Prod.
Fruits	0.238	2.56	0.254	4.18	0.276	4.02	0.289	5.62	0.306	5.95
Veg.	1.23	6.23	1.23	7.41	1.24	7.88	1.43	8.53	1.25	7.37
Spices	4.16	4.24	3.46	3.02	3.80	3.56	5.67	5.29	5.37	5.36
Flower	0.033	0.03	0.03	0.023	0.03	0.027	0.033	0.046	0.033	0.048
M & A Plants	1.49	0.79	1.51	0.70	2.16	2.16	1.98	0.94	2.26	1.06
Total	7.151	13.85	6.484	15.35	7.506	17.64	9.41	20.43	9.23	19.788

Important horticulture crops in the State are Mandarin, Kinnow, Aonla, Ber, Pomegranate, Bael, Mango, Guava, Papaya, Lime/citrus, S. Orange, Coriander, Cumin, Methi, Fennel, Fennel, Garlic, Desi Rose and Loose flowers.

Rajasthan has made its recognition in production of good quality Kinnow, Mandarin and Aonla. Export-quality Kinnow produced in the dry and cool climate of Ganganagar and Hanumangarh is fast becoming favorites of the consumers. Mandarin produced in Rajasthan competes with the best in the market and is suitable for preparation of squash, concentrate and marmalade. Guava, pomegranate, bael, ber and lehsun are the other fruits which have very good potential for cultivation in the harsh climate of the State.

The State is a significant producer of a variety of vegetables throughout the year and has sizable production of onion, tomato, pea, potato and cucurbit vegetables like watermelon, muskmelon, karela and tindia.

High value and export purpose vegetables like capsicum, tomato, okra, cucumber etc are also being grown successfully under green house and shade net house with high-tech cultivation practices.

The share of the State in seed spices is quite significant, with coverage of more than 50% of area and production of the country, in terms of national production, the Spices State of India contributes 66% of coriander, 33% of cumin, 82% of fenugreek and 6% of Fennel. Besides this, the State has sizable production of garlic chilly, fennel, ajwain and suwa.

Among the medicinal & aromatic plants grown in Rajasthan, Isabgol, Sonamukhi, Ashwagandha & Mehndi are important crops. The climatic condition of state is favouring the natural growth of Sonamukhi and Ashwagandha. Salient features of the medicinal & aromatic plants produced in Rajasthan are as under:

- National pride being a largest producer of Isabgol and Henna.
- Superior quality of Sonamukhi and Ashwagandha.
- High genocides content in Sonamukhi produced in State.

Processable flower production of rose from Pushar in Ajmer and Haldi Ghati in Chittorgarh throws open tremendous scope for making rose scent, rose water, gulkund and dry petals for export.

Besides, some other valuable flowers like gerbera and Dutch Roses also growing successfully under green house conditions.

### **Horticulture in the State**

Rajasthan produces about 1.80 m. MT of horticultural produce from an area of 0.95 m. ha. and accounts for about 1% of total horticulture production of the country. The major of horticulture produce comes from vegetable (40.82%), Spices (28.28%) and fruits (26.85%) and spices.

#### **Onion**

- State produces about 0.37 m. MT of onion from an area of 0.04 m. ha. with productivity of 9.0 t/ha. and forms 50.10% of total horticultural produce of the State and 2.7 % of total onion production in the country.
- Onion producing belts in the State are Alwar, Ajmer, Sikar and Jaipur.

#### **Spices**

- Rajasthan is the second largest producer of spices in the country and accounts for 11.38% of total production of major spices.
- State produces about 0.47 m. MT of spices from an area of 0.57 m. ha. with productivity of 0.88 t/ha.

#### **Citrus**

- Rajasthan is the eighth largest producer of citrus in the country and forms 3.6% of total production of citrus in the country.
- The State produces 0.31m. MT of citrus from an area of 0.02 m. ha. with productivity of 18.1 t/ha.
- The major citrus producing belts in the State are Bharatpur, Dholpur and Sawai Madhopur.
- The State produces 10% of orange of total production respectively of the country. Major Orange producing belts in the state are Jhalawad and Kota.

(Source: - Indian Horticulture Database 2009, National Horticulture Board)

### **NHM interventions in Rajasthan**

The National Horticulture Mission (NHM) is being implemented from 2005-06 for holistic development of horticulture sector, duly ensuring horizontal and vertical linkages, with the active participation of all the stakeholders. The thrust of the Mission is on area based regionally differentiated cluster approach for development of horticultural crops, having comparative advantage.

The programme in the State of Rajasthan is being implemented by the Rajasthan Horticulture Development Society through District Mission Committees involving farmers, Societies, NGOs, Grower Associations, SHGs, State institutions etc. The programme is being implemented in 24 districts with cluster approach. The district covered under the program includes Alwar, Ajmer, Barmer, Baran, Chittor, Jaipur,

Jhalawar, Jalore, Jodhpur, Kota, Nagaur, Pali, Sri Ganganagar, Sawai Madhopur, Karauli, Banswara , Tonk, Bhilwara , Jhunjhunu , Udaipur ,Dungar Pur, Bundi,Jaisalmer and Sirohi.

The focus crops identified under the programme include Aonla, Mandarin, Kinnow, Ber, Lemon, Guava, Bael, Pomegranate, Papaya, Spices, Flowers, Medicinal & Aromatic plants.

Major activities being undertaken in the project 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, pollination support through bee-keeping, development of post harvest management & marketing infrastructures and human resource development.

### Physical Progress

Under the Mission, during 2005-06 to 2010-11, an additional area of 93176 ha of identified horticulture crops are covered besides establishment of 127 nurseries for production of quality planting materials, 2394 ha. covered under rejuvenation of old and senile orchards, adoption of organic farming in an area of 4227 ha for promotion of organic cultivation of horticultural crops, establishment of 2041 numbers of vermi-compost units, adoption of IPM practices in an area of 43671 ha., creation of 37 IPM/INM infrastructure facilities such as disease forecasting units and plant health clinics, creation of 1462 community water structures and distribution of 300737 colonies with hives. Under the component of Post Harvest Management, 60 units (10 pack houses, 3 ripening chambers, 30 low cost onion storage structures, 11 cold storages, 1 C.A. Storage and 4 mobile processing unit) have been established apart from establishment of 4 rural markets and 13 functional infrastructures for collection, grading etc. 26481 farmers have been given training under various horticultural activities.

### Financial Progress

During 2005-06 to 2010-11, an amount of Rs. 223.68 crore was released to the State. The State has reported an expenditure of Rs. 223.86 crore.

### Year-wise details of Outlay, Funds Released and Expenditure under NHM in Rajasthan

(Rs. In lakh)				
Year	Outlay	Releases	Expenditure	Unspent Balance
<b>2005-06</b>	4102.00	2259.57	1421.31	838.26
<b>2006-07</b>	7626.67	3837.93	3306.96	1369.23
<b>2007-08</b>	7575.49	5673.19	4602.29	2440.13
<b>2008-09</b>	12435.63	4097.71	4726.00	1811.84
<b>2009-10</b>	5978.80	2500.00	3466.19	845.65
<b>2010-11</b>	5950.00	4000.00	4863.19	-17.54

Component wise details of physical and financial progress under National Horticulture Mission (NHM) from 2005-06 to 2010-11 is given in the following table.



**Component wise details of Progress under NHM in Rajasthan**

Sl. No.	Component	Phy (Ha/No.)	Fin (Rs. in lakh)	Percentage Expenditure to Total Expenditure
1	Nursery	127	740.99	3.00
2	Area Coverage	93175	6437.01	26.05
3	Rejuvenation	2393.7	292.27	1.18
4	Development of Water Resources	1462	10667.33	43.17
5	Protected Cultivations	51.78	837.93	3.39
6	Organic Farming	6250	191.55	0.78
7	Vermi Compost Units	2041	484.5	1.96
8	Integrated Pest Management (IPM)	43671	279.64	1.13
9	IPM Infrastructure	37	449.76	1.82
8	HRD	28645	907.95	3.67
9	Post Harvest Management	60	596.61	2.41
10	Rural Markets/Infrastructure	18	59.97	0.24
11	Mission Management/Other Innovative		2766.9	11.20
	<b>Total Expenditure</b>		<b>24712.41</b>	

**Crop wise additional area covered under National Horticulture Mission**

As a result of implementation of area expansion programme of National Horticulture Mission on different crop group like fruits, spices, flowers and medicinal crops, a total of 83043 ha. area have been brought under various crops. The year wise and crops wise additional area brought under horticulture crops are as under:

**Crop wise Additional Area covered**

(In ha.)

S. No.	Physical Achievements						
	Crop	2005-06	2006-07	2007-08	2008-09	2009-10	Total
A.	Fruits						
1.	Aonla	3348	2809	1223	682	240	8302
2.	Ber	274	545	730	899	857	3305

3.	Kinnow	625	452	605	677	1833	4192
4.	Orange	441	39	889	1908	5423	8700
5.	Guava	0	22	796	1214	1368	3400
6.	Lime	0	0	347	841	982	2170
7.	Pomegranate	0	0	214	315	664	1193
8.	Bael	0	0	100	283	237	620
9.	Mango	0		187	421	700	1308
10.	Papaya	0	0	5	23	116	144
11.	S. Oranges	0	0		0	88	88
12.	Others	0	104	167	37	34	342
	Total	4688	3971	5263	7300	12542	33764
B.	Spices						
1	Coriander	2698	3815	3187	1404	1200	12304
2	Cumin	2232	3607	3800	5271	1799	16709
3	Fenugreek	1902	1331	3205	1762	500	8700
4	Fennel		0		635	160	795
5	Chilli		170	500	1525	222	2417
6	Ginger			709	50	50	809
7	Turmeric			0	40	0	40
8	Garlic			0	80	0	80
	Total	6832	8923	11401	10767	3931	41854
C.	Flowers	937	1000	776	910	165.93	3789
D.	Medicinal	52	2	2632	950	0	3636
E.	Total	12509	13896	20072	19927	16639	83043

### Source of planting material

For area expansion of fruit plants, quality planting material is of vital importance. These planting materials are being arranged through the various public sector nurseries maintained under the society "Rajasthan Horticulture and Nursery Society" and of State Agriculture Universities. The gap between demand and supply are being managed through the private registered nurseries situated in the State and out side the State. The source of various planting material are as under:

S. No.	Crop	Additional area brought (Ha.)	Varieties	Source of planting material
1.	Aonla	8302	NA-7, Chaikaiya, Krishna, Kanchan	RAJHANS Nurseries (Govt.)
2.	Ber	3305	Umran, Gola, Seb	
3.	Kinnow	4192	Kinnow	RAJHANS Nurseries (Govt.) and private nursery of the State.
4.	Orange	8700	Nagpuri	Private registered nurseries of Maharashtra.
5.	Guava	3400	L-49, Allahabad Safeda	Govt. and private nurseries of UP.
6.	Lime	2170	Kagzi	Govt. nurseries of State.
7.	Pomegranate	1193	Mridula, Sinduri	Private nurseries of Maharastry and Govt.

				Nurseries of the State.
8.	Bael	620	NB-5, 10	Private nurseries of UP.
9.	Mango	1308	Langra, Dashehri, Sinduri	Govt. Nursery and private nurseries of UP and Gujarat.
10.	Papaya	144	Red lady	Private nurseries of State and Govt. Nurseries.
11.	S. Oranges	88	Mosambi	Private nurseries of State.

The nurseries entrepreneurs and farmers have also been assisted to develop the model and small nursery for production of quality planting material of fruit plants. The following are the inclusion from 2005-10.

S. No.	Component	Capacity	Total established
1.	<b>Nurseries</b>		
i	Model nurseries in public sector	2 lakh seeding each	31
ii	Small nurseries in public sector	50000 seeding each	20
iii	Model nurseries in private sector	1.50 lakh seeding each	17
iv	Small nurseries in private sector	50000 seeding each	53

#### **Development of Post Harvest Management and Market Infrastructure in the State from 2005 to 2009-10:**

Keeping in view the perishability of horticulture produce and losses after harvesting of the crops, the SHM has given emphasis on creation of PHM infrastructure. Several measures have been adopted to promote PHM activities. However, the production of horticulture produces is not so significant in the State and most of the crop, glut occurs in the market and farmers are not getting the remunerative prices, therefore the PHM infrastructure is required to establish in the State. The State Government has also announced the huge subsidy @ 50% of the cost of processing units upto Rs. 1.00 crore. The PHM and Market Infrastructure created in the state under NHM is as under:

S. No.	Facility / Unit	Capacity	Numbers
1	Cold Storages	45000	11
2	Mobile/ primary processing units		3
3	CA storage	3500	1
4	Rural Markets	At four locations	4
5	Functional infrastructures for collection and grading.	At fifteen locations for particular crops.	15

Component wise beneficiaries covered under implementation of National Horticulture Mission programme in the State during 2009-10 are as under:

Component	G.TOTAL						Total
	Male			Women			
	General	SC	ST	General	SC	ST	
<b>Planting Material</b>							
a) Public Sector Modal nursery (4 ha.)	2	0	0	0	0	0	2
Small Nursery (1 ha.)	1	0	0	0	0	0	1
b) Private Sector Modal nursery (4 ha.)	1	0	0	1	0	0	2
Small Nursery (1 ha.)	2	1	0	0	0	1	4
<b>2. Establishment of new gardens</b>	0	0	0	0	0	0	0
i. New Plantation	7602	701	2693	832	116	288	12232
ii. 1 <sup>st</sup> Year Maintenance	1458	127	573	310	38	48	2554
iii. 2 <sup>nd</sup> Year Maintenance	744	78	177	293	38	60	1390
(c) Loose Flower	225	27	54	35	14	9	364
Spices	2584	481	380	487	97	53	4082
Aromatic Plants	0	0	0	0	0	0	0
<b>Rejuvenation/replacement of senile plantations</b>	196	8	34	17	0	2	257
<b>Creation of water resources sources</b>	272	14	14	32	1	3	336
Green House	63	3	1	21	1	2	91
Mulching	0	0	0	0	0	0	0
Shade Net	3	1	0	2	0	1	7
Plastic Tunnel	0	0	0	0	0	0	0
<b>Promotion of IPM</b>	3430	248	361	271	15	8	4333
Sanitary and Phytosanitary (Public Sector)	0	0	0	0	0	0	0
Disease fore casting units	0	0	0	0	0	0	0
Leaf /Tissue Analysis Lab	0	0	0	0	0	0	0
Plant health clinics Private Sector	1	0	0	0	0	0	1
Organic Farming	0	0	0	0	0	0	0
Adoption of organic farming	433	37	50	22	1	1	544
Vermin compost units	156	8	19	21	2	1	207
Certification	0	0	0	0	0	0	0

<b>Human Resource Development</b>	0	0	0	0	0	0	0
Training of Farmers	0	0	0	0	0	0	0
(a) Within State	2177	436	302	169	40	9	3133
(b) Outside State	893	169	254	0	0	0	1316
Distribution of colonies with hives	191	25	28	16	1	2	263
11. Technology dissemination	0	0	0	0	0	0	0
<b>B. POST HARVEST MANAGEMENT</b>	0	0	0	0	0	0	0
1. Pack houses	0	0	0	0	0	0	0
2. Cold storage units	4	0	0	1	0	0	5
3. C.A. Storage	1	0	0	0	0	0	1
4. Mobile Processing Unit	1	0	0	1	0	0	2
Distribution of drying Spices sheets	0	0	0	0	0	0	0
<b>Total</b>	<b>20440</b>	<b>2364</b>	<b>4940</b>	<b>2531</b>	<b>364</b>	<b>488</b>	<b>31127</b>

### Field Visits

Joint Inspection Team visited the sites of beneficiaries under National Horticulture Mission programme in the districts of Jaipur, Sikar, Jhunjhunu, Bikaner, Sriganganagar and Hanumangarh districts. It is mentioned that the districts of Sikar, Bikaner and Hanumangarh are non-NHM districts wherein the programmes in Micro Irrigation were covered.

### Visit to Jaipur District

There are 13 tehsils and 13 Sub-divisions are named as Jaipur, Amber, Bassi, Chaksu, Chomu, Mojmabad, Jamwa Ramgarh, Phagi, Phulera, Kotputli, Sanganer, Shahpura, Virainagar.

Panchayat Samitis are Amber, Bassi, Chaksu, Govindgarh, Dudu, Jamwa Ramgarh, Phagi, Sambhar, Jhotwara, Kotputli, Shahpura, Sanganer, Viratnagar.

### Status of Horticulture Crops in Jaipur

The area and production of horticultural crops in Jaipur district are as under:

#### The Area and Production of Horticultural Crops

S.No.	Crop group	Area in ha.	Prod. In MT
1	Fruits	907	9928
2	Vegetables	27832	69171
3	Spices	5354	6735
4	Flowers	898	925
5	Medicinal	67	36
<b>Total</b>		<b>35058</b>	<b>86795</b>

### Major Horticulture Crops of the district:

1	Fruit	Mango, Aonla, Lime, Ber, Pomegranate, Papaya, Guava
2	Vegetables	Tomato, Cauliflower, Onion, Cabbage, Cucurbits, Brinjal, Chilli, Pea, Okra, Carrot, Spinach
6	Spices	Chilli, Fenugreek, Cumin
4	Flowers	Rose, Merigold
5	Medicinal	Aloe vera, Safed Musli, Aswagandha

### NHM Intervention

### Physical and financial progress of National Horticulture Mission during 2010-11

Progress of NHM during 2010-11					
Component	Unit	Jaipur			
		Physical		Financial	
		Tar	Achi	Tar	Achi
<b>1. Production of planting material</b>					
<b>i) Model / Large nursery (2 to 4 ha)</b>					
Private Sector	No.	1		12.50	
<b>ii. Small Nursery (1 ha.)</b>					
(b) Private Sector	No.	1		3.13	
<b>2. Establishment of new gardens (Area expansion)</b>					
<b>I. Fruits (High density)</b>					
(ii) Fruit Crops other than cost intensive crops	Ha.	50	47.54	4.80	11.210
Maintenance for orchards established during previous Years.					
(i) First Year Maintenance		63	49.3	2.84	3.79
(ii) Second Year Maintenance		169.23	97	11.41	6.61
<b>II. MUSHROOMS (Private Sector):</b>					
(i) Integrated mushroom unit for spawn, compost production and training	Nos.	1		25.00	
(ii) Spawn making unit	Nos.	1		7.50	
(iii) Compost making unit	Nos.	1		10.00	
<b>Total (II)</b>		3	0	42.50	0.00
<b>III. Flowers</b>					
Loose Flowers i. SF / MF	Ha.	50	22	6.00	2.550
Loose Flowers ii. Other Farmers	Ha.	10		0.79	
<b>Total (III)</b>		60.00	22.00	6.79	2.55
<b>IV. Spices</b>					
		100	100	5.50	2.87
<b>3. Creation of water resources</b>					
(a) Community tanks	Nos.	70	70	262.50	262.50
(b) Water harvesting system for individuals	Nos.	15	10	9.00	6.00
<b>4. Protected cultivation</b>					
<b>i. Green House Structure</b>					

<b>(i). Tubular Structure</b>	Sqm	10000	25000	46.75	106.900
<b>ii. Anti Bird / Anti Hail Nets.</b>	Sqm	20000		2.00	
<b>iii. Cost Planting materail of high value vegetables.</b>	Sqm	4000		2.10	
<b>iv. Cost Planting materail of flowers fo poly house.</b>	Sqm	4000		10.00	
v. Low tunnel	Sqm		46000		5.060
<b>5. Promotion of INM/IPM</b>					
<b>(i) Promotion of IPM/INM</b>	Ha.	250	250	2.50	2.310
<b>6. Organic Farming</b>					
<b>Certification (old)/ Jevik Kheti / Organic Farmers {Expenditure against previous years phase-wise payments.}</b>	Ha.				9.500
<b>(i) Vermi compost units</b>	Nos.				
<b>(a) Permanent</b>		10	10	3.00	3.000
<b>(ii) HDPE</b>	Nos.				
<b>7. Horticulture Mechanization</b>		15	15	0.75	0.710
(a) Power operated machines / tools including Power saw and Plant Protection equipments etc.	Nos.	<b>10</b>	<b>4</b>	<b>1.75</b>	<b>0.70</b>
(b) Power Machines (Upto 20 BHP) with rotavator / equipment	Nos.	<b>2</b>		<b>1.20</b>	
© Power Machines (20 BHP and above) with rotavator / equipment.	Nos.	<b>5</b>	<b>7</b>	<b>7.50</b>	<b>10.50</b>
<b>8. Human Resources Development (RD)</b>					
<b>(a) Training of Farmers</b>					
(i) Within the District.	Nos.	50	50	0.20	0.150
(ii) Within the State	Nos.	50	50	0.75	0.610
<b>(b) Exposure visit of farmers.</b>					
(i) Within the State	Nos.	50	50	0.45	0.450
(ii) Outside the State	Nos.	50	50	1.50	1.170
© Training / Study tour of technical staff / field functionaries officials/Officers					
(i) Within the State	Nos.	10	7	0.02	
<b>C. INTEGRATED POST HARVEST MANAGEMENT</b>					
1. Pack house / on farm collection & storage unit	Nos.	10		15.00	
2. Pre-cooling unit.	Nos.	3		18.00	
3. Cold storage units (Construction / expansion / Modernizaton)	Nos.	1		120.00	
4. Primary / Mobile / Minimal Processing Unit	Nos.	1		9.60	
8. Low cost onion storage structure (25MT)	Nos.	10	24	5.00	12.000
<b>F. MISSION MANAGEMENT</b>					
<b>I. State Level</b>					
i. State & Districts Mission Offices				32.46	14.01

ii. State Level Seminar		1		3.00	
<b>Grand Total</b>				684.69	482.63

In Jaipur district, JIT covered the programmes like High Density Plantation, Protected Cultivation, Micro Irrigation programmes, Floriculture etc. on 5<sup>th</sup> & 6<sup>th</sup> January, 2011. The details are as under:- ..

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	Observations
1	Shri Balu Ram and Ratan lal Meena	Vill. Ratan pura	Mini Sprinklers-Peas	2009-10	1 ha				Subsidy of Rs 58300 paid by cheques, Suppler is Jan Irrigation, status of crop is good.
2	Shri Balu Ram and Ratan lal Meena	Vill. Ratan pura	Drip-Tomoto and Chili	2009-10	1.59 ha				Subsidy of Rs. 1,53,255 paid by cheques. Suppler is Jan Irrigation, status of crop is good.
3	Shri Balu Ram and Ratan lal Meena	Vill. Ratan pura	High density plantation-Guava	2010-11	2 ha				Procured plants of lalit variety from Rajasthan Horticulture and Nurseries Society. Inputs and pesticides were provided subsidy of Rs. 1.60 lakh was given, leaf margin disease due to cold conditions.
4	Shri Ram Kumar Meena	Vill. Ratan pura	High density plantation-Guava	2010-11	3 ha				Subsidy of Rs. 13440 disbursed , leaf margin disease due to cold conditions.
5	Shri Ram	Vill.	Mini	2009-	1 ha				Subsidy of Rs.



	<b>Kumar Meena</b>	<b>Ratan pura</b>	<b>Sprinklers- Peas</b>	<b>10</b>					<b>7800 paid by cheques. Suppler is Jan Irrigation, status of crop is good.</b>
<b>6</b>	<b>Shri Samodhara Singh</b>	<b>Vill. Pilia</b>	<b>Green House, Drip, Cucumber and Chili</b>	<b>2009-10,</b>	<b>1000 sq meter</b>				<b>Subsidy of Rs. 4.62 lakh paid by cheque. Suppler is Neelsan Hi-tech Agro Industries</b>
<b>7</b>	<b>Shri Samodhara Singh</b>	<b>Vill. Pilia</b>	<b>Drip-Tomato and Chili</b>	<b>2008-09</b>	<b>5 ha</b>				<b>Subsidy of Rs. 4.90 lakh paid by cheque. Suppler is Neta Farm Irrigation.</b>
<b>8</b>	<b>Shri Kishan Meena</b>	<b>Vill. Khazoria Tiwaryan</b>	<b>Drip-Tomato and Chili</b>	<b>2010-11</b>	<b>1 ha</b>				<b>Subsidy of Rs. 1,12,136 paid by cheques. Suppler is Jan Irrigation, status of crop is good.</b>
<b>9</b>	<b>Shri Bhuri Lal Meena</b>	<b>Vill. Khazoria Tiwaryan</b>	<b>Low Tunnel-Chili</b>	<b>2010-11</b>	<b>15000 Sq. Meter</b>				<b>Subsidy yet to be paid, well maintained.</b>
<b>10</b>	<b>Shri Sanjeev Saini</b>	<b>Vill. Kuker Khera</b>	<b>Normal Green House, Drip</b>	<b>2009-10</b>		<b>Flowers-Duch Roses</b>	<b>8000 Plants</b>		<b>Roses procured from Bangaloru under RKVY, Subsidy of Rs. 4.87 lakh disbursed, Third cutting of Roses, Local Marketing and earned Rs. 50, 000 in the last 3 months. No anty chamber, no insect proof net, Spider mite and white fly Sheets for thrips recommended</b>
<b>11</b>	<b>Shri Ajeet Singh</b>	<b>Vill Daulat pura</b>	<b>Green House, Drip</b>	<b>2009-10</b>	<b>1000 Sq. Meter</b>	<b>Flowers-Gerbera</b>	<b>6000</b>		<b>NT Chamber missing, Gap filling on 400 flowers per</b>

						6500 Plant s			week selling at the rate of Rs. 2 per flowers. Borer caterpillar disease
--	--	--	--	--	--	--------------------	--	--	--

### Center of Excellence, Jaipur

JIT visited Center of Excellence at Government farm, Bassi Jaipur. Under National Horticulture Mission programme, 3 poly houses and 4 shade nets have been established. The Centre is famous for cut flowers demonstrations like Gerbera, Dutch Roses and Gladiolus. The Center was established in 2009-10 and 7000 sq. meter of area has been covered with the cost of Rs. 70 lakhs which has been disbursed as subsidy. The Centre is equipped with drip system. In poly houses and shade nets, apart from flowers capsicum, cucumber and tomato were also taken up. The problems like mite, caterpillar, borer were observed.

The plantation is strawberry has also been taken up in 1 ha with 21500 plants under Rashtriya Krishi Vikas Yojna programme on experimental basis. The plants were procured from TERRI, Delhi and were in fruiting stage.

### General Observations

1. Farmers are adopting intercropping practices in fruit orchards & promoting vegetable cultivation as intercrop that is appreciable.
2. The adoption of part circle mini sprinklers is need of the day to avoid losses of water on roads & paths. Farmers of Jaipur district are adopting part circle mini sprinklers that are good practice to promote the concept of high water productivity.
3. Almost all farmers are adopting raised bed cultivation in the district that is appreciable.
4. Use of plastic mulch in vegetables is being promoted in the district. A clear cut effect of mulching was observed in the fields.
5. Low tunnels concept has also been promoted in the district. Training may be provided to promote this technology for large scale adoption.
6. Cultivation under shade net house is gaining ground in the district. However it is recommended to identify more crops other than capsicum, tomato cucumber and flowers which can give better price in off season.
7. Disease and pest problems are common in capsicum. It is recommended to aware the farmers by way of training & providing package of practice regarding preventive measures. PI, PFDC pointed out that there must be provision of honorarium to the scientists of entomology and pathology in PFDC trainings so that experienced resource persons can be invited.
8. In poly houses the use of white shade net house should be replaced by 20 mesh UV stabilized insect proof net to prevent the infestation of vector (insect).

9. Properly designed anti chamber should be provided at the entry of poly house/ shade net house.
10. The state government is providing subsidy for drip irrigation in five hectare area where as the limit of subsidy for poly tunnel is 1000 sqm. Some of the farmers requested to increase the limit which seems to be genuine looking to there efforts.
11. Proper attention should be given on height of raised beds it should 30 to 45 cm.

### **Visit to Sikar District**

On way to Sriganganagar district JIT visited Sikar district on 6<sup>th</sup> January, 2011 which is non - NHM district and covered organic amla extraction unit.

The amla extraction unit was located in Sargod village of district and was owned by for partners viz Shri Puran Mal, Vinod Kumar Abhishek and Mrs. Nirmala Devi. The unit was established in 2008-09 and an area of 20 ha with 8500 plants. The unit has been covered from drip under MIS programme. The processing unit has been established under State plan with Rs. 5 lakh as subsidy. The beneficiaries informed that the amla juice and candy are marketed in Jaipur and Delhi and income of Rs. 17 to 20 lakh is generated per annum.

The beneficiary informed that there is an acute shortage of labour and being the products organic, they are not getting a price accordingly. It was observed that the amla fruit was frostriden and the unit was poorly maintained. The unhygienic conditions were prevailing in unit. A separate chamber for final product was recommended and intercropping suggested.

JIT also visited a site of Mrs Leela Nehra having pomegranate plantation in 3.82 ha. A drip under Micro Irrigation Scheme was provided in 2009-10. 1500 plants of pomegranate of Sinduri was procured from Malegaon, Maharashtra under RKVY and has less mortality. The site required weeding and pruning. Dithane M45 was recommended as rote routs were seen.

### **General Observations**

1. The activities under MIS have been carried out in right way. Use of sprinklers is very common and drip irrigation is also popular among the farmers.
2. There is no marketing problem with regards to aonla processed products. There is potential to establish more processing units in the district.
3. Intercropping in fruit orchards is being adopted.
4. Farmers are well aware about operation and maintenance of drip irrigation system.
5. More emphasis should be given on cleanliness and maintaining hygienic conditions in processing units. The products should be kept at least on raised platform.
6. The team engaged in area extension programme should visit the orchards periodically and suggest preventive/protection measures so that confidence level of farmers can be increased

## **Visit to Jhunjhunu District**

On a short visit to Jhunjhunu district on 6<sup>th</sup> January, 2011, a small nursery and area expansion programmes were covered.

JIT visited Morarka Organic foods Private Limited, Jhunjhunu, an Organic Certification Agency operating ROCA, Jaipur. This agency is running organic farming training centre for beneficiaries in the district and take organic farming under NHM in farmer's field since 2009-10. It has been reported that 833 farmers have been benefited so far. The Rabi and Kharif crops are covered under Organic Farming including cereals, pulses, beans, spices, condiments, dehydrated powders, oil etc.

A visit was paid to small nursery in private sector in Navalgarh, owned by Shri Kirpal Singh which was established in 2008-09 under NHM. Subsidy of Rs. 1.5 lakh was disbursed. The nursery has the plants like Belpatra, pomegranate, Ber, Kazgi lime, Jamun, Sapota, Guava etc. The nursery has produced 80,000 plants and out of which 35,000 has been sold out. Nursery is equipped with tube well, drip and green house. The nursery was not able to sell the plants in bulk because farmers are procuring plants from the Government nurseries.

JIT visited area expansion of pomegranate of Shri Ashok Sain in village Kari and has covered 1.2 ha of area with 220 plants of pomegranate and 180 plants of Belpatra the survival rate is 90%. The beneficiary has tube well, drip and sprinkler under MIS programme. Subsidy of Rs. 22500 was disbursed. The pomegranate plantation was infected with termite and belpatra with borer insect & pest and was poorly maintained. Intercropping of rapeseed, mustered was recommended.

## **General Observations**

- 1 The works of area expansion, organic farming, establishment of nurseries and micro irrigation, etc. are being implemented satisfactorily in the district.
- 2 Farmers are well aware about organic farming, protected cultivation and micro irrigation.
3. There should be proper guidelines for the sale of plants through nurseries established under NHM and some targets must be given to each owner to raise plants for the sale under subsidy scheme. These nurseries must have sufficient number of mother plants for propagation.
4. Intercropping in fruit orchards is a good practice but sowing by broad casting method for intercrop must be avoided to restrict the competition for nutrient up take between orchard crops and intercrop.
5. Farmers should be made aware about timely training and pruning of fruit plants and plant protection measures.
6. Imparting training for pest management to farmers is necessary.

## **Visit to Bikaner District**

JIT visited Bikaner District on 7<sup>th</sup> January, 2011 which is a non-NHM district. A beneficiary under MIS scheme was covered and the activities of the Precision Farming Development Centre (PFDC) were visited.

A visit was paid to the site of Shri Pal Bishnoi, covered under MIS programme in 2010-11. An area of 2.86 ha. was bed – raised for cucurbits and was covered for low tunnel and mulching under RKVY programme. Work was in progress and the subsidy of Rs. 3.10 lakh was yet to be released.

## Precision Farming Development Centre, Bikaner

The Precision Farming Development Centre (PFDC), Bikaner has been involved to development regionally differentiated technologies for Precision Farming for its validation and dissemination and make available all needed information to farmers so that they are in a position to apply necessary inputs. PFDC, Bikaner is provided financial assistance from NHM on project basis through National Committee on Plasticulture Application in Horticulture (NCPAH).

The research achievement of PFDC Bikaner is:-

a. **Hydraulic evaluation of drip system in sandy soil:-** The information generated is being used in the western part of state for deciding dripper spacing in vegetable/field crops.

b. **Area of application: Drip irrigation and plastic mulching:-**

Objective	Crop and variety	Yield increase (%)	WUE (q/ha-mm)	BC Ratio on gross income basis
Comparative performance and evaluation over conventional (control)	Ber-Gola	46.17	0.35	6.10
	Pomegranate	34.44	0.05	1.87
	Jalore Seedless			
	Brinjal- Pusa Kranti	46.96	0.32	3.48
	Cabbage-Pusa Drum Head	80.42	0.68	1.55
	Tomato – Avinash	99.54	0.61	4.27
Fennel – RF-125	52.08	0.06	2.22	

### Average yield obtained during experimentations under drip & mulch

- 1 Ber: 101.30 kg/plant
- 2 Pomegranate : 41.45 q/ha
- 3 Cabbage : 191.56 q/ha

### Average yield obtained during experimentations under drip & mulch

- 1 Brinjal : 666.08 q/ha
- 2 Tomato : 570.70 q/ha
- 3 Fennel : 20.12 q/ha

### Technology developed by the PFDC, Bikaner

1. The Centre gave the concept of Kund Bagavani Yojana which was adopted in district Churu under DPIIP.

2. The Centre developed technique for providing water below soil surface through drip so as to avoid evaporation losses.
3. The drip loop system (ring method) promoted by the Centre for uniform distribution of water through drip irrigation system is being adopted by many adopted the farmers.

Physical and Financial progress under Micro – Irrigation in the State is given as under:-

#### **Physical and Financial progress under Micro – Irrigation in Rajasthan**

Year	Physical (Ha.)		Financial (Rs. in lakh)	
	Target	Area Covered	Release	Expenditure
2005-06	13032	0	1048.02	0
2006-07	39751	67721	2833.34	2687.46
2007-08	44707	73735	2341.14	2908.00
2008-09	40231	77729	2382.31	3009.15
2009-10	85211	95556	5693.15	5693.15
2010-11	148000	147613	12000	11999.36

#### **General Observations**

1. The team visited a farmer's field to check the implementation of micro irrigation programme and found that the installation measures were thoroughly followed. Good liaison between farmer and PFDC Bikaner was also noticed.

Although, Bikaner is non NHM district, even then, the farmer was laying plastic mulching and poly tunnels for vegetable cultivation in a large area.

2. The team also visited PFDC Bikaner to monitor the work undertaken at the centre and found that excellent work has been done at PFDC in the area of research, demonstration and trainings.

#### **Meeting with Director of Research, PFDC, Bikaner**

During the meeting with the Director of Research, PFDC, following issues were highlighted:-

- 1 Release of funds for the payment of salary arrear due to implementation of 6<sup>th</sup> pay commission.
- 2 Honorarium to resource persons in PFDC trainings.
- 3 The present training norms of DA to the farmers @ Rs. 100/- per day is not sufficient for lodging and boarding and the limit of TA i.e. Rs. 300/- per farmer is also not sufficient for the farmers of south and eastern districts.
- 4 One time grant of Rs. 35,000 is required for the repair of training hall. (under head recurring)
- 5 One time grant of Rs. 2,00,000 for furnishing 4 quarters of ARS Bikaner to use as farmers' hostel for PFDC training programmes.  
(For the purchase of 25 beds, mattresses, blankets or razai, bed sheets, pillows with covers.)
- 6 Permission for the purchase of one photocopier for Display Centre (Cost is about Rs. 40,000)

- 7 Permission for the purchase of one video camera. (Rs. 30,000)
- 8 The engagement of SRFs in PFDC project should not be restricted to one year. It should be coterminous with the project rather than one year.

### Visit to Sriganganagar District

JIT visited Sriganganagar District on 7<sup>th</sup> and 8<sup>th</sup> January, 2011

Sriganganagar district is one of the important districts of Rajasthan State. There has been a remarkable progress in respect of increase in area under horticulture crops during the last five years. The area under fruits has increased from 3500 ha in 1998-99 to 17000 ha in 2009-10. Out of which, 15000 ha. has been covered under citrus fruits viz. Kinnow, Malta/mousami.

Keeping in view the shortage of water in the District, the farmers are being motivated to adopt Micro Irrigation system in their respective fields. Drip Irrigation has been covered in 5500 ha, 800 ha under mini sprinkler and 3800 ha under big sprinkler. The Horticulture Department of the State is doing efforts to develop the plantation of flowers, aromatic plants viz. roses, Marigold etc. and lemon grass and Jamarosa. Apart from this, Kinnow plantation and pollination support through bee keeping is also being taken up of large scale. Under protected cultivation, farming of capsicum, tomato, seedless cucumber etc. have been taken up in green houses. The area under vegetables like carrot, peas, cabbage, cauliflower, potato and pumpkin etc. has increased to some extent.

Keeping in view, Kinnow as an important crop, provisions has been made for its grading, washing and packing etc. have been made in Sriganganagar district. There is a provision to set up three to four grading/waxing plants in the district during the next year. The farmers are coming forward to establish green houses, shade net etc. Under protected cultivation component. The Horticulture Department is organizing farmers training camps, horticulture fare for imparting day to day information about schemes under which the farmers could be benefited.

The Statistics in respect of Area and Production of fruits and vegetables in the districts is as under:-

#### Area under Fruits

(Area in Ha.)

Sr. No.	Fruits	Year					
		2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
1	Kinnow	4725	6400	8650	9620	10720	13220
2	Malta/Musami	910	960	1250	1300	1400	1500
3	Lemon	350	375	380	380	400	400
4	Ber	960	1225	1250	500	500	415
5	Guava	144	175	175	150	150	105
6	Aomla	365	625	550	150	150	110
7	Pomegranate	160	260	470	600	650	900
8	Others	96	96	96	96	96	100
<b>Total</b>		<b>7710</b>	<b>10116</b>	<b>12821</b>	<b>12796</b>	<b>14066</b>	<b>16750</b>

#### Production of Fruits

(Production in MT)

Sr. No.	Fruits	Year					
		2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
1	Kinnow	25000	55000	25000	78000	60000	90000
2	Malta/Musami	13000	16000	18000	12000	12500	13000
3	Lemon	2500	2800	3200	3000	3000	3100
4	Ber	5000	4000	4500	2500	2500	2020
5	Guava	400	500	550	400	400	350
6	Aomla	150	300	250	50	50	105
7	Pomegranate	75	150	250	500	700	4800
8	Others	240	250	250	250	250	250
<b>Total</b>		<b>46365</b>	<b>79000</b>	<b>52000</b>	<b>96700</b>	<b>79400</b>	<b>113625</b>

### Area under Vegetables

(Area in Ha.)

Sr. No.	Vegetable	Year					
		2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
1	Tomato	655	700	850	1000	1100	1400
2	Brinjal	275	375	450	500	550	700
3	Pumpkin	1350	2050	3000	4000	5500	6300
4	Okra	280	400	500	550	600	610
5	Cabbage	700	800	1200	1250	1400	1600
6	Onion	480	500	650	700	750	800
7	Potato	400	550	625	750	800	1000
8	Carrot	350	430	500	500	600	660
9	Peas	220	225	250	300	300	300
10	Others	1050	1250	1500	2000	2200	2500
<b>Total</b>		<b>5760</b>	<b>7280</b>	<b>9525</b>	<b>11550</b>	<b>13800</b>	<b>15870</b>

### Production of Vegetables

(Production in MT)

Sr. No.	Vegetable	Year					
		2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
1	Tomato	14000	15000	15000	15000	17000	20000
2	Brinjal	9000	11000	12000	12000	13000	12500
3	Pumpkin	17000	21000	28000	30000	40000	60000
4	Okra	2500	3000	3500	3500	4000	5000
5	Cabbage	12000	14000	18000	18000	20000	25000
6	Onion	13000	14000	17000	20000	22000	23000
7	Potato	12000	7000	11000	6000	16000	20000
8	Carrot	13000	15000	18000	20000	20000	21000
9	Peas	1500	1500	1600	1400	1500	1600
10	Others	13500	15000	18000	16000	20000	25000
<b>Total</b>		<b>107500</b>	<b>116500</b>	<b>142100</b>	<b>141900</b>	<b>173500</b>	<b>213100</b>



The area covered under Micro Irrigation component is given below:-

**Area under Micro Irrigation**

(Area in Ha.)

Year	Drip	Sprinkler	Fountain	Total Area under Drip
2006-07	1060.00	0.00	417.50	2438.00
2007-08	1000.00	0.00	969.00	3438.00
2008-09	1000.00	200.00	832.00	4438.00
2009-10	1010.00	610.00	1550.00	5448.00

**NHM Interventions**

The physical and financial progress under various components of National Horticulture Mission during 2009-10 in the districts are given as under:-

**COMPONENT WISE PHYSICAL & FINANCIAL PROGRESS OF NATIONAL HORTICULTURE MISSION DURING 2009-10**

(Rs. In Lac)

Component	Unit	Physical		Financial	
		Tar	Achi	Tar	Achi
<b>1.1 Planting Material</b>					
(a) Public sector Model nursery (4 ha.)	No.				
ii. Small Nursery (1 ha.)	No.				
(b) Private sector Model nursery (4 ha)	No.	1	0	9.00	0.00
ii. Small Nursery (1 ha)	No.				
<b>1.2 Vegetable seed production</b>					
(a) Private sector	Ha.	25	0	6.25	0.00
<b>2. Establishment of new gardens</b>					
<b>2.1 (a) Fruits (Perennials)</b>					
<b>i. New Plantation</b>					
Aonla	Ha.				
Ber		50	0	5.63	0.00
Kinnow		3150	1833	354.38	186.47
Lime		50	0	5.63	0.00
Pomegranate		50	448	5.63	50.20
Sweet Orange		100	21.58	11.25	2.03
Jooba		50	18.1	5.63	1.96
Others					
<b>Total</b>		<b>3450</b>	<b>2320.68</b>	<b>388.13</b>	<b>240.67</b>
<b>ii. 1st Year Maintenance</b>	Ha.				
Ber		1.5	9	0.07	0.41
Kinnow		677.11	427.93	30.47	19.17
Orange		26.77	12.97	1.21	0.58
Pomegranate		27	14.25	1.22	0.73
<b>Total</b>		<b>732.38</b>	<b>464.15</b>	<b>32.96</b>	<b>20.89</b>

iii. 2nd Year Maintenance	Aonla	Ha.	20.75		1.40	
	Ber		25.25	9	1.70	0.61
	Kinnow		604.8	447.7	40.82	30.15
	Pomegranate		63.15	16.25	4.26	1.10
<b>Total</b>			<b>713.95</b>	<b>472.95</b>	<b>48.19</b>	<b>31.85</b>
<b>2.2 Flowers</b>		Ha.				
(c) Loose	i. Small Scale Farmers		100	3.75	12.00	0.45
(c) Loose	i. General Farmers			71.2		5.64
			<b>100</b>	<b>74.95</b>	<b>12</b>	<b>6.09</b>
<b>2.3 Spices</b>		Ha.				
<b>2.4 Aromatic Plants</b>		Mehandi	Ha.			
<b>3. Rejuvenation senile plantations</b>		Ha.	200	201.30	30.00	30.20
<b>4. Creation of water resources</b>			35	35	273.00	273.00
<b>5. Protected cultivation</b>						
<b>5.2 Normal Green House</b>						
	(a) Small & Marginal Farmers	Sqm.	2000	0	6.50	0.00
	(b) Other farmers	Sqm.	19000	0	40.85	0.00
<b>5.3 Mulching</b>		Ha.	25	0	1.75	0.00
<b>5.4 Shade Net</b>		Sqm.	10000	0	0.70	0.00
<b>5.5 Plastic Tunnel</b>		Sqm.	7000	0	0.35	0.00
<b>7.2 Promotion of IPM</b>		Ha.	200	199.71	2.00	2.00
<b>8. Organic Farming</b>						
<b>8.1 Aoption of organic farming (Yr. 07-08)</b>		Ha.	200	0	20.00	2.54
<b>8.2 Vermi Compost units (000 No.)</b>		No.	15	17	4.45	5.07
<b>8.3 Certification (Yr. 07-08)</b>		Proj	200	0	20.00	0.72
<b>9.5 Training of Farmers</b>						
	(a) With State	Proj	550	400	8.25	3.93
	(b) Outside State	Proj	50	80	1.25	1.75
<b>Total</b>			<b>600</b>	<b>480</b>	<b>9.5</b>	<b>5.68</b>
<b>10.1 Distribution of colonies with hives</b>		No.	1000	1020	8.00	8.16
<b>11. Technology dissemination</b>						
<b>B. POST HARVEST MANAGEMENT</b>						
1. Pack Houses		No.	10	0	6.25	0.00
2. Ref. vans /containers		No.	4	0	24.00	0.00
<b>Total</b>			<b>14</b>	<b>0</b>	<b>30.25</b>	<b>0</b>
<b>D. MISSION MANAGEMENT</b>						
1. State & Districts Mission Structure		No.			41.73	22.65
<b>Grand Total</b>			<b>45511</b>	<b>5288</b>	<b>985.60</b>	<b>649.51</b>

The component wise beneficiaries for the period 2009-10 are as below :-

**No. of Beneficiaries**

(In No.)

Component	Unit	Beneficiary			
		Physical (No.)		Financial	
		Male	Female	Male	Female
<b>1.1 Planting Material</b>					
(a) Public sector Model nursery (4 ha.)	No.	NA	NA	NA	NA
ii. Small Nursery (1 ha.)	No.	NA	NA	NA	NA
(b) Private sector Model nursery (4 ha)	No.				
ii. Small Nursery (1 ha)	No.				
<b>1.2 Vegetable seed production</b>					
(a) Private sector	Ha.				
<b>2. Establishment of new gardens</b>					
<b>2.1 (a) Fruits (Perennials)</b>					
<b>i. New Plantation</b>	Aonla	Ha.			
	Ber				
	Kinnow		1099	120	157.94
	Lime				
	Pomegranate		180	20	45.72
	Sweet Orange		14	1	1.93
	Jooba		9	4	1.31
	Others				
	<b>Total</b>		<b>1302</b>	<b>145</b>	<b>206.90</b>
<b>ii. 1st Year Maintenance</b>		Ha.			
	Ber		7	1	0.36
	Kinnow		217	36	17.58
	Orange		6	2	0.49
	Pomegranate		4	2	0.46
	<b>Total</b>		<b>234</b>	<b>41</b>	<b>18.89</b>
<b>iii. 2nd Year Maintenance</b>	Aonla	Ha.			
	Ber		7	1	0.54
	Kinnow		259	19	28.95
	Pomegranate		6	3	0.66
	<b>Total</b>		<b>272</b>	<b>23</b>	<b>30.15</b>
<b>2.2 Flowers</b>		Ha.			
(c) Loose i. Small Scale Farmers			4	1	0.39
(c) Loose i. General Farmers			61	8	5.16
			<b>65</b>	<b>9</b>	<b>5.55</b>
<b>2.3 Spices</b>		Ha.			
<b>2.4 Aromatic Plants</b>	Mehandi	Ha.			
<b>3. Rejuvenation senile plantations</b>		Ha.	133	13	27.31
<b>4. Creation of water resources</b>			30	5	268.00
<b>5. Protected cultivation</b>					

<b>5.2 Normal Green House</b>					
(a) Small & Marginal Farmers	Sqm.	0	0	0.00	0.00
(b) Other farmers	Sqm.			0.00	0.00
<b>5.3 Mulching</b>	Ha.			0.00	0.00
<b>5.4 Shade Net</b>	Sqm.			0.00	0.00
<b>5.5 Plastic Tunnel</b>	Sqm.			0.00	0.00
<b>7.2 Promotion of IPM</b>	Ha.	97	14	1.74	0.26
<b>8. Organic Farming</b>					
<b>8.1 Aoption of organic farming (Yr. 07-08)</b>	Ha.	24	6	2.11	0.43
<b>8.2 Vermi Compost units (000 No.)</b>	No.	15	2	4.47	0.60
<b>8.3 Certification (Yr. 07-08)</b>	Proj			0.00	0.00
<b>9.5 Training of Farmers</b>					
(a) With State	Proj	400	0	3.93	0.00
(b) Outside State	Proj	80	0	1.75	0.00
<b>Total</b>		<b>480</b>	<b>0</b>	<b>5.68</b>	<b>0.00</b>
<b>10.1 Distribution of colonies with hives</b>	No.	48	3	7.68	0.48
<b>11. Technology dissemination</b>					
<b>B. POST HARVEST MANAGEMENT</b>					
1. Pack Houses	No.				
2. Ref. vans /containers	No.				
<b>Total</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>D. MISSION MANAGEMENT</b>		NA	NA	NA	NA
1. State & Districts Mission Structure	No.	NA	NA	NA	NA
<b>Grand Total</b>		<b>2700</b>	<b>261</b>	<b>578.49</b>	<b>47.51</b>

Sr. No.	COMPONENT	Unit	Beneficiary			
			Physical (No.)		Financial	
			Male	Female	Male	Female
1	Sprinkler	Ha.	237	36	32.10302	4.51276
2	Drip	Ha.	215	59	388.67737	115.9856
3	Mini Sprinkler	Ha.	91	33	241.43752	99.11322
4	Drip-Demo	Ha.				
5	Miss Exp					
<b>Total</b>			<b>543</b>	<b>128</b>	<b>662.22</b>	<b>219.61</b>

During field visits, the JIT visited Hanumangarh district on way to Sriganganagar district a field of the beneficiary named as Shri Madan Lal, covered under MIS scheme in 2010-11, was inspected. An area of 2 ha was covered and water harvesting structure was constructed with help of RKVY. 312 plants of date palm were taken up on the land. It was informed that there was no mortality. However, the team observed the leaf spots on the plants and redomil spray was recommended.

In Ganganagar district the team visited the sites of Kinnow Plantation and Nurseries, MIS programme, protected cultivation, vermi compost units, community water harvesting structure and floriculture. The details are as under:-

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	Observations
1	Smt. Ram pyari	Chak-3, BMM-Suratgarh	Kinnow Plantation	2009-10	3	1200	1200	100%	Subsidy of Rs. 47250 disbursed by cheques, Drip under MIS in working conditions, Water harvesting structures under RKVY Plants procured from registered nursery from Sriganganagar, Micro nutrient deficiency noticed, Agromin spray and windbreak protection was recommended.
2	Shri Balwant Ram	Chak-14 SGR-Suratgarh	Kinnow Plantation	2009-10	2	540	540	100%	Drip under MIS, subsidy of Rs. 31500 disbursed by cheques, well maintained.
3	Shri Hartz singh	Chak-5 DBN-Suratgarh	Kinnow Plantation	2009-10	2	800	800	100%	Subsidy of Rs. 31500 disbursed by cheques, Drip under MIS, General upkeep in good.
4	Shri Yashpal Singh	Chak-5 DBN-Suratgarh	Kinnow Plantation	2009-10	2.5	1000	100	100%	Subsidy of Rs. 39375 disbursed by cheques, Drip under MIS, General upkeep in good.

5	Shri Baldev Singh	Chak 13 SGR-Suratgarh	Kinnow Plantation	2007-08	1.5	560	560	100%	Subsidy of Rs. 10125 as third installment disbursed by cheques, Drip under MIS, water harvesting structure from RKVY irrigated by cannel, Intercropping of fodder, Gram and vegetables, healthy plants, labour shortage due to NREGA, maintenance is good. Fencing is required.
6	Smt. Ram pyari	Chak-3, BMM-Suratgarh	Drip under MIS	2009-10	3				Subsidy of Rs. 89516 disbursed by cheques, Drips supplied by PRIXIT, Anoopgarh. Crop-Kinnow, Drip in working conditions.
7	Shri Balwant Ram	Chak-14 SGR-Suratgarh	Drip under MIS	2009-10	2				Subsidy of Rs. 43953 disbursed by cheques, Drips supplied by HARVEL Aqua Ltd., Raisingh nagar. Crop-Kinnow, Drip in working conditions
8	Shri Yashpal Singh	Chak-5 DBN-Suratgarh	Drip under MIS	2009-10	2.33				Subsidy of Rs. 64138 disbursed by cheques, Drips supplied by PRIXIT, Anoopgarh. Crop-Kinnow, Drip

									<b>in working conditions.</b>
9	Shri Hartz Singh	Chak-5 DBN-Suratgarh	Drip under MIS	2009-10	2				Subsidy of Rs. 50477 disbursed by cheques, Drips supplied by Bansal Agrotech-Suratgarh, Crop-Kinnow, Drip in working conditions.
10	Shri Prithvi Raj and others	7F, BADA, Sriganga nagar	Community water harvesting structure	2009-10	50x40 x3 mtr. 4500 kg. ltr. Command area 10 ha.				An amount of Rs. 10 lakh has been disbursed linked with new plantations of Kinnow.
11	Shri Inder Sen	Chak-11 Q Sriganga nagar	Vermi compost unit - 8 beds	2009-10					Subsidy of Rs. 30000 released. Vermicompost for self consumption.
12	Smt. Shanti Devi	Chak-11 Q Sriganga nagar	Rejuvenation of Kinnow	2009-10	4.33	512			Subsidy of Rs. 30000 paid by cheque. Upkeep is good.
13	Shri Inder Sen	Chak-11 Q Sriganga nagar	Community water harvesting structure	2009-10	165x125'x15' 5100 kl Command area 13 ha				An amount of Rs. 10 lakh has been disbursed linked with old plantations of Kinnow.
14	Shri Pramod Beniwal	15 ML Bypass Road-Sriganga nagar	Normal Green House	2009-10	1008 Sq. Mtr.	10000 plants of capsicum			Green house is install by Shri Hari Green houses Pvt. Ltd. Talegaon – pune, Subsidy of Rs. 4.87 lakh disbursed. Crop-colored Capsicum-Market –

									Delhi and local market. Well maintained. Problem of thrips , anti chamber missing, curly leaves.
15	Shri Praveen Beniwal	15 ML Bypass Road-Sriganga nagar	Normal Green House	2009-10	1008 Sq. Mtr.	10000 plants of capsicum			Green house is install by Shri Hari Green houses Pvt. Ltd. Tale gaon – pune, Subsidy of Rs. 4.87 lakh disbursed. Crop-colored Capsicum-Market – Delhi and local market. Well maintained. Problem of thrips , anti chamber missing, curly leaves.
16	Shri Prashan Beniwal	15 ML Bypass Road-Sriganga nagar	Normal Green House	2009-10	1008 Sq. Mtr.	10000 plants of capsicum			Green house is install by Shri Hari Green houses Pvt. Ltd. Tale gaon – pune, Subsidy of Rs. 4.87 lakh disbursed. Crop-colored Capsicum-Market – Delhi and local market. Well maintained. Problem of thrips , anti chamber missing, curly leaves.
17	Shri Subash Wig	Chak 6 ZA-Sriganga nagar	Floriculture-Rose-Gangan agri	2009-10	2	20000	20000	100%	Subsidy of Rs. 15840 disbursed by cheque, crop retailed in local markets. Earning Rs. 2 lakh per year.



									Labour shortage. Fungus, copper based fungicide and pest of belitax on the cut surface of plant recommended . Upkeep is very good.
18	Cluster of 5 farmers	Chak 7F BADA ,Sri ganganagar.	Kinnow orchard	2009-10	10	1200	1200	100%	Subsidy of Rs. 10 lakh disbursed, Wheat as intercropping , use of drip, healthy plants, Nitrogen deficiency because of wheat intercropping .

### General Observations

1. The team visited farmers' fields to monitor various NHM activities in the district and found that the activities have been implemented nicely and displayed in a proper manner at every farm.
2. Pest and disease problems in capsicum cultivated under poly house were noticed.
3. Farmers are taking care of canopy management in citrus orchards.
4. It is recommended to construct a properly designed silt trap chamber with every water storage structure. Although, the chambers .are being constructed but they are not designed properly.
5. A diagnostic team may be constituted at district level to take care of pest and disease problems under protected cultivation.
6. Farmers may be advised to keep some gap between intercrop and fruit crop. Otherwise, this may increase nutrient up take competition between crops, sometimes resulting in poor growth of fruit plants.

## **Highlights of Meeting with Mission Director, Government of Rajasthan**

A wrap up meeting held with Shri Jagroop Singh Yadav, Mission Director, Government of Rajasthan on 8<sup>th</sup> January, 2011.. Based on the observations during the field visit, the following important issues were brought into their notice:-

- (a) Major focus in the state has been on area expansion wherein bulk of the expenditure has been incurred.
- (b) SHM intervention is needed to ensure production and availability of good planting material within reasonable distance.
- (c) Identification of more crops under Green House/shade net for better price in off-season.
- (d) Hi-tech interventions such as protected cultivation and fertigation needs to be promoted extensively.
- (e) Irrigation facilities such as community tanks etc are to be promoted in the Districts.
- (f) Efforts to train farmers in different horticulture activities are to be intensified.
- (g) Permanent display boards with NHM logo needs to be displayed wherever NHM assistance has been provided.
- (h) More efforts are needed for development of post harvest management and market infrastructures.
- (i) Extensive publicity of the NHM programme is needed at the block level.
- (j) Sufficient staff needs to be outsourced at block level for effective implementation of NHM programme in the State. The field consultants are required to be appointed exclusively for work relating to implementation of NHM programme.

Mission Director, Government of Rajasthan mentioned that the implementation of scheme of NHM in the State would be reviewed and assured the JIT that the pace of implementation of NHM scheme would be stepped up.