Criterion - 7

Institutional Values and Best Practices

NAAC- SSR (2nd Cycle)

ETERNAL UNIVERSITY

BARU SAHIB, SIRMOUR-173101
HIMACHAL PRADESH

7.1.9(5)
Unnat Bharat Abhiyan

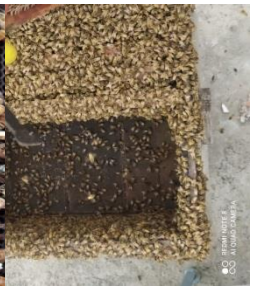
ETERNAL UNIVERSITY
BARU SAHIB, SIRMOUR-173101
HIMACHAL PRADESH

Final Report on Unnat Bharat Abhiyan (UBA) sponsored on-campus training program on project entitled "Developing beekeeping as a sustainable livelihood in rural communities"

Training programs were organised at the premises of Eternal University under the UBA sponsored project entitled "**Developing beekeeping as a sustainable livelihood in rural communities**". In this program, demonstrations were given to the farmers on Bee keeping at University Apiary. Bee keeping represents an appropriate combination of farm enterprises in rural areas. This is an effective strategy in raising incomes, generating employment and alleviating poverty among small and marginal farmers. Training to the farmers was also given on the uses of different bee's products (honey, beeswax, propolis, royal jelly and bee venom). It will impart awareness and new learnings to the local farmers of this area. These trainings were for 01 day, five times throughout the year with 30 participants from Lana Marag, Lana Bhalta and Kheri and this also including exposure visit to UHF, Nauni.

The programme began with registration of the farmers. Dr Priyanka Thakur, Assistant Professor, Department of Entomology gave the welcome address with a brief introduction to the project and apiary unit. The advantages of the apiary unit were discussed in the opening session with emphasis on bee-keeping practices. A detailed plan of the lectures and practical training to be conducted was also discussed per training.










प्रशिक्षण कार्यक्रम
इटरनल विश्वविद्यालय, बड़ू साहिब
हिमाचल प्रदेश
UNNAT BHARAT ABHIYAN

UNNAT BHARAT ABHIYAN

TECHNOLOGY CUSTOMISATION

Title of the Work:

Low cost bait trap for the management of fruit fly in tomato and other crops.

Subject:

Sustainable Agriculture

Village where it will be implemented:

Five villages surrounding Eternal University of Sirmaur District of Himachal Pradesh:

1. Lana Machher
2. Lana Marag
3. Lana Bhalta
4. NeriNawan
5. Kheri

Work done till now:

Tomato, fruits and cucurbits are important cash crops of Sirmour district. Fruit flies causing huge economic losses to the tune of 35 – 80% in different areas. Annual losses due to fruit flies in India are estimated at around Rs. 6000 crores. Existing recommendations fail to target the adults, eggs and the developing maggots apart from high residual toxicity of pesticides. A localized bottle trap is developed by Eternal University, Barusahib (HP) using a combination of fruit fly para pheromones for attracting male adults for effective and eco-friendly management of this dreaded pest. The bottle trap is made of waste plastic bottles.

Field trial:

The low cost bait trap for the management of fruit fly in tomato and other crops has been installed in tomato crop for field trial in the University. After the field trial by the university, these traps were supplied to the farmers free of cost in these villages. Once farmers were convinced of the efficacy of these traps, the method for fabricating these traps was also taught to the local farmers of these five villages mentioned above.

Low cost fruit fly trap installed in tomato field

Fruit fly maggots in cucumber

Fruit fly collected in the field trial of the low cost bait trap

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Subsurface drip irrigation and conservation agriculture in Himachal Pradesh

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Subsurface drip irrigation and conservation agriculture in Himachal Pradesh

Submitted by

Dr. Mahesh Tripathi

Eternal University, Baru Sahib

Sirmour, Himachal Pradesh- 173101

Name of the institute& code	Eternal University, Baru Sahib Sirmour & Id: U-0182.
Title of the project	Subsurface drip irrigation and conservation agriculture in Himachal Pradesh
Name of Subject expert group	Sustainable agriculture system
Name of villages where project development activities was carried out	Chhapang
Duration/ Budget of the project	12 month / 1.0 Lakh
key words	Subsurface drip irrigation, zero tillage, mulching, multiple cropping

Brief Introduction

The water scarcity problem is increasing day by day consequently the cultivation of crops in limited water is cumbersome without knowing the efficient strategy of using per drop of water for good crop production. Keeping in view this burning problem, we have initiated a project work to enhance the water use efficiency through the subsurface drip irrigation technology. In this water saving technique we have installed the drip irrigation pipes about 15 cm below from the soil surface so that the surface water loss could be avoided and effective water absorption from rhizosphere zone could take place. After finishing the installation the seedlings of different vegetable crops were planted and straw mulch is added to conserve the soil moisture.

Current status of the project: Project completed (March 2019- september2019)

Achievement of the project

The technology for sub surface drip irrigation has been developed successfully. The different vegetable crops were cultivated and some were harvested. The appreciable production of vegetables achieved with the micro irrigation and effective nutrient uptake. The application of water in the root zone of crops through the subsurface drip irrigation system worked effectively not only to conserve the water but also increased the water and nutrient use efficiency.

All vegetable crops were grown in total 250 m^2 area and their productions were given in following table.

S.No.	Vegetable crop	Production (Kg)
1	Cucumber	100.0
2	Okra	60.0
3	Tomato	150.0
4	Brinjal	210.0
5	Chili	80.0

Project Outcomes

The outcomes of project work entitled "subsurface drip irrigation and conservation agriculture" Under the Unnat Bharat Abhiyan can be summarized under following heads.

1. More crops per drop of water

2. Prevent the soil and water loss

3. Time and labour saving technique

4. Awareness to surrounding farmers for conserving the water

5 Demonstration to the agricultural students

Subsurface drip irrigation technology is found very effective to conserve the water since it facilitates the water requirement directly to roots of crops hence the chances of water loss is negligible also with the adoption of subsurface drip fertigation the loss of fertilizer could be minimized resultantly nutrient use efficiency could be increased. The amount of water saved with the use of subsurface drip irrigation system as compare to flood or surface application of water is given in the below table.

Description of Project

The subsurface drip irrigation system has been installed in chhapang village of Sirmaur district, Himachal Pradesh, in 250 meter square (25.26 m X 9.9 m) area. This system contains disc filter which helps to filter the water, venturi injector for fertigation, pressure gauge, air vacuum release valve, Dripnet PC and flush valve etc. dripnet PC has been installed at 15cm depth from soil surface at 45 cm apart and each dripper is fixed at the distance of 30 cm. A single dripper covers 30 cm diameter to wet land. Discharge rate of water is 2 litres per hour. There are 22 rows of dripnet PC according to field lay-out and system installation. After successful installation, different vegetable crops viz. tomato, brinjal, okra, chilli, and cucumber were sown/ planted in strip cropping system at the distance of 5 cm from the dripnet PC. These crops have different row ratio. Tomato, brinjal, okra and chilli each crops were raised in individual 5 rows; and cucumber was grown in 2 rows.

Impact of Subsurface Drip Irrigation Technological development programme

The purpose of developing the subsurface drip irrigation system is to conserve the resources along with the effective utilization of water and nutrient for higher and better quality yields, for this, every single dripper in field to deliver the perfect quantity of water and nutrients to the roots of single plant. The following vegetable crops were cultivated in research stations in the area of 250 m^2, through subsurface drip irrigation system the flow rate was 2 L/hr and total amount of water used, 64410 litres, shown in Table 1.

Table 1: Total water consumption under the subsurface irrigation system.

SL. NO.	Crops	No. of plants	No. of rows	Area (m^2)	Yield (kg)	No. of Irrigation	Interval of Irrigation(days)	Total amount of Water used (litre)
1.	Chilli	285	5	56.84	80	50	4	14250
2.	Brinjal	285	5	56.84	210	50	4	14250
3.	Tomato	285	5	56.84	150	50	4	14250

4.	Okra	285	5	56.84	60	50	4	14250
5.	Cucumber	114	2	22.73	100	65	3	7410
Total water used (litre)								64410

Subsurface drip irrigation has proven to be effective irrigation method comparison flood irrigation (surface irrigation), by using this technique of irrigation we've saved about 66.76% water in comparison to surface application of water (Table.2)

After successful development of this subsurface irrigation system, the demonstration was given to the farmers and farmers are also taking interest to adopt this technique.

Table 2: Compression between Flood irrigation vs. Subsurface Drip Irrigation

Flood Irrigation			**Subsurface Drip Irrigation**	
S. N.	**Crops**	**Total amount of Water used through Flood Irrigation (litre)**	**Total amount of Water used through Subsurface Drip Irrigation (litre)**	**Total water saving (litre)**
1.	Chilli	42750	14250	28500
2.	Brinjal	42750	14250	28500
3.	Tomato	42750	14250	28500
4.	Okra	42750	14250	28500
5.	Cucumber	22230	7410	14820
Total water used (litre)		193230	64410	128820

Photos of the UBA activities

This photograph showing a water tank is constructed and linked it to electric pump with pre-filter

This photograph showing the installation of main line of subsurface drip irrigation with water filter, venturi injector and control valve

This photograph showing the labours are making optimum depth (15 cm) for installation of dripnet PC (lateral pipes)

This photographs is showing the functiong of drip system

This photograph is showing that one dripper moistened of about 30 cm diameter

This photograph is showing the successful installation of subsurface drip irrigation system and transplantaton of different vegetable crops.

This photograph showing addtion of the straw mulch which will help to cnserve the moisture and weed control

This photograph showing that the loss of water is more from surface drip irrigation system as compare to sub-surface drip irrigation system which could be directly delivered to the root zone with fertilizer.

An overview of all vegetable crops grown under subsurface drip irrigation system at Chhapang village.

Performance of brinjal crop at chhapang village under subsurface drip irrigation with straw mulching

Performance of Chili crop at chhapang village under subsurface drip irrigation with straw mulching

Performance of tomato crop at chhapang village under subsurface drip irrigation with straw mulching

Performance of tomato crop at chhapang village under subsurface drip irrigation with straw mulching

Scientist delivering about importance of subsurface drip irrigation

Group photo with farmers after Unnat Bharat Abhiyan activity

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Fwd: Change of UBA Coordinator

Inbox ×

Dr. Mahesh Tripathi <maheshagriengg@gmail.com> Tue, Dec 7, 2021, 4:21PM

to me

---------- Forwarded message ---------
From: **Santosh Bhatt** <sbhatt3713@gmail.com>
Date: Sat, Oct 9, 2021, 1:31 PM
Subject: Fwd: Change of UBA Coordinator
To: Mahesh Tripathi <maheshagriengg@gmail.com>

---------- Forwarded message ---------
From: **Paramjit Singh** <contact@eternaluniversity.edu.in>
Date: Sat, 4 May 2019, 2:25 pm
Subject: Fwd: Change of UBA Coordinator
To: Santosh Bhatt <sbhatt3713@gmail.com>
Cc: Harcharan Dhaliwal <hsdhaliwal07@gmail.com>

From: **Unnat Bharat Abhiyan** <unnatbharatabhiyaniitd@gmail.com>
Date: Sat, May 4, 2019 at 12:23 PM
Subject: Re: Change of UBA Coordinator
To: Paramjit Singh <contact@eternaluniversity.edu.in>

Dear Sir/Madam,

Your concern has been resolved successfully. Please use below credentials and proceed further with your UBA activities.
User ID: sbhatt3713@gmail.com
Password: sbhatt3713@g

On Sat, May 4, 2019 at 9:26 AM Paramjit Singh <contact@eternaluniversity.edu.in> wrote:

> Respected Sir/Madam,
>
> Required information is submitted as under:
>
> (a) AISHE Code : U-0182
>
> (b) Name of the Institution : Eternal University, Baru Sahib, District-Sirmour (HP) Pin-171101
>
> With regards,
>
> Secretary
> Vice Chancellor
> Eternal University

ETERNAL UNIVERSITY

(WORLD PEACE THROUGH VALUE BASED EDUCATION)

Established under the Himachal Pradesh Government Act No. 3 of 2009. Recognized by UGC, ICAR, AICTE, INC, NCTE, DSIR, DRDO and NAAC Accredited

Ref: EU/VCO/72/37

November 02, 2023

To,

The District Collector
Sirmaur, Himachal Pradesh

Subject: Identification of villages under the Unnat Bharat Abhiyan, a flagship program of Ministry of Education, GoI.

Dear Sir,

Ministry of Education (MoE), Government of India has launched a flagship Program at National level called Unnat Bharat Abhiyan (UBA), with the vision to involve professional and higher educational institutions in the development process of rural areas in the country to achieve sustainable development and better quality of life and experiential learning among students. Indian Institute of Technology Delhi has been designated as the National Coordinating Institute by the Ministry of Education GoI for this program.

Our University **Eternal University and U-0182** has agreed to participate in UBA as a Participating Institute (PI).

Dr. Mahesh Prasad Tripathi and contact detail. 8839463167 has been duly authorized in this regard from our side to carry on the activities of UBA in our organization as Project Coordinator.

Under the UBA program every Participating Institute is to connect with a cluster of five villages near by Institution in consultation with the District Administration. This is to bring to your kind notice that we have proposed the following villages:

S. No.	Name of village	Block name	Panchayat Name	District
1.	Lana Bhalta	Pachhad	Lana Bhalta	Sirmour
2.	Lanamiyu	Pachhad	Lana Bhalta	Sirmour
3.	Dimber	Rajgarh	Dimber	Sirmour
4.	Kotla Mangan	Rajgarh	Kathli Bharan	Sirmour
5.	Bagar Dingri	Pachhad	Mangrah	Sirmour

With regards

Your Sincerely

3/11

(Name and signature, Head of Institute)

Vice Chancellor
Eternal University
Baru Sahib (H.P.) 173101

Copy to UBA IIT Delhi

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