REPORT OF

International Training

on

Production, Processing & Marketing of Organic Vegetables

For the Participants of African and Asian Countries Under Feed The Future India Triangular Training (FTF ITT)

National Institute of Agricultural Extension Management (MANAGE), Hyderabad

Date: 06-20 February 2018











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An ISO 9001:2015 Certified Institute

ACKNOWLEDGEMENT

ICAR-Indian Institute of Vegetable Research (ICAR-IIVR), Varanasi (U.P.), India, a pioneer research organization functioning under the aegis of Indian Council of Agricultural Research, DARE, Ministry of Agriculture and Farmers Welfare, Government of India has successfully organized 15 days International Training Program under FTF ITT on "Production, Processing and Marketing of Organic Vegetables" during 06-20 February 2018 for 21 Executives from 11 Afro-Asian countries. There were 11 male and 10 female participants out of whom 14 participants were from Agriculture Department, 05 from Agriculture Marketing & Horticulture Department and 02 from Private Sector. We are thankful to MANAGE, Hyderabad the implementing body of FTF ITT in India for giving opportunity to ICAR-IIVR for organizing this prestigious international training program and initiating the responsibility of mobilizing Executives from different Afro-Asian countries.

We are grateful to Dr. Panjab Singh, President, NAAS and Chancellor, RLB CAU, Jhansi and Dr. Prithvish Nag, Vice Chancellor, MG Kashi Vidyapeeth, Varanasi for accepting our invitation for inaugural and valedictory session respectively which was a motivating factor for both participants and faculty members. Heartily thanks to all the resource person and other faculty members for their rigorous cooperation, coordination and delivering informative theoretical and practical orientations to participants. Nevertheless heartfelt thanks to all the participants who visited from different Asian and African countries to participate in this training program with the unforgettable moment they spent here, without that this training program could not have been materialized. At this juncture, our sincere thanks to ICAR, New Delhi and Director, ICAR-IIVR for providing all possible supports and guidance to make this training program a grand success.

At the end, financial and other technical support for organizing this training program under FTF ITT by USAID, Government of India and MANAGE, Hyderabad is duly acknowledged.

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1. Host Institute

ICAR-Indian Institute of Vegetable Research (ICAR-IIVR) is a pioneer Institute devoted to research and development of vegetables and is situated in the greater periphery of the Holy city Varanasi in Uttar Pradesh, India. Since its inception, the institute has established an excellent infra-structure and made significant contribution in the field of vegetables improvement, production, protection and extension with a mission to contribute significantly to the nutritional security of India through the development of production technologies of vegetable crops, which are resources sustainable, economically viable and environmentally safe. The research and development activities of the institute are being carried out under its 06 mega-programmes, namely Gene Management; Seed Enhancement; Productivity Enhancement through Better Resource Management; Plant Health Management; Post Harvest Management and Value Addition and Prioritization of R&D Needs & Impact Analysis of Technologies Developed by IIVR. Presently, focus vegetables for R&D in the institute is 20 which includes all major vegetables in solaneceous, leguminous, cucurbitaceous, cruciferous, Malveceous and root crops. However during last two years, 22 underutilized and aquatic vegetables are also added in the research programme like chinapods, basela, water chestnut, kakrol, kale, winged bean, faba bean, lotus, etc. So far, Institute has developed 64 improved varieties/ hybrids in 18 different vegetable crops which are highly adaptable and suitable for cultivation across different agro-climatic zones of India. Non-exclusive license of these developed varieties/hybrids are made with 38 private seed company for further multiplication and marketing in the country. So far the institute has organized more than 300 training programme on different aspects of vegetable production, protection and marketing for the officials, students and farmers from the country and abroad.

Infrastructure Available at the Institute:

Laboratory Complex: The Institute has well equipped laboratory complex building. This complex houses 24 state-of-the-art laboratories for conducting research under three Divisions viz., Vegetable Improvement (Genetics, Cytogenetics, Biotechnology, Vegetable Breeding, Genetic Resources), Vegetable Production (Agronomy, Soil Science, Water Management, Crop Physiology & Biochemistry, Post-harvest technology, Extension, Economics and Statistics) and Vegetable Protection (Entomology and Pathology).

Library: IIVR library is currently subscribing 58 journals of national and international repute. CAB abstracts are available from 1970 onwards. Library has more than 2858 books, rich collection of annual reports and newsletters of national and international research institutes.

Museum and Auditorium: A museum is located at the entrance of the main building so that it is convenient for visitors to have glimpses of vegetable research being conducted at the institute and its major achievements. There is an auditorium attached with main building with a seating capacity of 350.

Gene Bank: In the laboratory complex, a gene bank has been established for medium term conservation of vegetable genetic resources. In addition, the Institute also has a low energy gene bank established in early 2016 with the help from Bioversity International.

Research Farm: To execute the research projects of various disciplines, a research farm has been developed at IIVR, Varanasi on 150 acres of land. The farm has three submersible tube wells, underground irrigation systems, sprinkler irrigation, drip irrigation and water harvesting tank facilities. To provide proper research facilities for conducting the field experiments at the farm, adequate drainage, approach road and electricity facilities are also available.

Greenhouses and polyhouses: The institute has well equipped green-houses (4), poly-houses (8) and net-houses (11) to provide support to protected cultivation research, screening of resistant material, making of crosses and to multiply precious materials. Recently a temperature gradient tunnel has been erected to undertake research on temperature tolerance in vegetables.

Seed Processing Unit: To ensure the supply of quality seeds to the farmers as well as other agencies, a well-equipped seed processing unit has been established at the institute.

Agricultural Knowledge Management Unit (AKMU): The institute's AKMU cell is working with 10 work stations and one server. All the computers of different sections are connected to each other with Local Area Network. The institute is connected to internet through high speed broad band provided by ERNET under National Knowledge Network.

Centre of Excellence for Training (CET): Indian Institute of Vegetable Research being a pioneer institute on research and development of vegetables in the country has been recognized as centre of excellence for training on vegetable production technology by Department of Agriculture and Cooperation, Directorate of Extension, Ministry of Agriculture, New Delhi. A well-furnished hostel and training hall has been constructed at the Institute for the stay and class-room teaching of participants during training programme.

Agricultural Technology Information Centre (ATIC): Agriculture Technology Information Centre (ATIC) was established in 2002 and a separate building has been constructed at the entrance of the Institute to provide a single window delivery system for the products and services viz., quality vegetable seeds, production and protection technologies and other vegetable products to the vegetable growers and other stakeholders as a process of innovativeness in technology dissemination at the institute level.

AICRP on Vegetables: The vegetable research in our country is well knitted with network of 29 regular and 27 voluntary centres. Four hundred forty two varieties of different vegetable crops have been recommended for cultivation in various agro-climatic zones of the country. Besides several region specific recommendations on vegetable production, protection, seed production and post-harvest management have been brought out through this network.

Integrated Beekeeping Development Centre (IBDC)/Centre of Excellence (CoE) on Beekeeping: Adequate infrastructure is developed in the institute under National Bee Board for

commercialization of beekeeping activities like colony production, maintenance of nucleus culture, disease diagnostics in addition to quality control of honey and other hive products production leading to employment and revenue generation.

Guest House and Training Hostel: The Institute has a well-furnished Guest House located near Naria on the Lanka-Sunderpur road and also a Guest House cum Training Hostel within the Institute Campus.

Regional Station, Sargatia, Kushinagar: Considering the importance of quality seed in overall improvement of the productivity of vegetable crops, a separate regional research station was established at Sargatia in Kushinagar district of Eastern Uttar Pradesh in area of 180 acres. The main objective of this center is to enhance breeders and truthful label seed production of newly released vegetable varieties.

Krishi Vigyan Kendras (KVKs): Three Krishi Vigyan Kendras (KVKs) have been established at Kushinagar, Sant Ravidas Nagar and Deoria districts of Uttar Pradesh under the administrative control of Indian Institute of Vegetable Research, Varanasi for assessment, refinement and promotion of agricultural technologies for wider and quicker adoption amongst the growers. The establishment of KVKs have not only help in improving the farming technologies but also ensure better nutritional and livelihood security in the respective districts.

2. Feed The Future – India Triangular Training

Feed The Future India Triangular Training (FTF ITT) is a Joint Programme of US government represented by USAID and India government (Ministry of Agriculture & Farmers Welfare) represented by MANAGE, Hyderabad launched on 25th July, 2016 at New Delhi. FTF ITT aims to address Human and Institutional Capacity Gaps in Food & Nutritional Security in selected African and Asian Countries by providing training to Extension Practitioners. In view of this, ICAR-Indian Institute of Vegetable Research, Varanasi (U.P.) being a pioneer research organization functioning under the aegis of Indian Council of Agricultural Research, DARE, Ministry of Agriculture and Farmers Welfare, Government of India had organized this International Training Programme on "Production, Processing and Marketing of Organic Vegetables" during 06-20 February 2018 in which 21 Executives from 11 countries viz., Afghanistan, Botswana, Republic of Congo, Ghana, Kenya, Liberia, Malawi, Mongolia, Myanmar, Sudan and Uganda had participated.

3. Background about Training

With the increasing awareness about the safety and quality of foods, long term sustainability of the system and accumulating evidences of being equally productive, the organic farming has emerged as an alternative system of farming which not only addresses the quality and sustainability concerns, but also ensures a profitable livelihood option. The success of organic vegetables farming depends to a great extent on the efficiency of agronomic management adopted to stimulate and augment the underlying productivity of the soil resources. All the management practices followed in organic farming are governed by the principles of ecology and are within the ecological means. Organic vegetable cultivation offers one of the most sustainable

farming systems with recurring benefits not only to long-term soil health but provides a lasting stability in production by importing better resistance against various biotic and abiotic stresses. Although the cost of certification and the time and labor involved in managing the organic system are high, returns potential are also high in the area where markets are well developed for organic products. Generally, organic vegetables fetch a premium price of 10%-50% over conventional products. Market of organic products is growing at faster rate (20%) as compared to conventional ones (5%). This growth rate is highest in Japan, USA, Australia and EU. Export preference of organic vegetables offers a great scope to even small countries in Asia and African continents, which has inculcated the skill of growing organically since time immemorial. Considering the above facts, the present international training program was planned to impart an insight to technologies available for sustainable production, processing & marketing of organic vegetables in Asia and African countries.

4. Objectives of the Training

- Introduction of advanced technologies developed in the production of organic vegetables.
- > Skill development of participants in post-harvest management and processing of organic vegetables for nutritional security.
- ➤ Equip the participants in identification of vegetables pests and their integrated management.
- Certification of organic produce and their marketing for entrepreneurship development.

5. Key Focus areas of the Training Module

Global scenario of organic vegetable production: Current status and future strategies.
Selection of improved varieties/planting materials
Nursery management in vegetable crops
Organic production technology for - Solanaceous crop, Cole crop, Root crop, Bulb crop,
Peas and Beans, Okra, Cucurbits, Leafy vegetables and Rare vegetables
Weed Management, Water Management, and Integrated Plant Nutrient Management for
organic vegetables production.
Vegetable based cropping system for organic farming
Pre & Post harvest management of organic vegetables produce.
Processing and value addition of organic vegetables produce.
Disease and insect-pest management in organically grown vegetable crops
Seed Production and Management of organic vegetable crops
Nutritional and medicinal value of organic vegetables
Certification of organic produce
Marketing, export of organic vegetables

6. List of Participants

Sl. No. Name of the Executive and Address

Photo

Afghanistan

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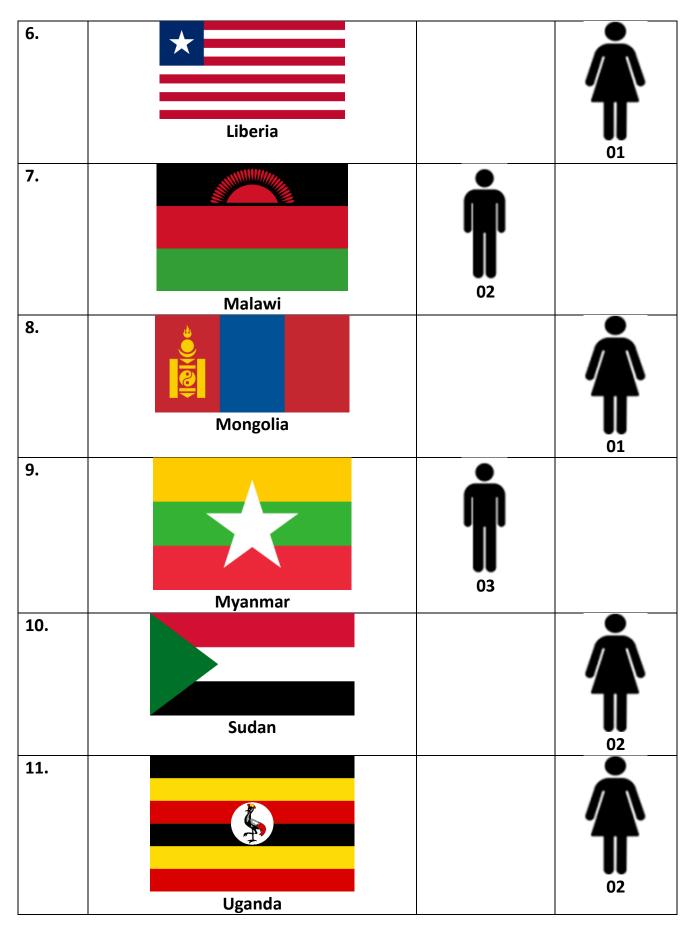
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7. Country wise and Gender wise Participation

SI No	Country	Number of participants	
1.	Afghanistan	1 04	
2.			
	Botswana		01
3.	Democratic Republic of Congo	01	
4.	Ghana	01	
5.	Kenya		



8. Inauguration of the Training Program

ICAR-Indian Institute of Vegetable Research, Varanasi (U.P.) organized this International Training Programme (FTF ITT) on "Production, Processing and Marketing of Organic Vegetables" from 06-20 February 2018 at its campus in which 21 Executives from 11 countries viz., Afghanistan, Botswana, Republic of Congo, Ghana, Kenya, Liberia, Malawi, Mongolia, Myanmar, Sudan and Uganda had participated.

Prof. Panjab Singh, presently Chancellor of RLB Central Agricultural University, Jhansi and President, NAAS, New Delhi and former Secretary, Department of Agriculture Research and Education (DARE), GOI & Director General, Indian Council of Agricultural Research (ICAR); former Vice Chancellor, Banaras Hindu University, Varanasi; former Vice-Chancellor, Jawaharlal Nehru Agricultural University, Jabalpur; former Director/Vice-Chancellor, Indian Agricultural Research Institute (IARI), New Delhi, former Director, Indian Grassland and Fodder Research Institute (IGFRI), Jhansi and Protection Officer in the Food and Agricultural Organization (FAO) of the United Nations in Bangkok (Thailand) was the Chief Guest during the inaugural function of this international event on 7th February 2018. While addressing the delegates, he shared his experience of working in different African and Asian countries and emphasized the participants to learn and implement the technologies of organic vegetables farming and processing in their respective countries as this is the need of hour in global perspective for income and employment generation along with nutritional security. On this occasion, Guest of Honour Dr. B.K. Paty, Director (OSPM), MANAGE, Hyderabad, emphasized for agricultural marketing extension and supply chain management. Dr. Bijendra Singh, Director, ICAR-Indian Institute of Vegetable Research, Varanasi welcomes the delegates and guests on this occasion. While focusing on the achievements of the institute, he also emphasized on the opportunities of organic vegetable production in Afro-Asian countries. On this occasion, a training manual prepared for the purpose was released and given to the participants.

9. Moments of Inaugural Session



Training Coordinator Dr. Neeraj Singh welcoming the Guests and Dignitaries



Lighting the lamp by Chief Guest, Guest of Honor and Director, ICAR-IIVR



Welcoming the Participants by Director, ICAR-IIVR



Director, ICAR-IIVR felicitating Chief Guest



Director, ICAR-IIVR felicitating Guest of Honor



Release of Training Manual by Guests



Chief Guest addressing the Participants



Director, ICAR-IIVR addressing the Participants



Group Photograph of Participants with Guests during Inaugural Session

10. Day Wise Program Schedule

Date & Time.	Speaker /Topic					
Day 01: 06.02.2018 (Tuesday)						
10.00-11.00 AM	0.00-11.00 AM Registration					
11.00-12.30 PM	Visit to Institute Campus and Research Farm					
12.30-01.30 PM	Medical and Legal Formalities, Group Information					
01.30-02.30 PM	Lunch break					
02.30-03.30 PM	Ice Breaking and Pre Training Test	Dr. Neeraj Singh, IIVR				
03.30-05.00 PM	Organic farming in Vegetable crops: An overview	Dr. B. Singh, Director, ICAR-IIVR, Varanasi				
Day-02: 07.02.2018	(Wednesday)					
09.30-11.00 AM	Inaugural Session					
11.00-11.30 PM	Hi-Tea and Group Photograph					
11.30-01.00 PM.	Agriculture Marketing in Global Perspective	Dr. B. P. Paty, Director, OSPM, MANAGE, Hyderabad				
01.00-02.00 PM	Lunch break					
02.00-03.30 PM	Nutrient management options in organic farming	Prof. Abhijit Sen, BHU				
03.30-05.00 PM	Principles and practices of organic farming for sustainable crop production	Dr. S. K. Singh, IIVR				
Day-03: 08.02.2018	(Thursday)					
09.30-11.00 AM	Fertigation in Organic Vegetable Production Systems	Dr. D. K. Singh, IIVR				
11.00-11.30 PM	Tea break					
11.30-01.00 PM	Soil health and quality under organic system	Dr. Nirmal De, BHU				
01.00-02.00 PM	Lunch break					
02.00-03.30 PM	Weed Management in vegetable Crops under organic production system	Dr. Raghwendra Singh, IIVR- RS, Kushinagar				
03.30-05.00 PM	Organic manures- availability, uses and prospects	Dr. R. B. Yadav, IIVR				
Day-04: 09.02.2018	Day-04: 09.02.2018 (Friday)					
09.30-11.00 AM	Vegetable quality under Organic production system	Dr. Jagdish Singh, IIVR				
11.00-11.30 PM	Tea break					
11.30-01.00 PM	Minimizing Pesticide residue in soil, plant and harvested produce under organic farming	Prof. P. Raha, BHU				

Lunch break					
Biological nitrogen fixation and Use of microbes to improve nutrient enrichment of soil and nutrient uptake by plants	Dr. M. Senthilkumar, PS, IIPR, Kanpur				
Utilization of vegetable legumes in cropping sequence under organic system	Dr. Nagendra Rai, IIVR				
(Saturday)					
Developing organic seed village in PPP mode	Dr. S. Roy, IIVR, Varanasi				
Tea Break					
Role of biofertilizers in organic production systems	Dr. Alok Srivastava, PS, NBAIM, Mau				
Lunch Break					
Emerging and re-emerging pests and their management under organic production system	Dr. A. B. Rai, IIVR				
Strategy for Soil-borne Disease Management in vegetable crops under organic production system	Dr. K. K. Pandey, IIVR				
(Sunday)					
Visit to BHU, Varanasi and Home Assignment					
Monday)					
Viruses infesting vegetable crops and their management under organic system	Dr. Nagendran, IIVR				
Tea Break					
Eco-friendly approaches for Nematode management in vegetable crops	Dr. Manjunath Gowda, IIVR				
Lunch Break					
Green manures and Crop residues as a source of plant nutrients in organic production system	Prof. Yashwant Singh, IAS, BHU				
Bio-control strategies for pest management in vegetables under organic system	Dr. A.B. Rai, IIVR, Varanasi				
Day 08: 13.02.2018 (Tuesday)					
Processing of organic produce: Strategies and Challenges	Dr. Sudhir Singh, IIVR				
Tea Break					
Micronutrients management in crop production with vis a vis vegetable under organic production system	Prof. S.K. Singh, IAS, BHU				
	Biological nitrogen fixation and Use of microbes to improve nutrient enrichment of soil and nutrient uptake by plants Utilization of vegetable legumes in cropping sequence under organic system (Saturday) Developing organic seed village in PPP mode Tea Break Role of biofertilizers in organic production systems Lunch Break Emerging and re-emerging pests and their management under organic production system Strategy for Soil-borne Disease Management in vegetable crops under organic production system (Sunday) Visit to BHU, Varanasi and Home Assignment Monday) Viruses infesting vegetable crops and their management under organic system Tea Break Eco-friendly approaches for Nematode management in vegetable crops Lunch Break Green manures and Crop residues as a source of plant nutrients in organic production system Bio-control strategies for pest management in vegetables under organic system (Tuesday) Processing of organic produce: Strategies and Challenges Tea Break Micronutrients management in crop production with vis a vis vegetable under organic production with vis a vis vegetable under organic production				

01.00-02.00 PM	Lunch Break	
02.00-03.30 PM	Direct Marketing of Organic Food with Value- Added Products	Prof. Rakesh Singh, IAS, BHU
03.30-05.00 PM	Certification and labeling of organic products and participatory guarantee system (PGS) of certification	Mr. Tarun Bajaj, APEDA, New Delhi
Day 09 14.02.2018 ((Wednesday)	
09.30-11.00 AM	Seed treatments for improvement of germination and plant stand under organic system	Dr. P. M. Singh, IIVR
11.00-11.30 PM	Tea break	
11.30-01.00 PM	National Organic Program, Seed Rule and Sourcing Organic Seed	Dr. D. K. Agrawal, Director, ICAR-IISR, Mau
01.00-02.00 PM	Lunch break	
02.00-03.30 PM	Large scale multiplication of Important bio agents for organic farming of vegetable crops	Dr. A. N. Tripathi, IIVR, Varanasi
03.30-05.00 PM	Approved Chemicals for Use in Organic Systems	Dr. Y. Bijen, IIVR
Day 10 15.02.2018	(Thursday)	
09.30-11.00 AM	Options of organic vegetable production under dryland / rainfed areas	Dr. R. P. Singh, BHU
11.00-11.30 PM	Tea break	
11.30-01.00 PM	Organic farming as a component of integrated farming system	Dr. J. S. Bohra, BHU
01.00-02.00 PM	Lunch break	
02.00-03.30 PM	Seed Production and storage in organic vegetable production	Dr. P.M. Singh, IIVR
03.30-05.00 PM	Actinomycetes : An unexplored promising microorganisms for Agriculture	Anurag chaurasia
Day 11 16.02.2018	(Friday)	
09.30-11.00 AM	Grafting Tomatoes for Organic Open Field Production	Dr. Anant Bahadur, IIVR
11.00-11.30 PM	Tea Break	
11.30-01.00 PM	Organic farming vis-à-vis Climate change	Dr. P. S. Basu, IIPR, Kanpur
01.00-02.00 PM	Lunch	
02.00-03.30 PM	Precision farming in organic crop production	Dr. R. N. Prasad, IIVR, Varanasi
03.30-05.00 PM	Adoption Potential and Perceptions of Reduced	Prof. U. P. Singh, IAS, BHU
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	Tillage among Organic Farmers						
Day 12: 17.02.2018 (Saturday)							
10.00-05.00 PM Field Visit to Organic farm, Surbhi Soodh Sansthan, Dagmagpur, Mirzapur							
Day 13: 18.02.2018	Day 13: 18.02.2018 (Sunday)						
10.00-05.00 PM	Local Sight Visit, Home Assignment and Reading						
Day 14: 19.02.2018	(Monday)						
09.30-11.00 AM	Extension approaches for popularization of Organic production system	Dr. Neeraj Singh, IIVR, Varanasi					
11.00-11.30 AM	Tea Break						
11.30-01.00 PM	Heavy metal pollution and phytoremediation under organic production system	Prof. S.K. Singh, IAS, BHU					
01.00-02.00 PM.	Lunch Break						
02.00-03.30 PM	Export-Import of organic produce in Global Perspectives	Dr. S.M. Vanitha, IIVR					
03.30-05.00 PM	Role of Underutilized vegetables in organic production system	Dr. A. K. Pandey, Dean, CH&AF, Pasighat, Arunachal Pradesh					
Day 15: 20.02.2018(Tuesday)						
09.30-11.00 AM	Back at Work Plan presentation	Dr. Jagdish Singh; Dr. S. K. Singh, Dr. Neeraj Singh					
11.00-11.30 AM	Tea break						
11.30-01.00 PM	Back at Work Plan presentation contd.	Dr. Jagdish Singh; Dr. S. K. Singh, Dr. Neeraj Singh					
01.00-02.00 PM	Lunch break						
02.00-03.00 PM	Post Training Evaluation & Feedback	Dr. Neeraj Singh; Dr. S. Roy					
03.00-05.00 PM	Valedictory Session						

Note:

- All the participants will take part in Yoga and Meditation practice every day from 6.00 to 7.00 AM in the Guest House.
- Additional City visit for marketing and local sightseeing can be arranged based on request from the participants after working hours.

11. Moments during Various Classes

ICAR-Indian Institute of Vegetable Research, Varanasi (U.P.) had organized International Training Programme under FTF ITT on "Production, Processing and Marketing of Organic Vegetables" during 06-20 February 2018 for 21 Executives from different Afro=Asian countries. During this international training program a total of 40 classroom lectures were designed which were delivered by highly qualified experts from the institute as well as other organizations like BHU, Varanasi; APEDA, New Delhi; CH&AF, Passighat (Arunachal Pradesh); IIPR, Kanpur and IISR, Mau. These lectures and interactive discussions provided informative insights to the participants.















12. Flashes during Study Visits

Apart from different practical sessions and visit to ICAR-IIVR Research lab and field, study visits for the participants were also organized for BHU, Varanasi and Surbhi Soodh Sansthan, Mirzapur for gaining hands-on learning experiences on organic farming.



Visit to Organic Farm by Participants



Scientist explaining organic manure production techniques to participants





Visit to Vegetables Crop Residue Management Unit at ICAR-IIVR







Visit to organically managed DSR field at BHU



Visit to Organically developed IFS Module at BHU



Visit to BHU, Varanasi (U.P.), India





Visit to Organic Farm at Surbhi Soodh Sansthan, Mirzapur (U.P.), India







Scientist explaining IFS Module in Lab at BHU

13. Some of the Joyous Moments during the Training Program









Participants with Traditional Farm Women at Surbhi Soodh Sansthan, Mirzapur





Enjoying Meals at ICAR-IIVR Guest House









14. Blissful Moments during Cultural Evening at Madhuvan Palace, Varanasi



15. Performance of Participants: Pre & Post Test Evaluation Scores

This international training program on "Production, Processing and Marketing of Organic Vegetables" showed a great impact on the knowledge level of the participants which can be viewed by the average increase of 92.4% in pre and post score achieved by the 21 participants. This increase in score varied from 21.4% fetched by Ms. Igecha Anne Njeri of Kenya to 280.0% by Ms. Manal Ismael Mohammed Ahmed of Sudan. The detailed scores are as follows:

SI No.	Name of the Executive	Pre-test score (Out of 25)	Post-test score (Out of 25)	Percent Increase
1.	Mr. Zaryal Khalilullah, Afghanistan	10	17	70.0
2.	Ms. Azita Salimshahi, Afghanistan	11	19	72.7
3.	Mr. Qais Totakhil, Afghanistan	13	22	69.2
4.	Mr. Mirwais Khpalwaak, Afghanistan	11	21	90.9
5.	Mr. Muhammad Hanif, Afghanistan	12	21	75.0
6.	Mrs. Munisola Rebecca Kahundu, Botswana	16	20	25.0
7.	Mr. Jean Baptiste Bushiri Waliuzi, Republic of Congo	07	13	85.7
8.	Mrs. Kyere Yeboah Vivian, Ghana	09	17	88.9
9.	Mr. Boakye Augustine, Ghana	14	22	57.1
10.	Mrs. Igecha Anne Njeri, Kenya	14	17	21.4
11.	Ms. Jao Emma Baby, Liberia	11	21	90.9
12.	Mr. Nyirenda Watson Kaunga, Malawi	12	19	58.3
13.	Mr. Kadeka Thembani, Malawi	07	14	100.0
14.	Ms. Sereenen Jargalsaikhan, Mongolia	10	19	90.0
15.	Mr. Moe Tin, Myanmar	06	18	200.0
16.	Mr. Win San, Myanmar	04	07	75.0
17.	Mr. Aung Thet Zaw, Myanmar	04	14	250.0
18.	Ms. Lubna Mohammed Sidahmed Mohammed, Sudan	09	15	66.7
19.	Ms. Manal Ismael Mohammed Ahmed, Sudan	05	19	280.0
20.	Mrs. Ayingabire Beatrice, Uganda	14	20	42.9
21.	Mrs. Alum Dorcas, Uganda	13	17	30.8

16. Evaluation & Feed Back

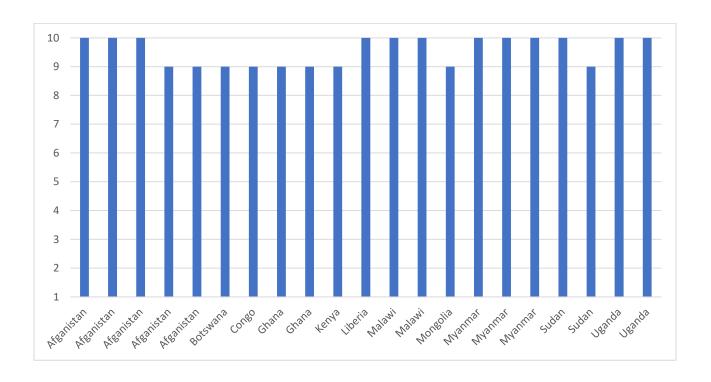
At the end of this international training program, participants were asked to evaluate the whole training course with their feedback for further improvement. Almost all the participants without any exception ranked this training program excellent, informative and well organized in compare to other such program they had attended so far.

Evaluation Scores of Participants about the Training Program

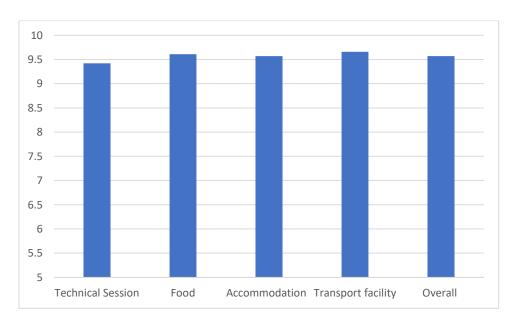
SI.	Technical Sessions	Avg. Score
No.		(Out of 10)
1.	Ice-Breaking, Pre Training Test, Medical & other legal formalities	9.52
2.	Agriculture marketing in Global perspective	9.38
3.	Organic farming in Vegetable crops: An overview	9.38
4.	Visit to ICAR-IIVR Campus, lab & Research Farm	9.38
5.	Strategy for Soil-borne Disease Management in vegetable crops under organic production system	9.52
6.	Soil health and quality under organic system	9.42
7.	Preparation of manures and its quality for organic farming	9.38
8.	Fertigation in Organic Vegetable Production Systems	9.42
9.	Seed treatments for improvement of germination and plant stand under organic system	9.33
10.	Ensure quality gourds production through organic protocols	9.33
11.	Organic production of Chilli and capsicum	9.33
12.	Principals and practice of organic farming	9.38
13.	Emerging and re-emerging pests and their management under organic production system	9.28
14.	Role of biofertilizers in organic production systems	9.57
15.	Viruses infesting vegetable crops and their management under organic system	9.47
16.	Actinomycetes: An unexplored promising microorganisms for Agriculture	9.42
17.	Visit to BHU & Sarnath	9.28
18.	Nutrient management options in organic farming	9.42
19.	Green manures and Crop residues as a source of plant nutrients in organic production system	9.38
20.	Organic farming as a component of integrated farming system	9.47
21.	Field Visit of BHU Agriculture farm to see integrated farming system models	9.47
22.	Processing of organic produce: Strategies and Challenges	9.61

23.	National Organic Program, Seed Rule and Sourcing Organic Seed	9.09
24.	Adoption Potential and Perceptions of Reduced Tillage among Organic Farmers	9.28
25.	Direct Marketing Channels & Strategy for Organic Products	9.47
26.	Utilization of vegetable legumes in cropping sequence under organic system	9.33
27.	Vegetable quality under Organic production system	9.47
28.	Large scale multiplication of Important bioagents for organic farming of vegetable crops	9.52
29.	Production of organic potato	9.47
30.	Options of organic vegetable production under dryland / rainfed areas	9.28
31.	Weed Management in vegetable Crops under organic production system	9.61
32.	Certification and labeling of organic products and participatory guarantee system (PGS) of certification	9.52
33.	Approved Chemicals for Use in Organic Systems	9.19
34.	Minimizing Pesticide residue in soil, plant and harvested produce under organic farming	9.42
35.	Extension approaches for popularization of Organic production system	9.42
36.	Organic farming vis-à-vis Climate change	9.52
37.	Biological nitrogen fixation and Use of microbes to improve nutrient enrichment of soil and nutrient uptake by plants	9.09
38.	Field Visit to organic farm Dagmagpur, Mirzapur, Boating & Ganga Arti	9.52
39.	Role of Underutilized vegetables in organic production system	9.47
40.	Micronutrients management in crop production with vis a vis vegetable under organic production system	9.38
41.	Grafting Tomatoes for Organic Open Field Production	9.52
42.	Yoga classes	9.57
43.	Back at Work Plan Preparation.	9.47
44.	Cultural Evening – Culture for Global Harmony	9.61
45.	Back at Work Plan Presentation.	9.52
46.	Post Training Test	9.66
47.	Food facility	9.61
48.	Accommodation facility	9.57
49.	Transport facility	9.66
50.	Overall impression about Training Program	9.57

A. Country wise overall Grading about the Training



B. Overall Grading under Various Heads



17. Back at Work Plan by Participants

During the 15 days training program, the participants were get acquainted with various technologies for organic vegetables production, processing and marketing through both theoretical and practical orientations. On the basis of this learnt experience in organic vegetables farming, the participants developed their Back at Work Plan and presented individually during sessions which was followed by healthy discussions among the experts and participants. Brief information regarding Back at Work Plan of participants is as follows:

SI No.	Name of the Executive	Problem	Learnt Experience based Activity	Process	Expected Outcome
1.	Mr. Zaryal Khalilullah, Afghanistan	Lack of knowledge and financial support to small scale farmers	Use of integrated farming system to assure sustainable food security	Inviting foreign and National NGOs for awareness, funding and training on IFS	Increase in net return due to decrease in cost of cultivation.
2.	Ms. Azita Salimshahi, Afghanistan	Unawareness of women about organic vegetables.	Introducing organic vegetables production in kitchen garden for women	Development of organic kitchen garden for 20 women	Employ 20 women and provide fresh vegetables to their families
3.	Mr. Qais Totakhil, Afghanistan	Unawareness of farmers about organic vegetables farming	Introducing organic vegetable farming in ANSTU	Preparation of organic farm, search for organic seeds and biofertilizers	Employed 7 person and provide fresh organic vegetables to 80 person
4.	Mr. Mirwais Khpalwaak, Afghanistan	No information about organic vegetables farming or bio agents	Developing small organic vegetables production farm	Developing organic farm by applying all agriculture practices and organic farming procedures	Employed person and provide fresh vegetables to 30 families
5.	Mr. Muhammad Hanif, Afghanistan	Unawareness of people about organic vegetables	Public awareness program about production, process and marketing of organic vegetables	Farm demonstrations and invite farmers to see and training	People will get information about organic farming

6.	Mrs. Munisola Rebecca Kahundu, Botswana	Inadequate knowledge & skills on organic vegetable farming & use of high dose of chemical pesticides.	Production of vegetables through organic farming system	Organize training for farmers and officers on production & process of organic farming, demonstrations	More number of farmers adopted organic technologies, increase in income and yield
7.	Mr. Jean Baptiste Bushiri Waliuzi, Republic of Congo	Motivation & planning in organization	Training and meeting	Sensitization, planning, check work & report	More farmers added in organic farming and ~70% increase in production
8.	Mrs. Kyere Yeboah Vivian, Ghana	Lack of knowledge & skills on organic production among farmers & extension officers	Production of organic vegetables	Sensitize extension officers and farmers through training	Initial increase in income due to premier prices and gradually increase in income and organic crop yield.
9.	Mr. Boakye Augustine, Ghana	Inadequate knowledge and skills among agril. Extension agents and farmers regarding integrated crop management practices	Use of integrated farming approach for sustainable food security	Sensitization to farmers and Agril. Extension agents followed by training on integrated crop management and promote organically produced commodities	40% increase in integrated farming approach and 30% organically produced commodities.
10.	Mrs. Igecha Anne Njeri, Kenya	Inadequate knowledge & skills about organic vegetable farming among farmers and extension agents	Vegetable production under organic farming system	Sensitization of extension agents and farmers followed by training on organic farming	Initially increase in income and in long term both income and yield
11.	Ms. Jao Emma Baby, Liberia	Lack of vegetable market in rural community and cheap price of	Marketing of vegetables	Sensitize farmers and extension agents about market and	More income through vegetable production

		produce		reduce cost of cultivation	
12.	Mr. Nyirenda Watson Kaunga, Malawi	Frequent use of inorganic fertilizers and chemical pesticides	Promotion of organic vegetable farming	Conduct sensitization meeting with farmers group and other stakeholders from public & private sector.	Increased in income and reduced the cost of chemical fertilizers and pesticides
13.	Mr. Kadeka Thembani, Malawi	Indiscriminate use of inorganic inputs in vegetable farming	Reduced inorganic inputs and increase use of organic inputs in vegetables in Chitekwere Extension Planning Area	Meeting/ Sensitization with technical staff, farmers and other stakeholders along with demonstrations and trials on organic vegetable production.	Increase in number of farmers using organic inputs, increase in yield and income.
14.	Ms. Sereenen Jargalsaikhan, Mongolia	Old vegetable varieties, weak collaboration among farmers and insufficient market and processing facilities	Developing organic farming and formation of farmers group	Research on organic farming and organizing training, meeting on organic vegetable farming	Increase in knowledge of farmers, entities & organization people and organic product certification
15.	Mr. Moe Tin, Myanmar	Lack of knowledge among farmers about organic farming and storage	Developing organic farming standard & certification for better price	Organize workshop for officers and farmers. Draft organic farming standard and formation of committee	Certification committee formed and Organic farming standard finalized
16.	Mr. Win San, Myanmar	Lack of knowledge about organic vegetable production and storage	Promotion of organic vegetable farming	Organize workshop for stakeholders, formation of committee & standard of organic farming for	Finalization of certification committee & standard of organic farming

				authentication	
17.	Mr. Aung Thet Zaw, Myanmar	Unawareness about organic farming	Promotion of organic vegetable farming	Formation of organic certification committee and organize workshop on organic vegetable farming and certification.	Organic farming standard formation and promotion will increase income & vegetable yield.
18.	Ms. Lubna Mohammed Sidahmed Mohammed, Sudan	Increase in use of chemical pesticides, fertilizers, herbicides in vegetables	Production of organic vegetables as model farm	Use of organic inputs and mulching for weed control	50% increase in income and yield from organic farm.
19.	Ms. Manal Ismael Mohammed Ahmed, Sudan	Indiscriminate use of pesticides in vegetables	Minimizing pesticides use in vegetables	Use of product extracted from neem & different treatments of neem extraction.	Increase in income and yield by 70%
20.	Mrs. Ayingabire Beatrice, Uganda	Excessive use of chemical fertilizers and pesticides	Promoting organic vegetables	Sensitization of farmers and extension staff for organic farming and preparation of organic manure.	Increase in organic vegetable production
21.	Mrs. Alum Dorcas, Uganda	Indiscriminate use of inorganic inputs	Improving vegetable production by using organic inputs	Capacity building for extension workers & farmers on organic farming & compost making, demonstrations and identification of farmers group	~40% increase in use of organic inputs.

18. Valedictory Session

The Valedictory Session of this 15 days International Training under FTF ITT on "Production, Processing and Marketing of Organic Vegetables" was conducted on 20th February 2018. On this occasion, **Dr. Prithvish Nag, Vice-Chancellor, MG Kashi Vidyapeeth**, Varanasi was the Chief Guest who earlier holds the position of Director, National Atlas and Thematic Mapping Organization, Kolkata under Ministry of Science and Technology, Government of India and also served as Surveyor General of India, Survey of India. While addressing the participants, he expressed the needs of organic farming seeing the hazardous effect of chemical residues in vegetables. Director, ICAR-IIVR, Dr. Bijendra Singh thanks the participants for their active participation and expects to implement the learnt experiences in their work place. Earlier, the Course Coordinator presents the training report to the house followed by feedback given by the participants. At the end, Certificate was given to the participants by the Chief Guest for their successful completion of training program. **Program Schedule of Valedictory Session is as follows**:

03:00 - 03:05 pm	Welcome & ICAR Song	
03:05 - 03:10 pm	Self-Introduction	By Participants
03:10 - 03:20 pm	Training Report	Dr. S. K. Singh Principal Scientist (Agronomy), ICAR-IIVR
03.20 – 03.40 pm	Training Feedback	By trainees
03:40 - 03:50 pm	Director's Remarks	Dr. Bijendra Singh Director, ICAR-IIVR
03:50 - 04:00 pm	Distribution of Certificate to Participants	Dr. Prithvish Nag Chief Guest
04:00 - 04:20 pm	Valedictory Address	Dr. Prithvish Nag Vice-Chancellor, MG Kashi Vidyapeeth Varanasi
04:20 - 04:30 pm	Vote of Thanks	Dr. A.B. Rai Head (Crop Protection), ICAR-IIVR
04:30 pm	Hi-tea	















Glimpse of Valedictory Function

NEWS CLIPPINGS



जैविक खेती से ही रहेगी भूमि की उर्वरता

जासं, सीखड़ (मीरजापुर) : भारतीय सब्जी अनुसंधान संस्थान अदलपुरा द्वारा आयोजित 15 दिवसीय अंतरराष्ट्रीय प्रशिक्षण कार्यक्रम का शुभारंभ करते हुए मुख्य अतिथि प्रख्यात कृषि वैज्ञानिक डा. पंजाब सिंह ने बुधवार को जैविक खेती के महत्व पर प्रकाश डाला। उन्होंने कहा कि इससे कुपोषण और बीमारियों को बहुत हद तक रोका जा सकता है। पर्यावरण सुरक्षा, भूमि उर्वरता एवं टिकाऊ खेती का लक्ष्य प्रभावशाली ढंग से साधा जा सकता है। श्री सिंह कृषि अनुसंधान एवं शिक्षा विभाग के सचिव व भारतीय कृषि अनुसंधान परिषद नई दिल्ली के महानिदेशक रह चुके हैं। प्रशिक्षण में अफ्रीकी एवं एशियाई देशों के कुल 21 प्रतिभागी भाग ले रहे हैं। इनमें अफगानिस्तान से पांच, म्यांमार से तीन, केन्या, युगांडा, घाना, मालवी से दो-दो और मंगोलिया, बोत्सवना लाइबेरिया व कांगो से एक-एक प्रतिभागी भाग ले रहे हैं। यह कार्यक्रम संयुक्त राज्य अमेरिका एवं भारत द्वारा कृषि क्षेत्र में हुए त्रिपक्षीय समझौते पर आधारित है। इसमें विश्व के विकासशील देशों जैसे अफ्रीका आदि के वैज्ञानिकों एवं कृषि से संबंधित अधिकारियों को प्रशिक्षण दिया जा रहा है। मुख्य अतिथि ने जैविक खेती का पोषण एवं खाद्य सुरक्षा के महत्व को बताया। इस अवसर पर संस्थान के निदेशक डा. विजेंद्र सिंह ने कहा कि जैविक विधि से उत्पादित सब्जियों के प्रयोग से मानव में होने वाली बीमारियों एवं कुपोषण से बचा जा सकता है।

अमरउजाला

वाराणसी

15 दिवसीय कृषि प्रशिक्षण कार्यक्रम के शुभारंभ पर बोले पूर्व कुलपति प्रो. पंजाब रि

ज़ैविक खेती से ही सुधरेगी मिट्टी की सेह

अमर उजाला ब्यूरो आराजीलाइन।

भारतीय सन्जी अनुसंधान संस्थान शाहंशाहपुर में बुधवार से आयोजित 15 दिवसीय अंतरराष्ट्रीय कृषि प्रशिखण कार्यक्रम में खेती को बेहतर करने पर जोर दिया गया। बोएचवू के पूर्व कुलपृति प्रे, पंजाब सिंह ने कहा कि जीवक खेती व पोषण खाद्य सुरक्षा आज विश्व की पहली जरूरत है। बलदत पेरिवेश में इसकी जरूरत और बढ़ गई है। जैविक खेती करके ही पर्यावरण को शुद्ध रखकर भूमि की उर्वरता को कायम रखा जा

उन्होंने कहा कि टिकाऊ खेती के लिए जैविक खेती, कार्बीनक खेती व परंपरागत खेती को जारी रखना होगा। उन्होंने कहा कि भारत सरकार ने अमेरिका से कृषि क्षेत्र में एक त्रिपक्षीय समझौता किया था जो अब फलित होने लगा है। उसी के जैविक खेती व पोषण खाद्य सुरक्षा आज विश्व की पहली जरुरत

तहत यह प्रशिक्षण कार्यक्रम भारतीय सब्जी अनुसंभान संस्थान में आयोजित है। प्रशिक्षण कार्यक्रम में अफ्रीका देश के 11, एशियाई देश के 21 कृषि विशेषज्ञ शामिल हो रहे हैं। यहां अफगानिस्तान, व्यांभार, केन्या, युगांडा, न्यान, मालदीव, मंगीलिया, साइबेरिया, कांगो सहित कई देश के कृषि वैज्ञानिक व कृषि विभाग के उच्च अधिकारी प्रशिक्षण प्राप्त करने के लिए भारतीय सब्जी अनुसंभान संस्थान के ति एस पारतीय सब्जी अनुसंभान संस्थान के जिल्ला का स्थान किया। इस मौके पर संस्थान के वैज्ञानिक डॉ. एम वी संह, इं. सुभाकर पांडे सहित संस्थान के कई वीज्ञानिक डॉ. सुभाकर पांडे सहित संस्थान के कई वीज्ञानिक उपस्थित थे।

राष्ट्रीय कृषि विकास योः के तहत बनाया जाएगा र

चिर्डमांव। केंद्र सरकार की 2022 तक कि आय बेगूनी करने के लक्ष्य को मूर्त रखा दें का ज्यायद युक्त हो का हैं। किस्सान को बेहतर लिए उत्साहित करने से लेकर टिप्प दिर -राष्ट्रीय कृषि विकास योजना के तहत ग्राम, और जिला स्तर पर समूह बनाया जाएगा। आमप्रधान, स्ताक प्रमुख और जिलापीयात वारित समूह के पटेन आध्यक्ष होंगे। सहायक अधिकारी कृषि लालता प्रसाद ने बताया कि की समृद्धि और आय बढ़ाने के लिए कृषि-व का अयोजन वाम स्वाक और जिलास्तर प जाना है। इसको और बेहतर बनाने के लि यित निवास और राष्ट्रीय उत्पादकता परिषद

पोषण को जैविक खेती जरूरी : पंजाब सिंह

हिन्दुस्तान

07 • वाराणसी • गुरुवार • ०८ फरवरी २०१८

जिक्खनी। भारतीय सब्जी अनुसंघान संस्थान शाहंशाहपुर में बुधवार को अतर्राष्ट्रीय प्रशिक्षण कार्यक्रम का उद्घाटन बीएचयू के पूर्व कुलपित डॉ. पंजाब सिंह ने किया। उन्होंने कहा दुनिया में विकासशील देशों में पोषण और खाद्यान्न सुरक्षा के लिए जैविक खेती को बढ़ावा देने पर जोर दिया जा रहा है। जैविक खेती के माध्यम से पर्यावरण सुरक्षा, भूमि उर्वरकता एवं टिकाऊ खेती के घटक के रूप में अपनाने के लिए इस तरह के प्रशिक्षण की आवश्यकता जरूरी है।

संस्थान के निदेशक डॉ. बिजेंद्र सिंह ने कहा कि जैविक विधि से उत्पादित सिंब्जयों के उपयोग से बीमारियों और कुपोषण की समस्या से निजात पाया जा सकता है। इस अवसर पर मैनेज संस्थान हैदराबाद के निदेशक डॉ. बीके पार्थी ने विचार व्यक्त किया। सब्जी उत्पादन विभाग के विभागाध्यक्ष और प्रशिक्षण कार्यक्रम के संयोजक डॉ. जगदीश सिंह ने कार्यक्रम की रूपरेखा प्रस्तुत की एवं गतिविधियों की जानकारी दी।