HORTICULTURE TRAINING INSTITUTE,
UCHANI (KARNAL) HARYANA-132001

Annual Report
2014-15

DEPARTMENT OF HORTICULTURE
GOVERNMENT OF HARYANA

Telephone: +911842265484; Fax: +911842266484,
E-mail id: htiharyana@gmail.com


DEPTT. OF HORTICULTURE HARYANA
SEMINAR
ON
PESTICIDE RESIDUAL EFFECTS ON FRUITS AND VEGETABLES

CONTENTS

CHAPTER - 1 About HTI

Horticulture Training Institute (HTI) was established in 1998 under the aegis of Department of Horticulture, Government of Haryana in AHRD project of World Bank with an amount of Rs. 11.76 crores. It is situated on National Highway No. 1, 122 km from Chandigarh and 130 km from New Delhi in village Uchani district Karnal. It was initiated to cater the needs for capacity building in the field of horticulture.

The mandate of HTI is to assist the government of Haryana to improve the skills of extension personnels and farming fraternity. The institute takes up various activities such as training programmes, demonstration, study tours, exposure visits, consultancy, production of quality planting material and horticulture education. Training is an integral part of the Institute's mandate. As part of the training activity, HTI conducts a series of training programmes, workshops, seminars and study visits, on key theme areas for officials and farmers involved in the field of horticulture. HTI also organizes specialized training programmes in response to request from the state Government departments and other organizations.

Administrative Block:- Horticulture Training Institute, Uchani (Karnal) has a administrative block with a covered are of 17860Sft. The administration block includes 19 rooms having total covered area 4800 Sft. These rooms are meant for the Principal office, trainers, teaching staff and office staff. In addition there are 12 rooms with a covered area of 6636 sft. There are four lecture rooms with audio-visual aids

Hostel:- HTI has a well furnished hostel meant for comfortable stay of the trainees (mostly farmers). It has twenty four rooms with attached bathroom and fully furnished two VIP rooms. The hostel has a big dinner hall, kitchen and a VIP lounge.

Garden & Nursery :- The institute have a demonstrative garden & nursery. The SDC & GCC students practical are conducted in this area.

Auditorium:- The institute has a state the art air conditioned mini-auditorium with sitting capacity of 100 persons. Conference, seminars, meetings are generally conducted in this auditorium. It has LCD projector. The total covered is of the 2061 sft.

Food processing Lab:- The institute has a fully fledged food processing lab. Practical training to the students of supervisor diploma course is imparted in this lab. It has all these facility required processing lab. Short duration practical course for women farmers are conducted in this lab.

Plant Protection Lab:- the training institute has a plant protection lab for the benefit of the students & farmers. Live sample of different insect & pest and disease have been display in the lab.

1.1 Mission

HTI takes its mission to be one of facilitating the acquisition of managerial and technical skills of Extension Officers, Malis, farmers (Male & female) and ministerial staff in all sectors of horticulture with a view to enable them to provide the most effective support and services to farming community.

As an apex institute in the state, HTI functions as pacesetter in capacity building in the field of horticulture. The sharing of its wealth of experience with other institutions, thus enabling them to adapt and adopt these innovations is one of its core concerns.

1.2 Vision

Our vision is 'Horticulture growth through awareness'. HTI wants to be counted among the most pioneering, innovative, user friendly horticulture institute in India.

1.3 Mandate

1. To improve the skills of extension personnel and farming fraternity through awareness.
2. Capacity building of young entrepreneurs to provide service in public as well as private sectors.
3. To organize need based training for other departments, institutions & farmers.

1.4 Core Values

1. Farmer centric approach in all professional services.
2. Interactive and experiential learning methodology.
3. User friendly environment.

CHAPTER – 2 TRAINING PROGRAMMES 2014-15

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As an apex institute for skill development in the field of horticulture in Haryana state, HTI is expected to take up capacity building programmes for professionals to meet emerging needs in the field of horticulture. HTI has been organizing training programmes in past (see Annexure – I) on emerging fields. The attempt is not merely to provide conceptual understanding on a given theme but also to provide necessary skills in operational aspects.

Training programmes are designed taking into consideration training needs of the field functionaries. The training calendar after consideration of Principal HTI is approved by the Director General Horticulture Haryana. In addition to programmes in the training calendar, HTI also organizes programmes sponsored by various organizations which are specifically designed to suit customer requirements.

Programmes for the year 2014-15 were planned with the focus to develop skills in Hi-tech horticulture. There has been a growing need of protected cultivation of vegetables. The sub theme included were pollination support through bee keeping, post harvest technologies and micro irrigation. In addition to these, programmes were planned on training for ministerial staff in terms of computers, accounts and establishment matters. In view of the emerging private sector in horticulture field themes such as entrepreneurship development were included in calendar. Programmes were also organized for capacity building in themes relating to horticulture at supervisors and gardener level.

2.1 Methodology

The methodology of the training programmes is based on experiential learning which focuses on an interactive learning which focuses on an interactive learning process. In addition to lectures, success stories and field visits on a given theme are utilized with a view to making the discussions practical oriented. The focus is on operational and practical aspects of the themes so that the participants can attempt to apply the same in their work situations. Field visits are organized to give first hand exposure to the best practices. Audio-visual aids are also used to demonstrate successful initiatives.

2.2 Theme areas

The training programmes during 2014-15 covered the following main areas:

- Hi-tech horticulture
- Nursery management and plant propagation
- Computers, establishment and account matters
- Post harvest technologies
- Pollination support through bee keeping
- Organic farming
- Mushroom Production Technique.
- Cultivation technology of medicinal plants.
- Flower Cultivation under open and controlled conditions
- Rejuvenation of smile/unproductive orchards
- Vegetable seed production technology
- Refresh course of technical officers
- Processing, Preservation and Value Addition in horticultural crops
- Sericulture techniques
- Pesticide and its residue effect.
- Training of board of director, A/c keeping & minutes writing of FPO's

In all, seventy one training programmes were organized during 2014-15, as planned in the training calendar. In addition to the planned programmes, seven seminars/workshop were taken up as per direction from Head quarter. These include training programmes for the participants under national horticulture mission, AHRD and other schemes. Thus in total 71 programmes were organized during 2014-15 covering 2645 participants.

The theme-wise break-up of the training programmes for the period April 2014-March 2015 is given below:

2.3 Training programmes conducted during 2014-15

S. No.	Particulars	Planned as per academic calendar 2014-15	Achievements No. of programmes organized	No. of participants
1.	Nursery Management and plant/ seed propagation	2	2	71
2.	Computers, establishment and account matters	1	1	36
3.	Post harvest technologies	4	4	147
4.	Pollination support through bee keeping	6	6	276
5.	Organic farming in horticultural crops	3	3	148
6.	Mushroom production technology.	3	3	105
7.	Cultivation technology of medicinal plants	2	2	95
8.	Protected cultivation in horticultural crops	8	8	285
9.	Flower cultivation under open & controlled condition	3	3	133
10.	Rejuvenation of smile/unproductive orchards	2	2	66

11.	Vegetable seed production technology	1	1	43
12.	Refresh course of technical officers	6	6	245
13.	Processing, preservation and value addition	15	15	427
14.	Sericulture technology	1	1	28
15.	Pesticides & its Residual effects	4	4	151
16.	Training of board of director, A/c keeping & minutes writing of FPO's	4	4	144
17.	Fruit production technology	3	3	101
18.	Pressurized irrigation technology in fruit and vegetable crops.	3	3	144
		71	71	2645

2.3.1 Nursery Management and Plant/Seed propagation

Nursery stock production is a vibrant sector of the horticultural industry responsible for the growing of a wide variety of hardy and half-hardy plants. The method of production of more than one plant from the mother plant or the tissue over a specific time period is termed as plant propagation. The production of true to type progeny from the mother plant is the prime objective of propagation. Plant propagation depends on the plant species, variety, method of propagation, climatic and growth conditions.

Plant propagation is primarily done by conventional methods, which include sexual and asexual methods. However, in the recent past plant propagation through biotechnological applications have made great contributions towards mass scale production of plants.

This topic was designed for the departmental mali's to strengthen their skills in the advances in the propagation techniques. This topic develops an understanding of plant propagation (seed and cuttings), nursery hygiene, plant health, potting mixes and soils, production efficiencies, marketing, management and more. This covering both management and horticultural studies relating to running a wholesale nursery. It is comprehensive and demanding. A total 71 mali's participated in this programme.

S.No.	Date	No. of participants
1.	01.04.2014 to 04.04.2014	37
2.	17.11.2014 to 21.11.2014	34

2.3.2 Computers, Establishment and Account Matters

How did computers come into being? What can they do? Are we able to use them in the Accounting field? Do they simplify all the Accounting work? What's the outlook for computers in the future? Literature everywhere is telling us that the computer simplifies everything. For accounting staff to become fully equipped to go out into the world of work, it is becoming necessary for them to understand how the ideas for the computer evolved over the years. It is becoming imperative that they understand how much simpler it is today to do Accounting on a computer. They must learn how to do their work of account matters as well as establishment matters on the computer. This course was designed for the ministerial staff of the Department of Horticulture, Haryana.

S.No.	Date	No. of participants
1.	21.04.2014 to 25.04.2014	36

2.3.3 Post harvest management in horticultural crops

In India, there is a vast scope for growing fruit and vegetable throughout the year in one or other part of the country because the climatic conditions are highly suitable for growing various types of fruits and vegetables. Fruit and vegetable are available in surplus only in certain seasons and availability in different regions. In peak season due to improper handling practices, marketing, storage problems around 20-25% fruit and vegetable are spoilt in various stages. Fruit and vegetable are living commodities as they respire. Hence, proper post harvest management handling and processing is required in horticulture crops. A variety of fresh fruit and vegetable in India can be made available in plenty due to favorable agro-climatic situations. Hence there is no dearth for raw material for processing. Product profile being developed in India at present is limited to few fruit and Vegetable e.g. Mango, Pineapple, Grapes *etc*. But there is a wider potentiality for processing of papaya, sapota, banana, jack, guava, aonla and other minor fruits. Similarly there is a greater scope for processing cauliflower, carrot, bitter-gourd, onion, garlic, watermelon, muskmelon *etc.*

Proper handling, packaging, transportation and storage reduce the post harvest losses of fruit and vegetables. For every one percent reduction in loss will save 5 million tons of fruit and vegetable per year. Processing and preservation technology helps to save excess fruit and vegetable during the glut season (off season). The technology has become a necessity to improve the food safety and strengthen nation's food security. The technology helps to boost export of agricultural commodities in the form of preserved and value added products. Presently, mango, pineapple, citrus, grapes, tomatoes, peas, potato and cucumber are being processed on a large scale.

S. No.	Date	No. of participants
1.	18.08.2014 to 22.08.2014	53
2.	08.09.2014 to 12.09.2014	27
3.	22.09.2014 to 26.09.2014	32
4.	10.11.2014 to 14.11.2014	35

2.3.4 Pollination/Bee keeping

Honey bees contribute a lot to the crop production in cross pollinated crops. Many of the country's crops would not exist without the honey bee at bloom time. As honey bees gather pollen and nectar for their survival, they pollinate crops such as apples, cranberries, melons and broccoli. Some crops, including blueberries and cherries, are 90-percent dependent on honey bee pollination; one crop, almonds, depends entirely on the honey bee for pollination at bloom time. For many others, crop yield and quality would be greatly reduced without honey bee pollination.

To aware the farmers regarding pollination support through bee keeping six specialized trainings were organized.

S. No.	Date	No. of participants
1.	14.04.2014 to 17.04.2014	35
2.	02.06.2014 to 06.06.2014	76
3.	16.06.2014 to 20.06.2014	44
4.	08.12.2014 to 12.12.2014	47
5.	29.12.2014 to 02.01.2015	45
6.	07.01.2015 to 09.01.2015	29

2.3.5 Organic Farming in Horticultural Crops

Organic fruit production essentially excludes the use of many inputs associated with modern farming, most notably synthetic pesticides and fertilizers. To the maximum extent possible, organic farming systems rely upon crop rotations, crop residues, animal manures, legumes, green manures, off-farm organic wastes, mechanical cultivation, mineral- bearing rock powders and biological pest control. These components maintain soil productivity and tilth, supply plant nutrients and help to control insects, weeds and other pests. For skill development in organic farming in horticulture crops three training were organized for farmers.

S.No.	Date	No. of participants
1.	26.05.2014 to 30.05.2014	50
2.	14.07.2014 to 18.07.2014	58
3.	09.03.2015 to 13.03.2015	40

2.3.6 Mushroom Production Technology

The state of Haryana ranks third in producing mushroom in the country. Sonepat district ranks 1st in mushroom while Panipat & Gurgaon ranks 2nd and 3rd in mushroom production respectively. Mushroom is a nutritious food containing good percentage of protein, iron vitamins and salts. Being raw of fats and carbohydrates this is an ideal food for heart and diabetic patients. Although there are many varieties of mushroom available in the country but only white button mushroom. Milky mushroom and dhingri mushroom are cultivated in Haryana. For cultivation of mushroom not much land is required and even the landless farmers can take up the cultivation of this crop. Farmers of the state has shown keen interest in the cultivation of mushroom. Specialized training in cultivation of mushroom everyyear to the farmers before the season. Button mushroom is cultivated reasonably when climatic conditions are favorable and production expenses are minimum. Seasonal growing of white button mushroom in Haryana has many advantages like nearest to market, easy and cheap availability of raw material coupled with utilizations of family labour. White button mushroom required 20-28^{0}c for vegetarian growth & 12-18^{0}C for reproductive growth. Besides it requires relative humidity of 80-90^{0}c and enough ventilation during growing seasons. Growers can take 3-4 crops of white button in a year depending on the type and variety cultivated. Factors affecting the yield or the crop. Both in terms of quality and quantity and incidence of posts/pathogens and non-availability of good quality of spawn.

S.No.	Date	No. of participants
1.	12.01.2015 to 16.01.2015	48
2.	26.01.2015 to 28.01.2015	27
3.	28.01.2015 to 30.01.2015	30

2.3.7 Cultivation techniques of medicinal plants

The agroclimatic conditions of India provide are ideal condition for natural growth of a variety of medicinal plants and herbs important in pharmaceutical industry. The aromatic plants provide raw material for the production of flavors, herbal cosmetics perfumery etc. Important aromatic plants are lemon grass, citronella, lavender, basil, jasmine etc. India having a waste area of land and with the cultivation of medicinal and aromatic plants. The exports of these plants and their products have a tremendous potential particularly in advance countries. Efforts to commercial ling cultivate several medicinal and aromatic plants have been made and improved varieties have been released, with the setting up of National Mission for Medicinal and Aromatic plants, its cultivation is bound to boost up absence of proper market, availability of planting material are some of the hindrances in cultivation of these plants. Production technology of Aleovera, Ashwagandha, Mulathi, Safed Musli, Sada Bahar etc. have been worked out.

S. No.	Date	No. of participants
1.	01.09.2014 to 05.09.2014	60
2.	19.01.2015 to 23.01.2015	35

2.3.8 Protected Cultivation in Horticultural Crops

The crop productivity is influenced by the genetic characteristics of the cultivar, growing environment and management practices. Under open field cultivation, while the other factors could be taken care of, it is not possible to effect control on the environment around the plant. The plant's environment can be specified by five basic factors, namely – light, temperature, humidity, carbon dioxide and nutrients. The main purpose of protected cultivation is to create a favorable environment for the sustained growth of plant so as to realize its maximum potential even in adverse climatic conditions. Greenhouses, Naturally ventilated polyhouses, walk in tunnels, rain shelters, plastic tunnels, mulches, insect-proof net houses, shade nets etc. are used as protective structures and means depending on the requirements and cost-effectiveness. Besides modifying the plant's environment, these protective structures provide protection against wind, rain and insects.

Protective cultivation offers several advantages to produce vegetables and flowers of high quality and yields, thus using the land and other resources more efficiently. The farmers are being trained theoretically and practically on these aspects by providing training on this area.

S. No.	Date	No. of participants
1.	07.04.2014 to 09.04.2014	46
2.	21.10.2014 to 03.11.2014	33
3.	03.11.2014 to 07.11.2014	46

4.	05.01.2015 to 07.01.2015	30
5.	05.01.2015 to 07.01.2015	20
6.	09.02.2015 to 13.02.2015	40
7.	23.02.2015 to 25.02.2015	28
8.	02.03.2015 to 05.03.2015	42

2.3.9 Flower cultivation under open & controlled condition

Floriculture is increasable reported as a viable diversification from the traditional field crops because of similar returns per unit area and the increasing habit of saying it with flowers during all the occasions. Though art of growing flowers is not new to India, but large scale commercial cultivation, protected cultivation is relatively new, enormous genetic diversity, varied aero climatic conditions, availability of human resources offer a unique scope of diversification.

The domestic industry is growing at annual rate of 7-8% for annum, floriculture crops, include bedding plants, home plants, flowering garden and pot plants, production technology of important flowers like Roses, Marigold, Gladiolus, Tuberose, Chrysanthemum, Lilium, Gerbera etc. have been worked out both under open and protected conditions. Three trainings were organized on this topic for awareness.

S. No.	**Date**	**No. of participants**
1.	04.08.2014 to 08.08.2014	59
2.	28.08.2014 to 29.08.2014	37
3.	23.03.2015 to 27.03.2015	37

2.3.10 HDP, Rejuvenation and Canopy Management of Fruit Crops

High-density planting is emerging as a useful intervention for enhancing the productivity of horticultural crops per unit area. It is being practiced successfully in apple in Jammu and Kashmir, banana in Maharashtra and to some extent mango in Uttar Pradesh. Technology has been developed for cashew and other crops also. It is proposed to promote the technology as a package duly integrated with fertigation and other hi-tech interventions.

The decline of productivity has been attributed to various factors. The most of the problems are due to faulty management i.e. unsuitable site and climate, cultivation of intercrops, inadequate nutrition's, improper planting, undesirable planting materials, incidence of insect, pest and disease and other biotic and a biotic stresses. The growers do not adopt the proper management practices in terms of plant protection, manuring, irrigation, mulching, pruning etc. and the orchards become sick. In general, canopy of fruit crops has irregular shape. Trees of irregular shape and size are difficult to deal with and even culminate into poor yield in the subsequent years as the lower branches of canopy gradually turns inert and infertile as well.

Rejuvenation Strategies:

- Providing technical know-how including plant health coverage and nutritional management programme.
- Re-plantation of old & uneconomical orchards.
- Gap filling by providing disease free quality seedlings.
- The development agencies may prepare comprehensive orchards management programme providing all the necessary inputs like plant nutrient, plant protection chemical, horticultural equipment and periodical training's.
- Training is an important component, which improves over all efficiency of the knowledge and skill of field functionaries.
- Complete technological information on management of decline orchard may be packaged and same may be disseminated in farmer's field.

Canopy Management

- Older plantations of seedling origin which have become senile can be adopted for top worked by grafting (budding) with scion of superior varieties to upgrade seedling plantation with superior commercial varieties
- There is a tendency of overlapping of canopy between 10 and 12 years of age depending on the nature of variety unless the canopy is maintained by trimming and thinning plantations which have overlapping branches.
- This is possible by hedging of branches followed by shoot management to modify the tree structure and maintain canopy size.

To provide a comprehensive knowledge on High Density Planting, Rejuvenation and Canopy management a series of trainings were organized for the farmers of Haryana state.

S.No.	Date	No. of participants
1.	24.11.2014 to 28.11.2014	35
2.	02.02.2015 to 06.02.2015	31

2.3.11 Vegetable Seed Production Technology

Availability of quality seed is of almost important for increasing the vegetable production and productivity. Vegetable growers recognize quality seed of improved variety as the most important input the higher & better vegetables yield. Production technology of seeds vary from location to location and crop to crop. Timely operations not only ensure which harvest but also guarantee varieties purity and freedom from undesirable weeds, diseases and pests. Farmers and officers are imparted training on these aspects of vegetable seed production emphasis is laid on there factors, which contribute to and effect seed quality e.g Seed Source method of sowing, rouging, harvesting and post harvest operations.

S.No.	Date	No. of participants
1.	02.01.2015 to 04.01.2015	43

2.3.12 Refresh course of technical officers

Technical officers of the directorate of horticulture which include Assistant Project Officer, Horticulture Development Officers & Horticulture Supervisor were important training on the latest technologies which have been development recently to keep up their refresher with the latest development to update their knowledge. They were given training on high density plantation, micro irrigation, protected cultivation, latest technologies of propagation, cultivation of

important commercial flowers, integrated pest management use of bio pesticides and bio-fertilizers exposure visits has also conducted on this occasion.

S. No.	Date	No. of participants
1.	17.04.2014 to 18.04.2014	104
2.	28.04.2014 to 02.05.2014	31
3.	26.05.2014	21
4.	07.07.2014 to 11.07.2014	24
5.	27.10.2014	15
6.	16.02.2015 to 20.02.2015	50

2.3.13 Processing, Preservation and Value Addition

Through the establishment of cold storage and other amenities at the growers and retailers level, there is a greater scope for fruit and vegetable processing industry. Presently mango, pineapple, citrus, grapes, tomatoes, peas, potatoes, cucumber are being processed on a major scale. There are about 4000 small and large scale processing units in the country which process only about 2.5% of the total fruit and vegetable as against 40-85% in developed countries (e.g.: Malaysia-83%, Phillippines-78%, Brazil and USA-70%).

Fruits and vegetables are highly perishable but most important commodity for human diet due to their high nutritional value. They are the cheapest and other source of protective food supplied in fresh or processed or preserved form throughout the year for human consumption. Fruit and vegetable are available in surplus only in certain seasons and availability in different regions. Proper handling, packaging, transportation and storage reduce the post harvest losses of fruit and vegetables. For every one percent reduction in loss will save 5 million tons of fruit and vegetable per year. Processing and preservation technology helps to save excess fruit and vegetable during the glut season (off season). Hence, to aware the farming community in remote areas this course was designed for female farmers.

S.No.	Date	No. of participants
1.	23.05.2014 to 25.05.2014	50
2.	29.05.2014 to 31.05.2014	40
3.	12.06.2014 to 14.06.2014	20
4.	12.06.2014 to 14.06.2014	10
5.	24.06.2014 to 26.06.2014	30
6.	30.06.2014 to 01.07.2014	20
7.	01.08.2014 to 03.08.2014	30
8.	11.08.2014 to 15.08.2014	15

9.	15.08.2014 to 18.08.2014	30
10.	29.09.2014 to 01.10.2014	20
11.	20.10.2014 to 22.10.2014	20
12.	01.12.2014 to 05.12.2014	60
13.	22.12.2014 to 24.12.2014	21
14.	25.02.2015 to 27.02.2015	30
15.	09.03.2015 to 11.03.2015	31

2.3.14 Sericulture Technology :-

An our country favorable conditions for mulberry cultivation foxvails and its mailly cultivated in Karnataka, Andhra Pardesh, Tamilnadu, West Bangole and Jammu & Kashmir. These states occupied 97% of total mulberry cultivation and contributed 95 % raw silk production in India. Possibility of the cultivation are also being explored in Haryana and training imparted to the farmers and provide technical know how on cultivation on mulberry and rearing of silk warm.

S.No.	Date	No. of participants
1.	05.05.2014 to 09.05.2014	28

2.3.15 Pesticides and its Residual Effect

Pesticides prevent, destroy, attract, rapid of control pests including unwanted species of plants or animals during production, storage, transport, distribution and processing of foods, agricultural commodities or animal feeds which may be administered to animals to control ectoparasites. Pesticides are invaluable inputs for increasing agricultural production, because pests and diseases destroy up to one third crops during growth, harvest and storage. However, the rapidly increasing usage of pesticides often with in sufficient advice or research has brought many environmental problems. Various environmental effects of pesticides includes natural enemies are destroyed; human pesticides poison age, honey bee and pollination & wild life effects. Development of resistance due to continuous use of pesticides residue in food, water, air, soil, grains; vegetables and animal feed cause a great concern. Edible portion of plants are contaminated with pesticides through foliar application, transportation of pesticides from soil or water and seed treatment.

Good agricultural practices encourage safe & need based use of pesticides recommended for field conditions. Pesticides residues enter into human body through the treated foods to keep the under control, it is necessary to study the time limits between pesticides application & consumption of the produce. Three trainings were organized on this topic for awareness.

Sr.	Date	No. of participants
1.	19.05.2014 to 23.05.2014	40
2.	15.09.2014 to 19.09.2014	43
3.	16.10.2014 to 20.10.2014	30
4.	27.10.2014 to 31.10.2014	38

2.3.16 Training of board of Director, a/c keeping & minutes writing of FPO's

S. No.	Date	No. of participants
1.	23.06.2014 to 27.06.2014	38
2.	27.06.2014 to 30.06.2014	48
3.	15.12.2014 to 19.12.2014	38
4.	28.01.2015 to 30.01.2015	20

2.3.17 Fruit Production Technology

India has a wide variety of climate and soils on which large no. of horticultural crops are grown. After the green revolution in the sixties, it became clear that the horticulture for which the Indian topography and agro climate are well suited, is, an ideal method of achieving sustainability of small holding diversification in horticulture is a best option as there are several advantages of growing horticultural crops. Those crops highly remunerative, have potential for development of waste lands, need less water than food crops, provide higher employment opportunities, are important for nutritional securities, are environment friendly, are high value crops with high potential of value addition, have high potential for foreign exchange earnings and make higher contribution to GDP.A large variety of fruit, are grown in India of these, mango, citrus, guava, sapota, ber, litchi, aonla, peach, plum, pear and grapes are important. AProduction technology of these fruits has been developed. Emphasis is given on high density plantation, micro-irritation. Under National Horticulture Mission growers are encouraged to take up

cultivation of fruits crops depending on the soil, irrigation and climatic conditions. Package of practices with regard to suitable cultivates, propagation method, fertilizer, irrigation and control of insect, pest and diseases of all the fruits have been developed to cultivate fruits on scientific lines.

Sr.	Date	No. of participants
1.	12.05.2014 to 16.05.2014	40
2.	15.12.2014 to 19.12.2014	34
3.	05.02.2015 to 09.02.2015	27

2.3.18 Pressurized irrigation technology in fruit and vegetable crops

Micro irrigation is a low pressure, low volume irrigation system suitable for high-return value crops such as fruit and vegetable crops. If managed properly, micro irrigation can increase yields and decrease water, fertilizer and labor requirements. Micro irrigation applies the water only to the plant's root zone and saves water because of the high application efficiency and high water distribution uniformity. Micro irrigation can irrigate sloping or irregularly-shaped land areas that cannot be flood irrigated. Any water-soluble fertilizer may be injected through a micro irrigation system. Micro-irrigation including micro spray, surface drip and subsurface drip irrigation methods can deliver water precisely and efficiently. Micro irrigation is commonly used for irrigation of high value horticultural crops, orchards and vineyards. Subsurface drip irrigation (SDI) is gaining popularity in production of agronomic “row” crops, especially in areas of limited well capacities and where small or irregularly shaped fields give SDI a competitive advantage over other irrigation technologies and methods. For skill development these trainings were organized to increase understanding of irrigation efficiency, losses, and distribution uniformity associated with micro irrigation and to increase understanding and application of best management practices to improve efficiency and uniformity of micro-irrigation.

S. No.	Date	No. of participants
1.	09.06.2014 to 13.06.2014	43
2.	21.07.2014 to 25.07.2014	54
3.	06.10.2014 to 10.10.2014	47

2.4 Seminars/ Workshops conducted during 2014-15

In all two seminars/ workshops/ state level training programmes were organized during the year 2014-15. The participants were farmers, departmental officers, companies etc covering a total of 239 participants.

S. No	Topic	Venue	Date	Total participants
1.	Pesticide& its residual effect	HTI, Uchani	23.05.2014	114
2.	Pesticide& its residual effect	HTI, Uchani	28.10.2014	125

2.5 Exposure visits/ study tours conducted during 2014-15

The exposure visits of farmers were conducted to demonstrate the farmers the technologies developed/ used by the farmers of different zones. Six exposure visits/ study tours outside the state were conducted by HTI during 2014-15. The participants were farmers, students and departmental officers. A total of 121 persons visited the different sites for different purpose.

S. No.	State visited	Students & Farmers	Date	Participants
1	H.P	Women farmers	14.05.2014 to 19.05.2014	20
2	H.P	Women farmers	04.06.2014 to 09.06.2014	20
3	H.P	Women farmers	17.06.2014 to 22.06.2014	20
4	U.K	Farmers	14.07.2014 to 19.07.2014	20
5	H.P, U.K., U.P	Farmers	11.08.2014 to 16.08.2014	20
6.	Karnataka, Tamilnadu,	FPO's	20.08.2014 to 30.08.2014	21

2.5.1 Exposure visit of farmers for Citrus, Medicinal and Aromatic Plants

One batch of 20 progressive farmers from Sirsa District Hill Agriculture Research and Extension Centre, and KVK, Dhula Kuan, Centre for Aromatic Plants Selaqui, Haridwar, Company Bag, Saharpur (U.P) and progressive farmers field during 11.08.2014 t0 16.08.2014 under MIDH scheme with a budget of Rs.143000/- (Rupees one lac forty three thousand only).

2.5.2 Exposure visit of women farmers for processing unit & mushroom

Three batch of 60 progressive women farmers from different districts visited Directorate of Mushroom Research Solan and Processing Units in Himachal Pradesh particularly Shimla and Palampur area during 14.05.2011 to 19.05.2014, 04.06.2014 to 09.06.2014 and 17.06.2014 to 22.06.2014 under AHRD Plan scheme with a total budget of Rs. 2, 16,000/- (Rupees two lac sixteen thousand only).

2.5.3 Exposure visit of farmers for Horticulture crops, Mushroom

One batch of 20 progressive farmers from Palwal districts visited Shri Ram Salvant Jaspur G.B Pant Agri. & Tech. University Pant Nagar, Indo Italian project of mushroom Jyolicot, Nanital (U.K) and farmers fields in area Nanital, Udam Singh Nagar under during 14.07.2014 to 19.07.2014 under MIDH scheme with a budget of Rs. 146000/- (Rupees one lakh forty six thousand only).

CHAPTER – 3 Horticulture Education Programmes

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HTI launched three long term courses focusing capacity development in the field of horticulture to cater the emerging needs of trained manpower in Government and private sector.

Sr. No.	Name of course	Duration	Year	Intake capacity	Passed
1.	**Horticulture Supervisor course**	12 months (2 sem.)	2008-09	25	21
2.	--do--		2009-10	25	21
3.	--do--		2010-11	25	13
4.	--do--		2011-12	25	24
5.	--do--		2012-13	25	22
6.	--do--		2013-14	25	23
			2014-15	25	Appearing
7.	**Gardener Certificate Course**	6 months (1 sem)	2008-09	50 (2 x 25)	19
8.	--do--		2009-10	50 (2 x 25)	52
9.	--do--		2010-11	50 (2 x 25)	33
10.	--do--		2011-12	50 (2 x 25)	44
11.	--do--		2012-13	50 (2 x 25)	52
12.	--do--		2013-14	50 (2 x 25)	49
			2014-15	50 (2 x 25)	45
13.	**Entrepreneur Course**	3 months	2008-09	75 (3 x 25)	72
14.	**Organic Farming**		2011-12	20	16

3.1 Horticulture Supervisor Course: This is one year diploma course. Two semesters of six months each. The essential qualification for this is 10 + 2 or equivalent. The total intake capacity is 25 students. This course was started in the year 2008-09 with the help of National Horticulture Mission (NHM) a centrally sponsored scheme with the aim of capacity development in the field of horticulture.

3.2 Gardener Certificate Course: This is six months certificate course of one semester. The essential qualification for this course is middle. The total intake capacity is 25 students. This course was started in the year 2008-09 with the help of National Horticulture Mission (NHM) a centrally sponsored scheme with the aim of capacity development in the field of horticulture.

3.3 Entrepreneur Course: This is three months certificate course. The essential quail - fication for this is 10 + 2 or equivalent. The total intake capacity is 20 students. This course was started in the year 2008-09 with the help of National Horticulture Mission (NHM) a centrally sponsored scheme with the aim of capacity development in the field of horticulture.

CHAPTER – 4 HERBAL PARK

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India has 15 Agroclimatic zones and 17000-18000 species of flowering plants of which 6000-7000 are estimated to have medicinal usage in folk and documented systems of medicine, like Ayurveda, Siddha, Unani and Homoeopathy. About 960 species of medicinal plants are estimated to be in trade of which 178 species have annual consumption levels in excess of 100 metric tones.Medicinal plants are not only a major resource base for the traditional medicine & herbal industry but also provide livelihood and health security to a large segment of Indian population.

At HTI campus one Herbal Park was developed in which more that 33 different types of medicinal

plants are demonstrated along with their botanical names, common names and uses in Hindi.

S. No.	Botanical Name	Family Name	Common Names	Trade Name	Habit	Part(s) Used
1.	*Withania somnifera* (L.) Dunal	SOLANACEAE	Asvagandha	Ashwagandha, Asgandha	Shrub	Root, Whole Plant
2.	*Curcuma longa* L.	ZINGIBERACEAE	Haldi	Arishna, , Kari manjal	Herb	Root (Rhizome, Tuber)
3.	*Calotropis gigantea* (L.) R.Br.	ASCLEPIADACEAE		Erukkin veru	Shrub	Flower, Bark (Root), Stem
4.	*Salvia aegyptiaca* L.	LAMIACEAE		Balangoo	Herb	Fruit (Seed)
5.	*Mentha piperita* L.	LAMIACEAE		Menthol, Peppermint	Herb	Leaf
6.	*Barleria prionitis* L.	ACANTHACEAE	Sahacara	Vajradanti	Shrub	Whole Plant
7.	*Lawsonia inermis* L.	LYTHRACEAE	Madaynati	Henna, Mehndi	Shrub	Leaf
8.	*Ocimum gratissimum* L.	LAMIACEAE		Ram tulasi	Shrub	Whole Plant
9.	*Ocimum basilicum* L.	LAMIACEAE		Sweet basil, Kali tulsi, Bantulsi	Herb	Leaf, Whole Plant, Root, Fruit (Seed)
10.	*Cymbopogon citratus* (DC.) Stapf	POACEAE	Kattrna	Serai, Rohisha	Herb	Root, Whole Plant
11.	*Abelmoschus moschatus* Medik. [*Hibiscus abelmoschus* L]	MALVACEAE	Kasturilatika	Muskdana, Latakasturi	Shrub	Fruit (Seed)
12.	*Acacia concinna* (Wild.) DC.	MIMOSACEAE		Chikakai (Shikakai)	Climber	Fruit
13.	*Sterculia urens* Roxb.	STERCULIACEAE		Karaya, Kateera	Tree	Gum
14.	*Terminalia bellirica* (Gaertn.) Roxb.	COMBRETACEAE	Bibhitaka	Behda, Bibhitaki	Tree	Fruit
15.	*Acorus calamus* L.	ARACEAE	Vaca	Vach, Vaj, Calamus roots, Vekhand	Herb	Root (Rhizome)
16.	*Asparagus racemosus* Willd.	LILIACEAE (Asparagaceae)	Satavari	Shatavari, Satawar	Climber	Root
17.	*Asparagus adscendens* Roxb.	LILIACEAE (Asparagaceae)		Musali safed, Satawar	Climber	Root
18.	*Vitex negundo* L.	VERBENACEAE	Nirgundi, Renuka	Neergundi	Shrub	Fruit, Leaf, Root, Fruit (Seed)
19.	*Centella asiatica* (L.) Urb.	APIACEAE	Mandukaparni	Brahmi, Brahmi booti	Herb	Leaf, Whole Plant
20.	*Mimosa pudica* L.	MIMOSACEAE	Lajjalu	Lajwanti, Lajjalu	Herb	Fruit (Seed), Whole Plant
21.	*Andrographis paniculata* (Burm.f.) Wall. *ex* Nees	ACANTHACEAE		Kalmegh	Herb	Whole Plant
22.	*Bacopa monnieri* (L.) Wettst.	SCROPHULARIACEAE	Brahmi	Brahmi, Jal Brahmi, Nirbrahmi	Herb	Whole Plant
23.	*Andrographis paniculata*	ACANTHACEAE		Kalmegh	Herb	Whole Plant

	(Burm.f.) Wall. *ex* Nees					
24.	*Elettaria cardamomum* Maton	ZINGIBERACEAE	Suksmaila	Elachi Chhoti, Ilaychi	Herb	Fruit (Fruit, Seed)
25.	*Spilanthes acmella*	ASTERACEAE		Akarkara, Sarahattika, Vana-mugali	Herb	Flower, Root
26.	*Mesua ferrea* L.	CLUSIACEAE	Nagakesar	Nagakesari, Nagkeshar	Tree	Flower (Anthers)
27.	*Catharanthus roseus* (L.)	APOCYNACEAE		Sadabahar, Vinca rosea	Herb	Leaf, Root
28.	*Rauvolfia serpentina* (L.)	APOCYNACEAE	Sarpagandha	Sarpagandha, Pagal Buti	Shrub	Root
29.	*Coleus barbatus*	LAMIACEAE	Gandira	Gandhira	Herb	Root
30.	*Aloe barbadensis* Mill.	LILIACEAE (Aloaceae)	Kanyasara	Ghikanvar, Kumari	Herb	Leaf
31.	*Aloe vera*	LILIACEAE (Aloaceae)	Kanyasara	Ghikanvar, Kumari	Herb	Leaf
32.	*Putranjiva roxburghii* Wall	EUPHORBIACEAE		Putrjivak	Tree	Bark (Stem), Fruit
33.	*Plumbago indica* L.	PLUMBAGINACEAE		Chitrak	Herb	Root

1. Cestrum :- रात की रानी :- उदवेष्हर, दाब हब्जी गुण।
2. Withornia Sommifern :- अश्वगन्धा:- गठिया, जिगर व पाचन में उपयोगी।
3. Curcuma longa :-हल्दी मिरगी, दमा, खांसी, दर्द में उपयोगी।
4. Calotropis Sigantea :- सफेद आक:- खांसी, बुखार, पीलीया, टी0 बी0 में उपयोगी।
5. Salvia Algyptica:- तुखम मलंगा :- आंखों की तमाम बीमारियां तथा काजल तैयार करने के लिए उपयोगी।
6. Cestrium Diuaranum:- दिन का राजा:- गंध नाशक एवं हृदय बल में उपयोगी।
7. Mentha Piperata:- पिपर मिन्ट :. मुंह की दुर्गन्ध रोकने एवं बच्चों के लिए अमृत धारा तैयार करने हेतू।
8. Adenocyma Nitidum:- लहसुन बेल :- वायुनाशक।
9. Latura Metel:- काला धतूरा :- टी0 बी0 एवं बुखार में उपयोगी।
10. काला बांसा :- सांस की बीमारी में लाभदायक।
11. सफेद बांसा:- डेंगू बुखार में उपयोगी।
12. Barieria Prionitis:- पीला बांसा :- खांसी में उपयोगी।
13. Lawsonia Inermis:- मेहन्दी:- पित्त, जिगर एवं रंग में उपयोगी।
14. Ocimum Nocturnum:- राम तुलसी:- उल्टी रोकने हेतू।
15. Ocimum Basilicum:- काली तुलसी :- कैंसर, नजला जुकाम में उपयोगी।

16. Cymbopogon Citratus:- लैमन ग्रास:- विटामिन ए व आंखों में उपयोगी।
17. नर्गिस:- तेल अधरंग में उपयोगी।
18. Abeimoschus Moschatus:- कस्तूरी भिंडी :- बीज कस्तूरी बनाने में उपयोगी।
19. Acacia-Concinna:-शिकाकार्ड :- कफ, श्वास, विड्ड, रुसी में उपयोगी।
20. Streculla Vrens:- गोन्द कतीरा:- प्रसव पीड़ा, दाँत व ठण्डाई हेतू उपयोगी।
21. कूचला:- शोध करने के बाद दवाईयों में प्रयोग।
22. Terminalia beierica:- बेहडारू. त्रिफला पेट के लिए उपयोगी।
23. Kigeila Pinnata :- बालम खीरा:- अलसर सिकालिस के उपयोग हेतू।
24. Acorus Calamus:- बच:- बुखार, मिरगी, स्त्री रोग में उपयोगी।
25. Asparagus Odsce Mems:- सतावरी:- ताकत के पेच में उपयोगी।
26. Aspara Ausar Gentuil:- सतावर:- पौष्टिक वीर्य वहक में उपयोगी।
27. Vitex Negumde:- निर्गुडी:- रसायन गले के टॉनसिल में उपयोगी।
28. Centello Asialica:- मंडूक पर्णी:- दिमाग की ताकत में उपयोगी।
29. Mimosa Pudica:- छुई मुई:- फिस्टूल बवासीर, वीर्य वर्धक हेतू उपयोगी।
30. Androgrdhis Paniculata:- पूर्ननवा:- जिगर, सूखा, कैंसर में उपयोगो।
31. Bacopa Monnieri:- ब्राहम्मी:- दिमागी ताकत के लिए उपयोगी।
32. Bryophy Lulm Pinnata:- पत्थर चूर:- पथरी विनाशक।
33. Androgrphis Panleulata:- काल मेद्य:- विड्डय ज्वर, लीवर में लाभदायक।
34. रसीली:- सजावट के लिए उपयोगी।
35. Nyctanthu Saboritritus:- हार सिंगार:- पत्ते बुखार में, बीज बवासीर के लिए उपयोगी।
36. Spindus Mukorossi:- रीठा:- कपड़े एवं केश साफ करने में उपयोगी।
37. करी पत्ता:- पेचिश, टॉनिक व कीड़ों की दवा में उपयोगी।
38. Elettaria Cardaman:- छोटी इलायची:- सांस व रुदे गले में उपयोगी।
39. Sansevieria Roxburghina;- नाग दमन:- सर्पदश में उपयोगी।
40. Stevia Rebaudiana:- स्टीविया:- मधुमेह में उपयोगी।
41. Spitanthus Acemella :- अकर करा:- मूत्रबधक व तुतलाने में लाभदायक।
42. Mesua Ferra:- नाग केसर:- खांसी एवं त्वचा रोग में उपयोगी।
43. Catherantnus Roseus:- सदाबहार:- मधुमेह व कैंसर मे उपयोगी।
44. Matricarid Chamomilla:- जर्मन चमेली:- जोड़ों के दर्द, बुखार, बाल रोग व पाचन शक्ति में उपयोगी।

45. Crinum Aisaticum;- सुखदर्शन:- कर्ण पीड़ा में पत्तियों का रस उपयोगी।
46. Vrginea Indica;- वन प्याज:- चर्म रोग में उपयोगी।
47. Rauvolfia Serpentina;- सर्प गंधा:- उच्च रक्तचाप, अनिद्रा, सर्प के काटने में उपयोगी।
48. Coleus Barbats:- पत्थर चट:- चटनी खाने से पित्ते की पत्थरी का नाश।
49. Aloe Barbadensis:- घी कवार:- कब्ज, अमाश्य ताकत हेतू उपयोगी।
50. Aloe Vera:- ग्वार पठा:- पेट, जिगर, तिल्ली एग्जिमा रोग में उपयोगी।
51. Putraujiva Roxterghll:- पुत्रन्जीवा:- बुखार एवं बच्चों की सेहत वृद्धि में उपयोगी।
52. Plumbago Indica :- चित्रक:- सफालीस व लोरोसी में उपयोगी।

CHAPTER – 6 LIBRARY

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Library is a collection of books or other written or printed materials, as well as the facility in which they are housed and the institution that is responsible for their maintenance. Modern libraries may contain a wide range of materials, including manuscripts and pamphlets, posters, photographs, motion pictures, and videotapes, sound recordings, and computer databases in various forms.

Library means a home of books. Where books are kept and books are used for increasing knowledge. That is called library. Books can be purchased from shops but we can't call it library. Library is a special term. At HTI library is a place where books are kept in a particular series. Library has ten almirahs where books are kept with serial numbers. In HTI library there are 3040 books, which are for the welfare of students, farmers and trainers.

Library is surrounded by a beautiful park, which adds on its beauty. There is calm environment in the library for study. There are chairs and tables for students and farmers to sit and read. Library is very clean. It is fitted with fans and tube lights. Library has collection of books of Tissue Culture, plant protection, fruits and vegetable, horticulture books and other related to agriculture books. The students enrolled in different courses viz. Supervisor Course and Gardener Certificate Course make use of it. Taking in view of these courses, all books are available for students' knowledge. Library has its own benefits for good students to increase their knowledge. Farmers and students can read books here when they are free and can gain knowledge by reading books here. There is a section of daily news papers and magazines in the library. Agriculture magazines, newspapers and employment newspaper are available here.

There is a librarian and helper who are very co-operative.

CHAPTER – 7 Expenditure

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There are so many schemes i.e. Agriculture Human Resources Development- Plan & Non Plan Scheme, Integrated Horticulture Development Plan Scheme, Setting of DH Plan Scheme, Good Agriculture Practices, Information Technology, Strengthening of horticulture , Various Horticulture Activities, MIDH & National Mission on Medicinal Plant at the Institute is running. The total expenditure for the year 2014-15 are as under:-

Sr. No.	**Name of Scheme**	**Year**	**Budget Allocation (Rs. in lacs)**	**Expenditure (Rs. in lacs)**	**Remarks**
1.	AHRD-Non Plan	2014-15	26.40	20.99	79.5 % utilization
2.	AHRD- Plan	2014-15	117.62	100.04	85.05% utilization
3.	Setting up of DH	2014-15	0.37	0.37	100% utilization
4.	NHM	2014-15	1.35	1.35	100% utilization
5.	GAP	2014-15	3.67	3.67	100% utilization
6.	VHA Non Plan	2014-15	75.59	69.17	91.5% utilization
7.	IT	2014-15	2.06	2.06	100% utilization
8.	strengthening of horticulture	2014-15	3.86	3.78	97.9 utilization
9.	MIDH	2014-15	129.95	87.75	67.5 utilization

Annexure – I

Overview of trainings conducted during previous years

Sr. No.	Year	Name of Scheme	No. of Trg.	Ttl. No. of Trg. Year wise	Participants /Trainees							G. Total Year wise
					DHO & HDO	HS	MS	Mali	Farmer (Male)	Farmers (Female)	Total Scheme Wise	
1	98-99	AHRD	2	2	35	--	--	--	--	0	35	35
2	99-2K	--do--	6	6	70	--	--	30	--	0	100	100
3	2K-01	--do--	3	3	--	23	--	20	--	0	43	43
4	01-02	--do--	6	8	16	11	10	25	41	0	103	143
	01-02	CSS	2		40	--	--	--	--	0	40	
5	02-03	--do--	2	54	40	--	--	--	--	0	40	1410
	02-03	MMM	52		142	--	--	--	1121	107	1370	
6	03-04	-do-	17	23	--	--	--	29	280	20	329	459
	03-04	CSS	4		80	--	--	--	--	0	80	
	03-04	Sponsored	2		20	--	--	--	30	0	50	
7	04-05	MMM	75	76	164	--	--	102	1240	80	1586	1611
	04-05	Sponsored	1		--	--	--	--	25	0	25	
8	05-06	AHRD	55	75	--	--	--	40	1060	0	1100	1500
	05-06	NHM	20		--	--	--	--	400	0	400	
9	06-07	AHRD	33	79	--	--	--	--	658	0	658	1568
	06-07	PELT	7		--	--	--	--	130	0	130	
	06-07	NHM	39		--	--	--	80	610	90	780	
10	07-08	AHRD(P)	18	74	--	--	--	--	240	120	360	1480
	07-08	AHRD(NP)	8		--	--	--	160	--	0	160	
	07-08	NHM	48		--	--	--	--	800	160	960	
11	08-09	NHM	43	76	--	--	--	--	550	300	850	1510
	08-09	AHRD(NP)	8		--	--	--	--	160	0	160	
	08-09	AHRD (P)	25		--	--	40	80	380	0	500	
12	09-10	NHM	71	91	47	--	40	80	1225	80	1472	2282
	09-10	AHRD(NP)	8		18	--	48	--	39	74	179	
	09-10	PLAN	7		--	-	--	--	139	0	139	
	09-10	Sponsored	5		130	--	--	--	362	0	492	
13	10-11	NHM	62	84	25	--	25	40	1098	200	1388	2560
	10-11	AHRD (NP)	4		56	2	32	--	21	0	111	

	10-11	PLAN	12		--	--	40	--	189	0	229	
	10-11	NMM	5		141	--	10	1	527	0	679	
	10-11	Sponsored	1		--	--	--	--	153	0	153	
14	11-12	AHRD (NP)	7	104	20	-	33	-	40	40	133	2080
		AHRD Plan	16		-	-	-	-	273	0	273	
		NHM	78		58	-	18	70	1408	60	1637	
		Sponsored	03		-	-	-	-	60	0	60	
15	12-13	AHRD (NP)	4	71	-	-	-	-	91	0	91	2865
	12-13	NHM	59		172	8	70	45	1862	340	2497	
	12-13	Sponsored	4		-	-	-	-	115	0	115	
	12-13	GAP	3		-	-	-	-	112	0	112	
		IHD Plan	1		-	-	-	-	-	50	50	
16	13-14	AHRD (NP)	12	77	145	-	60	-	136	72	413	3041
	13-14	AHRD Plan	5		32	-	46	40	-	67	185	
	13-14	NHM	55		135	5	-	40	1672	422	2274	
	13-14	Sponsored	5		-	-	-	-	169	0	169	
17	14-15	AHRD (NP)	5	71	128	50	36	-	28	-	242	2645
	14-15	AHRD Plan	12		31	-	-	34	120	154	339	
	14-15	MIDH	52		36	-	-	37	1659	271	2003	
	14-15	Sponsored	2		-	-	-	-	61	-	61	
G. Total				974	**1781**	**99**	**508**	**953**	**19284**	**2707**	**25332**	**25332**

Annexure - II

List of Resource Persons for delivering lectures/ demonstrations/ visits at HTI, Uchani, Karnal

S.No.	Contact Person	Designation	Address	Contacts	Field/ Remarks
1.	Dr. P.K. Mehta	Sr. Scientist	RRS, CCS HAU, Karnal	9416729959	Horticulture
2.	Dr. R.K. Sharma	Sr. Scientist	Dept. of Horticulture, CCS HAU, Hisar	9416240823 rks_hau@yahoo.co.in	Value addition
3.	Dr. Ved Pal Ahlawat	Sr. Scientist	Department of Horticulture, CCS HAU, Hisar	9896322446	Horticulture
4.	Dr. Bijender S. Beniwal	Sr. Scientist	Department of Horticulture, CCS HAU, Hisar	9416264528 beniwalbs@gmail.com	Floriculture (Marigold)
5.	Dr. V.K.Pandita	Principal Scientist	IARI, Regional Station, Karnal	9813563347 vndpandita@yahoo.com	Plant propagation & Vegetable seed production
6.	Dr. S.S. Sehrawat	Sr. Scientist	Department of Horticulture, CCS HAU, Hisar	9416397658	Floriculture & Tissue culture
7.	Dr. Devender Dahiya	Sr. Scientist	Department of Horticulture, CCS HAU, Hisar	9416489062	Floriculture (Chrysanthemum)
8.	Dr. Anil Godara	Sr. Scientist	Department of Horticulture, CCS HAU, Hisar	9416042333	Strawberry cultivation
9.	Dr. Devi Singh	Sr. Scientist	COA Kaul	9896012430	Horticulture
10.	Dr. S. K. Gupta,	Head Irrigation (Retd.)	CSSRI, Karnal.	9416081613	Irrigation
11.	Dr. Arvind Partap Singh	Consultant, GAP	HQ Panchkula	09990004851	GAP in Horticulture crops
12.	Dr. Jasbir Taya	Sr. Scientist	KVK, Damla, Y.Nagar	9466064088	Bee-Keeping
13.	Ms. Gurender Kaur	Consultant	HQ Panchkula		Processing
14.	Dr. Ashwani Shama	Consultant	HQ Panchkula	09464083962	Horticulture
15.	Dr. Saroj Jai Pal	Chief Scientist	RRS CCS HAU Uchani, Karnal	9416296102	Pheromone traps in

		cum Head			hort. crops
16.	Dr. P.C. Sharma	Consultant	HQ Panchkula	09417073319	Fruit model nursery
17.	Dr. Satpal Aggarwal	Rtd. H.A.S.-II, Horticulture	Faridabad	9996126665	IPM
18.	Dr. Samunder Singh Nehra	Rtd. H.A.S.-II, Horticulture	Jind	9996763654	Mushroom
19.	Dr. Bhim Singh Dahiya	Rtd. Director Research, CCS HAU Hisar	Hisar	9416397520	Seed Production Technology
20.	Dr. Vijay Arora	Sr. Scientist Soils	RRS CCS HAU Uchani, Karnal	9466048124	INM
21.	Dr. O.P.Sagwal	Sr. Scientist Soils	RRS CCS HAU Uchani, Karnal	9254430207	Soil Testing
22.	Dr. Dharm Bir Yadav	Sr. Scientist	RRS CCS HAU Uchani, Karnal	9416220028	Weed management
22.	Dr. Samar Singh	Sr. Scientist	RRS CCS HAU Uchani, Karnal	9991130914	
23.	Dr. Neelam Narang	Sr. Scientist	KVK CCS HAU Uchani, Karnal	9416651198	Food processing
24.	Dr. Dilbag Ahlawat	Scientist	KVK CCS HAU Uchani, Karnal	9416277542	Entomology
25.	Dr. Man Singh	Sr. Scientist	KVK CCS HAU Uchani, Karnal	9416468056	Entomology
26.	Dr. P.C.Gupta	Ex. Director, Horticulture	Sector-13, Karnal	9416820993	Horticulture
27.	Dr. C.J. Juneja	Scientist	NDRI, Karnal	09896890950	Bee Keeping
28.	Dr. Suman	Lecturer	Govt. College, Sec. 14, Karnal	9416468400	Home Science
29.	Dr. S. K. Arora	Consultant	CEV Ghraunda	9991194258	Hi tech Vegetable cultivation
30.	Dr. Jage Singh	Sr. Scientist	RRS CCS HAU Uchani, Karnal	9896667736	Vegetable crops
31.	Dr. Balraj Singh	Sr. Scientist	IARI, New Delhi	09811271303	Hi tech Vegetable seedling
32.	Dr. Sindhu	Sr. Scientist	IARI, New Delhi	09868073757	Hi tech floriculture
33.	Dr. Ajit Chauhan	Scientist	IARI New Delhi	09811574101	Hi tech Vegetable seedling

34.	Dr. Hansraj Sardana	Principal Scientist	ICAR, New Delhi	09968384033	Entomologist
35.	Dr. Warsh	Scientist	Sheel Biotech Delhi	09873342910	Gerbera
36.	Dr. Satender	Head	NHRDF Salaru	9896067608	Onion &Garlic
37.	Dr. Ahuja		NHRDF Salaru	9416392471	Onion &Garlic
38.	Er. S.N. Singh	Jain Irrigation	Yamuna Nagar	9416400201	Micro irrigation
39.	Dr. Chaudhary	Sr. Scientist	KVK Kaul Kaithal	9416355003	
40.	Dr. Ajay Yadav	Sr. Scientist	HAIC, Murthal	9813486046	
41.	Dr. Sunil Verma	Sr. Scientist	NRCM, Solan, HP	09418006939	Mushrooms
42.	Dr. S.N.Singh	Director	Regional Centre, Manage, EEI, Nilokheri	01745-246157 (O), 01745-246227 (F)	Communicating Extension Process
43.	Dr. Naseeb Singh	Deputy Director	Regional Centre, Manage, EEI, Nilokheri	01745-246157 (O), 01745-246227 (F)	Motivation
44.	Dr. Satyakaam Malik	Deputy Director	Regional Centre, Manage, EEI, Nilokheri	01745-246157 (O), 01745-246227 (F)	Time Management
45.	Dr. S.R. Srivastava	Deputy Director	Regional Centre, Manage, EEI, Nilokheri	01745-246157 (O), 01745-246227 (F)	Skill Teaching
46.	Dr. J.S. Sodhi	Botanist	Ex-Principal, G.N.G. College, Yamuna Nagar	9896246122 sodhihk@gmail.com	Med. Plants
47.	Dr. Anil Kumar Singh	Sr. Scientist & Head	Herbal Medicinal Products, Central Institute of Medicinal and Aromatic Plants (CIMAP), P.O. CIMAP, Lucknow	09453016214	Med. Plants
48.	Dr. Virender Singh	Manager (Medicinal Plant Division)	Ayurvet Limited, 6th Floor, Sagar Plaza, Distt. Centre, Vikas Marg, Delhi-92	08860324024, virendersingh007@gmail.com	Med. Plants
49.	Dr. Manjusha Khurana		Sanjivani Health Care, Plot No. 163 C,Sec.3, HSIDC, Karnal	9728101680	Med. Plants

50.	Dr. J.S. Hooda	Sr. Scientist	Med. Plants Section, Deptt. Of Genetics & Plant Breeding, CCS HAU Hisar	9416590652	Med. Plants
51.	Dr. O.P. Yadav	Sr. Scientist	Med. Plants Section, Deptt. Of Genetics & Plant Breeding, CCS HAU Hisar	9416343290	Med. Plants
52.	Dr. I.S. Yadav	Sr. Scientist & Head	Med. Plants Section, Deptt. Of Genetics & Plant Breeding, CCS HAU Hisar	9416439265	Med. Plants
53.	Dr. Rana		Gurgaon	09311503242	Buy back med. Plants
54.	Director	---	CIMAP, Lucknow	0522-2359623 (O); 0522-2342666 (F)	
55.	Dr. A.K. Singh	Scientist	CIMAP, Lucknow	09415016777	
56.	Sh. Yash Batra	c/o *Vaidh* Devender Batra	Karnal	9416038585	Sh.A.K. Yadav, IAS
57.	Dr. Narain Das Prajapati	Director	Rajasthan Agro Forestry Corporation, Sonamukhi Nagar, Sangaria Phanta, Salawas Road, Jodhpur- 342005 (Rajasthan)	0291-2748488 /2747931 email: racf@123india.com	
58.	Mr. Rajesh Jalan	Managing Director	Jallan Trinitea Processing Pvt. Ltd., Plot No. 276, Sec. 6, IMT, Manesar	09871889000 rajeshagarwalla58@gmail.com	Stevia plant
59.	Dharambir Damla	Farmer	VPO. Damla, Yamuna Nagar	9896054925	Aloe vera
60.	Sh. Kushal Pal Sirohi	Progressive Farmer	VPO Barola, The. Kaithal	9812022221	Medicinal plants
61.	Sardar Harpal Singh Bajwa	Bajwa Mushroom Farma	VPO Bohar sheda Kurukshetra	9416037310	Field Visit for mushrooms
62.	Dr. M.S Joon	Sr. Scientist	KVK, Kurukshetra	9416646179	Fruits
63	Sh. Jagdish Rai	Under Secretary	Chhotu Ram Nagar, Near Old	9812020579	Establishment

		Rtd.	Housing Board, Rohtak c/o HIPA, Rohtak		Matters
64.	Sh. Harish Khurana	Sr.Accounts Officer Rtd.	849-C, Sec. 9, Karnal c/o HIPA, Rohtak	0184-2230849	Accounts Matters
65.	Dr. Satyawan Malik	DDH (Retd.)	Vill- Kalkhan, Panipat	9812522115	Organic Farming
66.	Dr. M. D. Sharma	JDH (Retd.)	1996/21, Faridabad	01292221986	Fruit and vegetable
67.	Dr. Satpal Yadav	Scientist	KVK Damla	-	Entomology
68.	Dr. Surender Kumar	Sr. Scientist	NICPM, Pusa Complex, New Delhi.	09868882619	Organic farming
69.	Dr. Dusyant Mishra	Sr. Scientist	CISH, Lucknow (U.P)	09453746828	Fruit
70.	Sh. Neeraj Kapil	Engineer	Jain Irrigation, Karnal.	-	MI
71.	Dr. Lal Ji Sharma	Agronomist	Jain Irrigation	9416400206	MI
72.	Dr. P. K. Shrivastva	Dy. Director NHRDF (Retd.),	H. No. 1077, Sec-6, Karnal.	9416109106	IPM
73.	Sh. Shiv Kumar	Executive Officer	IPL, New Delhi	09717011107	IPM/Organic Farming
74.	Sh. Bharat Bushan Tyagi	Farmer	VPO-Beeta, District- Buland Shahar (U.P)	09412568747	Organic Farming
75.	Dr. Mahesh Paliwal	Assistant Director	Regional Organic Farm Centre, Panchkula	08607566407	Organic Farming
76.	Dr. Vipin Saini	Consultant	Faridabad	09810034020	Pesticides
77.	Dr. K. S. Chauhan	TA	Sericulture, Panchkula	09728980099	Sericulture
78.	Ms. Jaya Ben	Sr. Co-ordinator	Sewa Fedration Ltd. Gujrat.	09998810340	FPO/FIG's
79.	Dr. M. G. Bhardwaj	Sr. Scientist	Sericulture, Dehradun (U.K)	09458123319	Sericulture