

**Agricultural Development Trust,  
Krishi Vigyan Kendra, Barmati.**

**&**

**Tasty Bite Foundation, Pune.**

**Integrated Agriculture Development Project  
Khor, Deulgaon-Gada, Padavi, Daund, Dist-Pune.**



अॅग्रीकल्चरल डेव्हलपमेंट ट्रस्ट,  
संचलित  
**कृषि विज्ञान केंद्र, बारामती**  
आणि  
**टेस्टी बाईट फाउंडेशन**  
यांच्या संयुक्त विद्यमाने आयोजित  
**एकात्मिक शेती व्यवस्थापन प्रकल्प**



**AGRICULTURAL DEVELOPMENT TRUST'S  
KRISHI VIGYAN KENDRA, BARAMATI, DIST - PUNE 413115**



**TASTY BITE FOUNDATION PUNE,  
DIST - PUNE 412214**

## INDEX

Sr.No	Particulars
<b>A</b>	<b>Commencement of project works &amp; Bhoomi-Pujan, Discussion about the Project with villages</b>
<b>B</b>	<b>NRM Intervention for Water Conservation</b>
1	Widening & Deepening of water stream for Water Conservation
2	Constraction of Mati Nala Bandh
3	Plastic Water Storage Tank (Farm Ponds)
5	Construction of Cemnt Check Dam
<b>C</b>	<b>Crop Production Intervention</b>
1	Demonstartion on Intercropping Pigeon Pea+ Soybean
2	Demonstration On Silage Making Technology
3	Demonstartion On In-Situ Soil Moiture Conservation for Rabbi Sorghum
4	Demonstraion on Grafted Vegetable of Seedling Technolgy
5	Demonstration On Onion Seed Production
6	Demonstration On Chilli & Tomato cultivation
7	Demonstartion on Grafted Custard Apple plantation
8	Demonstation On cultivation of Bengal Gram
9	Demonstration on Use of Micronutrients in fig Production
10	Organic Vegetable Production in Back yard for Family
11	Guidance and Training on various crops
<b>D</b>	<b>Livestock Intervention</b>
1	Back Poultry Farming
2	Sheep – Goat Breeding Management
3	Training on Different Subject ie, Poultry Farming, Sheep- Goat Management& Dairy Management
<b>E</b>	<b>Integrated Farming System Modules</b>



# Integrated Agriculture Development Project

The Integrated Agriculture Development Project was launched on 01<sup>st</sup> February 2021 in three villages of Khor, Deulgaon Gada & Padavi in Daund Tehsil in association with Agricultural Development Trust, Krishi Vigyan Kendra Baramati and Tasty Bite Foundation Pune.

In these selected villages, the villagers were first informed about the Integrated Agriculture Development Project. Under this project, widening & deepening of Water Stream, Mati Nala Bandh, Construction of Cement Check Dams, Plastic Water Storage Tank, poultry farming, goat rearing Enterprise and various Demo crops and various works were started with the villagers.



Project started With Bhoomi-Pujan, of Widening & Deepening, of water stream at khor village.



Discussion of Project with Farmers at khor Village



# **NRM Intervention For Water Conservation**





## **Situation Before Water Stream Widening and Deepening ( Year-2020 )**



**Decrease in water storage capacity of water stream due to silting  
at - Dombewasti, Khor**



**Decrease in water storage capacity of water stream due to silting  
At- Nanamal, Padavi**





**Decrease in water storage capacity of water stream due to silting  
At- Lawandewasti, khor**



**Decrease in water storage capacity of water stream due to silting  
At- Jachakwasti & Manewasti, DeulgaonGada**

In three selected villages of Khor, DeulgaonGada and Padavi, due to silting of water Stream has reduced water storage capacity, reduced water levels in wells and bore wells, resulting in reduced farm yield and income of farmers.



**Under the project, 13 Water Stream were deepened and widened and after the deepening, of water stream (Year 2021-22)**



**Water Stream Widening & Deepening at- Nanamala, Padavi**



**Water Stream Deepening and Widening Nana Mala, Padavi - Water Storage**



**Water Stream Deepening and Widening Raskar Mala, Deulgaon - Water Storage**





**Water Stream Deepening and Widening Morewasti, Deulgaon - Water Storage**



**Water Stream Deepening and Widening Narayanbet, Deulgaon - Water Storage**



**Under the Project due to Deepening and widening of Water Stream helped to raise the water level of open wells and borewells at- Khor, Deulgaon Gada & Padavi Village**



## 5 Mati Nala Bandh Were Constructed Under the Project



**Mati Nala Bandh at- Lawandewasti, Khor**



**Mati Nala Bandh at- Bichukalewasti, Khor**



## **Cement Check Dams Were Constructed Under the Project**



**Under the project, a cement embankment was constructed by deepening and widening Water Stream at - HaribhachiWadi, Khor.**



**Deepening and widening of streams and construction of cement Check Dam embankments helped to increase the water storage capacity of the Water Stream and adjacent wells, borewells.**

## 5 Plastic Water Storage Tank (Farm Ponds) Were Constructed Under the Project



**Plastic Water Storage Tank Mr. Gorakh Lawande At- Khor**



**Plastic Water Storage Tank Mr. Dnyaneshwar Ramchandra Chaudhari  
At- Deulgaon Gada**

Due to accumulation of silt in the streams of three selected villages namely Khor, Deulgaon Gada and Padvi, the storage capacity of water has decreased by 50 to



60 percent due to which the water level of wells and borewells has decreased. Also, after the rains, there was no storage of water in the hilly areas and the water was flowing through the water streams. Also, due to lack of water for agriculture in the summer, the agricultural income of the farmers also decreased.

Therefore, as per the demand of the farmers of the villages, 13 water stream in the three villages selected under this project were deepened and widened and 5 Mati Nala Bandh were constructed in these villages . 5 Plastic Water Storage Tank were constructed in three villages and a one cement check dam was constructed at Khor to store the rainwater.

Before deepening and widening of the water stream, only 142 acres of land adjacent to the stream was Irrigated & cultivated in 2020. After deepening and widening of the water stream, 199.5 acres of land adjacent to the water stream became irrigated & Cultivated in 2021-22.

Deepening and widening of Water Stream, Cement Check Dam, Mati Nala Bandh and Plastic Water Storage Tank fields resulted in the accumulation of 1149.48 million cubic meters of rainwater, which is resulted in increasing the water level of 158 wells and 92 borewells in the three villages by 10 to 12 feet. Due to this, the crop yield was increased resulted in increase in income of farmers by 50 to 60 percent.

#### **Potential Water Available in NRM Work Done 2020 – 21 & 2021-22**

<b>Sr. No.</b>	<b>Name of the NRM Site</b>	<b>Water Available in June 2021 (In Lakh Litter)</b>	<b>Present Water Available in Jan. 2022 (In Lakh Litter)</b>	<b>Potential Water Storage Capacity (In Lakh Litter)</b>	<b>Beneficiaries No.</b>
<b>A. MattiNalaBandh</b>					
1	Bichukalewasti-Khor	80.00	91.08	129.89	09
2	Bichukalewasti-Khor	0	0	70.00	06
3	Lawandewasti-Khor	0	0	15.34	06
4	Lawandewasti-Khor	9.35	0	16.18	08
5	Mukkadamwadi-Khor	0	0	73.26	09
<b>B. Construction of Cement Check Dam</b>					
1	Haribhachiwadi-Khor	90.00	16.17	90.00	21



**C. Widening & Deepening of water stream**

1	Bichukalewasti-Khor	18.65	0	43.20	08
2	Lawandewasti-Khor	0.99	0.8	3.43	07
3	Dombewasti-Khor	0	0	47.24	11
4	Dombewadi-Khor	0	17.00	29.01	10
5	Raskarmala-Deulgaon No.1	09.36	14.40	11.519	19
6	Thoratwasti-Deulgaon	0	0	15.01	05
7	Mane &Chaudhariwasti- Deulgaon	02.80	0	65.16	13
8	Shindewasti-Deulgaon	0	0	33.16	07
9	Narayan Bet Site No.1 Deulgaon	0	95.70	53.97	11
10	Narayan Bet Site No.2 Deulgaon	0	22.87	26.43	10
11	Narayan Bet Site No.3 Deulgaon	0	75.44	22.08	16
12	Narayan Bet Site No.4 & 5 Deulgaon	0	61.60	67.00	11
13	Jachakwasti To KalubaiMandirDeulgaon	0	0.42	86.73	14
14	Raskar Mala Deulgaon No.2	0	2.00	32.24	12
15	JagtapwastiPadavi	0	10.80	14.51	10
16	Nanamalapadavi	0	12.00	16.63	06
<b>D.</b>	<b>Construction of Plastic water storage Tank</b>	<b>0</b>	<b>150.00</b>	<b>187.50</b>	<b>05</b>

**NRM Work Done 2022– 23**

17	<b>Chawan-wasti,Khor</b>	<b>0</b>	<b>0</b>	<b>40.00</b>	<b>14</b>
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# Crop Production Intervention





## Demonstration on Inter cropping Pigeon Pea + Soybean.

### Pigeon Pea

- **Variety:** -BDN-711
- **Soil:-** Medium heavy, draining
- **Sowing Period :-**15 June to 15 July
- **Intercrop :-**Soybean
- **Sowing distance:-**180X 30Cm /90X60 Cm
- **Seed rate :-** 6 kg /Acre
- **Fertilizer Management:-** 10 kg of nitrogen and 20 kg of phosphorus /acre
- **Water Management :-**After 30 to 35 days in vegetative stage, 45 to 50 days In flowering stage
- **Harvesting :-** After the pods are dry
- **Yield :-**7.2 to 8 Quintal / Hector

### Soybean

- **Variety:-**Phule Sanghum
- **Soil:-**Medium heavy, draining
- **Sowing Period:-**June First Week
- **Intercrop :-**Pigeon Pea
- **Sowing distance:** -45 X 05 Cm.
- **Seed rate:-**25 Kg/ Acre
- **Fertilizer Management:-** 20 kg nitrogen, 30 kg phosphorus and 18 kg Sulphur/ acre
- **Water Management :-**After 30 to 35 days in vegetative stage, 45 to 50 days In flowering stage
- **Harvesting :-** 90 to 100 Days After
- **Yield :-**8 to 10 Quintal / Acre



Sr. No.	Name of Activity	No. of farmers	No. of Villages	Total Covered Area	Yield and Income /Acre
1	Demonstration on Intercropping Pigeon Pea + Soybean	30	03	15 Acre	3.2 Qt/Acre Rs.19520/-

In the villages of Khor, Deulgaon Gada and Padavi, as the farmers do not know about the Pigeon Pea + soybean crops, these crops are grown in very small area. Farmers were guided about this crop and seed of soyabean (Var.Phule Sangam) Red gram (Var.BDN-



711) and biological fertilizers was given to 15 farmers for intercropping for 0.5 acre area per farmer.

A total of 15 acres of farming was done in intercropping in all the three villages. The use of this intercropping technique gave the farmer an average yield of 3.2Qt/Acre and the market price per quintal is Rs.6100. From half an acre area farmer received gross income of Rs. 9150/-per farmer and earlier farmers kept the land fallow during Kharif season without any income. It has helped to increase the income of farmers.

Many officers and farmers also visited this demonstration plot.



The 30 farmers were provided with seeds and Bio fertilizers.



Visit of officers and farmers to Red Gram& Soybean Intercropping Demonstration plots.

## **Demonstration on Silage Making Technology**



### **Process off silage making**

- 1. Harvesting and Chaffing of fodder 2-2.5 cm.
- 2. Filling of silo pit/ Tank/Bags
- 3. Spraying of silage culture
- 1 lit per 10 tone of fodder
- 4. Pressing by tractor
- 5. Sealing of silo tank
- 6. Opening after 45 days.

### **ENSILAGE- A POTENTIAL MEAN OF PRESERVATION OF NUTRIENTS**

- Ensilage has many advantages over the other methods for preservation of nutrients.
- Silage is the material produced by controlled fermentation of nutrients under an anaerobic condition.

### **WAYS OF CONTROLLING FERMENTATION FOR MAKING QUALITY SILAGE FROM FODDER**

- To have the quality silage, lactic acid type of fermentation need to be encouraged.
- On the other hand, clostridial type of fermentation spoils the quality of silage.

### **Advantages**

- Lower field losses particularly of leafy portion which is relatively rich in protein and minerals
- Lower probability of rain damage and thus leaching of nutrients
- Storage over longer period, if properly packed under optimal ensiling conditions.
- Provide more succulent feed to livestock.
- Ideal technology for preserving nutrients in temperate conditions.
- Less dependence over weather conditions, particularly availability of sun lights
- Marketable
- Silage can be produced by contract farming.



- At the age of 80 to 90 days, maize fodder can be harvested, so the fodder is cut one month earlier, thus saving one month of time.
- There is no need to go to the farm every day for fodder.
- This saves 75 mandays in a year and reduces the cost of diesel petrol.

### **Disadvantages**

- Being mechanized technology, requires considerable capital investment
- Limits the preservation of leguminous fodders
- Losses of nutrients can be high if not properly preserved with exclusion of air and water, High moisture silage leads to greater seepage losses
- Voluntary intake by animal is a limiting factor if acid production is high.
- Must be fed as soon as possible after removal from silo to avoid secondary fermentation
- Chopping of forage is must

### **Quality of silage :-**

1. pleasant aroma 2. **PH** – 4.5 -5.5 3. **Colour**– Greenish yellow (not white or black)

Lactic acid: Above 3%

Acetic acid: up to 5% Butyric acid: less than 0.2%

### **❖ Inputs given to farmers under the project**

- 1) Maize Seed – 7 Kg per Beneficiaries (Variety – Syngenta - 6242 +)
- 2) Silage Bag– 4 Bag per Beneficiaries
- 3) Silage Culture- 1 Litter per Beneficiaries
- 4) No. of farmers - 30 Nos.



## Training Program on Silage Making Technology At- Deulgaon Gada

Sr. No.	Name of Activity	No. of farmers	No. of Villages	Total Covered Area	Result of per Farmers Income
1	Silage Making Technolgy	30	03	30 Acre	10 Ton/Acre Silage Rate Rs.6500/- Per Ton Silage

### Improved Cultivation practices of making in baggs



**Mr. SantoshAbasoBarvkar (Padavi)Mr.ParvinAktarShaikh(Deulgaon)**

**Bagged silage**





**Mr.ParvinAktarShaikh(Deulgaon)Mr.NandkumarBarvkar(Deulgaon)**



**Mr.JalindarJagtap (Padavi)**



### **Use of silage to animal in Summer Season**

**Results :-**Due to scarcity of water in the villages of Khor, Deulgaon Gada, the milk yield has decreased due to lack of in adequate feed for the animals in summer season . For this purpose, the farmers were given maize seeds under the project to cultivate maize for silage making to provide food for the animals for at least 8 to 9 months in the form of silage . It helped to produced 10 tons of Silage per farmer.

Due to the use of this technology, the milk production per animal has increased by 2 liters per day per animal and this has also helped to increase milk yeild FAT, SNF by 17% and 6% respectively and the increase in income of the farmers by 17 % .



## Rabbi Sorghum (Jawar)

### Climate and soil:

Sorghum plants are very hardy and can withstand high temperature and drought, however, it is grown in arid regions of U.P, Rajasthan and humid regions of Bengal and Bihar , Maharashtra . It may be successfully grown under atmospheric temperature ranging between 15 °C to 40 °C and annual rainfall ranging from 400 to 1000 mm.

Sorghum is grown on a variety of soil types but the clayey loam soil rich in humus is found to be the most ideal soil. It may tolerate mild acidity to mild salinity under pH 5.5 to 8.0. A good sorghum soil must have efficient drainage facilities though; it may withstand water logging more than maize.

### Land Preparation:

Deep summer ploughing with mould board plough soon after rabi crop is harvested and leaving the soil exposed to sun until onset of monsoon is a common practice. With the onset of monsoon the land should be ploughed twice by country plough. But the soil for grain crop should be pulverised for a fine tilth by harrowing and cross plankings. If desired, field should be levelled before sowing so that rainwater may be well distributed throughout the field.

### Sowing:

**a) Sowing time:** Sorghum crop is grown in almost all the seasons of the year. In Northern India conditions it is grown in kharif season but in Southern India the crop is grown during Rabi and summer seasons. Kharif crop should be sown soon after first break of monsoon rains i.e. nearly in last week of June.

Therefore, the best sowing time is in last week of June to first week of July depending upon onset of monsoon. Whereas rabijawar is sown in the month of October to November.

**b) Spacing:** A spacing of 40-45 cm between the rows and 15-20 cm between the plants is quite satisfactory.

**c) Seed rate:** Required plant population may be obtained by using a seed rate of 8-12 kg/ha. The seeds are sown about 3-4 cm deep in the furrows.

### Seed treatment:

The seed treatment may be done by Thiram at the rate of 3g/kg of seed or sulphur at the rate of 5g/kg of seed. The seed is treated, dried and sown in the field.

### **Application of manures and fertilizers:**

Sorghum is an exhaustive crop and it depletes soil fertility very fast, if proper care is not taken. The fertilizer doses differ from type to type and nature of crop to be grown e.g. local varieties need less quantity than hybrid ones. Similarly, irrigated crop requires higher doses than rainfed ones no matter whether it is a local or high yielding variety. Considering all these points an optimum dose may be found out from the following details: an optimum dose of nitrogen for rainfed high yielding and local varieties of irrigated crop should be 60-80kg/ha while for irrigated high yielding varieties it should be between 120-150 kg/ha. In case of heavy soils one single application gives better results than split application but in case of light soils split application i.e. half basal and remaining half as top-dressing at knee-height stage or 30-35 days after sowing is preferred. Under low rainfall or in rainfed areas top-dressing of nitrogen is not required. On an average a dose of 40-60 kg  $P_2O_5$ /ha is found to be good. Placement at 4-6 cm depth has given better results. However, under normal conditions it is mostly basal placed. Potash at the rate of 40kg/ha applied at the time of field preparation gives good result.

### **Interculture :**

Manual weeding and hoeings help in solving the weed problem but it is possible only during rabi and arid cropping seasons while rains do not permit the manual weeding or hoeing during kharif season. Application of herbicides like atrazine @ 0.5 kg a.i./ha or Propazine @1.0 kg a.i./ha dissolved in 900-1000 liters of water, therefore, becomes obviously essential to control weeds. These herbicides should be applied before emergence of sorghum seedlings.

### **Irrigation:**

Sorghum is a fairly drought resistant crop and it does very well in areas receiving 50 cm well distributed rainfall but it cannot withstand waterlogging at any stage of crop growth. The most critical growth stages for irrigation are knee-height stage, flowering and grain filling stages at which the crop should be ensured for proper moisture conditions so that the crop does not suffer from moisture stress. Contrary to this in kharif crop an efficient drainage must be provided as the crop cannot tolerate water accumulation for more than few hours, therefore, in low lying areas sowing of crop on 5-7cm high ridges or sowing in flat beds followed by light earthing is a remedy for stagnant water in the field.

### **Harvesting and threshing:**

#### **a) Harvesting**

The high yielding varieties mature in about 100-120 days duration after which they are harvested. Generally two methods of harvesting i.e. either stalk-cut or cutting of



earheads by sickles are employed. However, in foreign countries sorghum harvesters are used. In case of stock cut method the plants are cut from near the ground level, the stalks are tied into bundles of convenient removed from plants, while in later case the earheads, after their removal from the standing crop, are piled up on the threshing floor and after few days they are threshed. Threshing of earheds is done either by beating them with sticks or by trampling them under bullock's feet. Later method is quicker and is practiced by majority of farmers who use to grow the crop on larger scale.

### **b) Yield**

The grain yield of improved varieties under assured water supply ranges between 25-35 quintals/ha and that of hay or karvi between 150-170 quintals/ha.

### **c) Storage**

the harvested grains are sun-dried and storage is conventional.

### **Intervention by KVK, Baramati under project .**

Rainfall in the area was 350-400 mm. rabi sorghum is a major crop in the area but because of moisture streses and local variety yield was very less and local variety Hence KVK Baramati Demonstrted the rabi sorghum with improved varieteis according to soil type

Sr. No.	Name of Activity	No. of farmers	No. of Villages	Total Covered Area	Yield and gross income
1	In-Situ Soil Moisture Conservation for Rabbi Sorghum	30	03	30 Acre	2.6 Qt /Acre Rs.11700/-



Agricultural  
Development Trust  
Baramati

अग्रीकल्चरल डेव्हलपमेंट ट्रस्ट, संचालित  
कृषी विज्ञान केंद्र, बारामती व टेस्टी बाईट फाउंडेशन

यांच्या संयुक्त विद्यमाने



TASTE  
Foundation

## एकात्मिक शेती व्यवस्थापन प्रकल्पा अंतर्गत

### मुलस्थानी जलसंधारण व रब्बी ज्वारीचे लागवड तंत्रज्ञान





**मुलस्थानी जलसंधारणाचे महत्व**

- हे तंत्रज्ञान महात्मा फुले कृषि विद्यापीठ, राहुरी येथे विकसित केले आहे.
- शेतामध्ये समान १०x१० मिटरचे वाफे तयार केले जातात त्यामुळे पडणाऱ्या पावसाचे पाणी जगवेक मुरते.
- मातीची धूप थांबविली जाते. आणि वाफसा सगळीकडे समान येतो.
- ज्वारीच्या संवेदनशिल अवस्थेमध्ये पाण्याचा ताण पडत नाही व हे पीक ताण सहन करते त्यामुळे ज्वारीचे शाखवत उत्पादन मिळते.
- पाणी जमिनीमध्ये एक सारखे मुरल्यामुळे भुगर्भीत पाण्याची पातळी होते मात्र त्यासाठी सामुहिक प्रयत्न झाले पाहिजेत.
- ज्वारी विद्यालया अॅझोटोबॅक्टेर व पी.एस.बी. ची विज प्रक्रिया करावी.
- पेरणीचे अंतर :- ४५ सें.मी. X १५ सें.मी. अंतरावर पांभरीच्या सहाय्याने करावे.पेरणीच्या वेळी फिफारसी प्रमाणे मात्रा १००:५०:५० नत्र, स्फुरद, पालाच खतमात्रा वापरावी.
- सुधारीत ज्वारीच्या वाणाला जमिनीच्या प्रकारा प्रमाणे वापर करावा.

**अ) हलकी जमिनीकरीता (खोली ३० सें.मी. पर्यंत) - फुले अनुराधा, फुले माऊली**  
**ब) मध्यम जमिनीकरीता (खोली ६० सें.मी. पर्यंत) - फुले सुचित्रा, परभणी मोती, मालवाडी ३५-१, फुले चित्रा**  
**क) भारी जमिनीकरीता (खोली ६० सें.मी. पेक्षा जास्त)**

**१) सुधारीत वाण - फुले वसुधा, फुले यशोधा, सी.एस.बी.-२१ २) संकरीत वाण - सी.एस.एच.-१५, सी.एच.-११**  
**ड) बागायती जमिन - फुले रेवती, फुले वसुधा**

## In-Situ Soil Moisture Conservation for Rabbi Sorghum Technology

Under the project, farmers were guided by expert Dr. UlhasSurve of Mahatma Phule Agricultural University, Rahuri University and Dr. Ratan Jadhav of ADT,s Krishi Vigyan Kendra, Baramati on the In-Situ Soil Moisture Conservation for rabbi Sorghum technology, sorghum during the rabi season to get more production with less water. And variety PhuleVasudha for heavy Soil and Phule Suchitra for light Soil developed by Mahatma Phule Krishi Vidyapeeth Rahuri and Bio fertilizers for seedtreatment were given to 30 farmers for sorghum cultivation on 30 acres area. Demonstration of cultivation and water conservation at the site was shown on the farm of Mr. Dilip Jagtap of Deulgaon Gada and Mr.AnandaParvati Chaudhary of Khor.





**Sorghum seeds and Bio fertilizer inputs giving for Rabi sorghum to 30 farmers Project under.**



**In-situ Soil Moisture Conservation for Rabi Sorghum Cultivation  
(Demonstration was done on the farm plot of Mr. Dilip Nana Jagtap at DeulgaonGada.)**



**Demo.Plot Rabi Sorghum at-Khor**



**Demo. Plot Rabi Sorghum at-Deulgaon**



**Result:-**Due to the adoption of techniques of In-situ Soil Moisture Conservation for Rabi Sorghum Cultivation Technology, the farmer got an average yield of 2.6 quintals of sorghum in 1 acre in 4 months and the average market price of Jowar is Rs.4500/-.

# दैनिक राष्ट्रसह्याद्री

राष्ट्रसह्याद्री 13 Sep 2021 - 13 Sep 2021 - Page 6

## एकात्मिक शेती व्यवस्थापन प्रकल्पांतर्गत 'मूलस्थानी जलसंधारण' कार्यशाळा

प्रतिनिधी । राष्ट्रसह्याद्री

**बारामती :** ग्रीकल्चरल डेव्हलपमेंट ट्रस्ट, संचलित कृषि विज्ञान केंद्र, बारामती. व टेस्टी बाईट फौंडेशन, पुणे यांच्या संयुक्त विद्यमाने आयोजित दौंड तालुक्यातील देऊळगाव येथे (दि:११) रोजी 'एकात्मिक शेती व्यवस्थापन' या प्रकल्पा अंतर्गत 'मूलस्थानी जलसंधारण' हा कार्यक्रम आयोजित करण्यात आला होता.

या कार्यक्रमा वेळी कृषि विज्ञान केंद्र, बारामती.चे प्रमुख डॉ. रतन जाधव यांनी 'मूलस्थानी जलसंधारण व रब्बी ज्वारीसाठी पंचसूत्री लागवड तंत्रज्ञान या विषयी महिती देण्यात आली. आणि भाऊसाहेब जगताप यांच्या प्लॉट वर १०१० मिटर चे गादी वाफे तयार करून मूलस्थानी जलसंधारणाचे प्रात्यक्षिक दाखवण्यात आले. तसेच मूरघास तंत्रज्ञान या विषयावर मार्गदर्शन करण्यात आले. त्याच बरोबर रब्बी ज्वारीचे पंचसूत्री लागवड तंत्रज्ञान' व जमीनीच्या प्रकार नुसार महात्मा फुले कृषी विद्यापीठ राहुरी यांनी रब्बी हंगामास शिफारस केलेल्या ज्वारीच्या जिरायत जमीनी साठी 'फुले अनुराधा' वाण आणि मध्यम जमिनी



साठी 'फुले सुचित्रा' या वाण विषयी मार्गदर्शन केले व या वानांचे बियाणे पुरवठा प्रात्यक्षिका साठी करण्यात आला. या कार्यक्रम करिता देऊळगाव गावा मधील महिला शेतकरी तसेच पुरुष शेतकरी बांधव एकूण ४२ शेतकरी उपस्थित होते. व देऊळगाव चे सरपंच विशाल बारवकर व ग्रामपंचायत सदस्य राजवर्धन जगताप, भाऊसाहेब शितोळे व अक्षय बारवकर उपस्थित होते. या कार्यक्रमाची प्रस्तावना भाऊसाहेब शितोळे यांनी केली व आभार राजवर्धन जगताप यांनी मानले.

**News of the program aired on 13th September**



## Name of the – Brinjal      Variety - Gaurav



### **Health Benefits of Eating Brinjal:-**

- Since eggplant is very low in calories, one cup of cooked eggplant provides you with 35 calories. It is also beneficial for health as it is rich in water.
- Eggplant controls appetite. Because brinjal contains a lot of fiber and seeds, it keeps the stomach full for a long time.
- Eggplant is rich in iron and calcium which is very important for curing anemia and also for bone health.
- Eggplant is also effective in controlling and managing diabetes. This helps with high fiber and low carb.
- Eggplant is rich in iron so it is useful if your body is lacking blood or suffering from diseases like anemia. Also eggplant is rich in calcium which makes your bones strong.
- The fiber and antioxidant properties of eggplant help protect you from cancer. Also, those who want to lose weight must eat brinjal because it is high in fiber and low in calories

### **Grafted Brinjal Cultivation Technology:-**

- Improved Varieties: Gaurav, Manjari Gota, PhuleHatti, Krishna, PhuleArjuna.
- Planting Time : Summer February
- Planting Spacing : Kharif - 90 X 90 cm. Summer – Summer 120 X 90 cm.
- Quantity of Fertilizers : 150 : 75 : 75 Nitrogen : Phosphorus : Palash kg/ha
- Inter-cultivation : Regular hoofing at 15 to 20 days interval, 1 month after planting, top dressing should be given, trees should be burred.
- Integrated Nutrient Management: A)Organic fertilizers: 20 to 25 carts of cow dung / hectare B) Bacterial fertilizers: Apply phosphorus solubilizing bacteria 25 g/kg seed
- Fertilizer Management:1)Organic fertilizers should be applied 15 days before planting 2)Chemical fertilizers 100 : 50:50 Nitrogen : Phosphorus : Palash kg / hectare 1 half Natra 1 full Phosphorus and Palash should be given in the sowing box and the remaining 50 kg Natra should be divided into 2 equal installments and given after 30 to 45 days. 3)Bacterial fertilizers should be applied to the seeds before sowing.4)The seeds should be treated with Trichoderma at the rate of 5 grams per kg
- **Pests and diseases:** 1) Dimethate 30 EC 20 ml for control of scab, mold, dryness 2) White fly; Quinolphos 25 E.C. 20 ml Fenpropasrin 30 EC 5 ml 3) Chili: If aphids are found on eggplant, spray Fenpropasrin 30 EC 5 ml or Dicofol 20 ml in 10 liters of water.4Death disease: This disease is caused by Fusarium fungus from the soil. The lower leaves turn yellow and fall off and the growth of diseased plants is stunted. Crop rotation, use of healthy plant seeds, and planting of resistant cultivars are recommended as the disease is caused by soil-borne fungi.
- Yield: A) Improved varieties -250 to 300 quintals/ha B) Hybrids -400 to 500 kg/ha.

Sr. No.	Name of Activity	No. of farmers	No. of Villages	Total Covered Area	Yield and income
1	Grafted Vegetable of Seedlong Technology (Brinjal)	20	02	10 Acre	2793Kg / 1/2Acre Brinjal Rs.57256/-





**For grafting brinjal technology, 20 farmers were given seedlings and required inputs of biological fertilizers and medicines.**



**Grafted Eggplant Technology Demonstration Plot**





**The experts of Krishi Vigyan Kendra, Baramati guided the farmers for pest and disease control by visiting Grafted eggplant technology demonstration plots.**



**Several officials from Krishi Vigyan Kendra, Baramati and Tasty Bite Foundation visited Grafted Eggplant Technology Demonstration Plot.**





**By using this grafting technique, it was seen that the farmer's income increased.**

Results :- Grafted brinjal plants were given to 20 farmers of Deulgaon Gada and Khor villages along with biological fertilizers and medicines to double the economic income of the farmers for 0.5 acre area of each farmer. Toatl Nearly 10 acres were cultivated. Due to the adoption of this technique, each farmer got an average yield of 2793 kg of Brinjal in 6 months in 0.5 acre area and the Brinjal got an average market price of Rs.20.50.per kg

## Onion Seed Production Technology

### Variety – Bhima Shakti & BhimaKiran



#### Health Benefits of Eating Onion:-

##### 1. Onion helps in improving heart health

Onions are a rich source of flavonoids and thiosulfinates. What do these do exactly? Well, the flavonoids in [onion](#) help in reducing bad cholesterol in your body and thiosulfinates are known to keep the consistency of the blood right, much like a blood thinner. Due to this, the risk of heart attack and stroke reduces by many folds. A report by the Cambridge University Press also says that the flavonoids present in red onions help lower the levels of LDL or bad cholesterol.

##### 2. It can give you healthy bones

According to the U.S. Department of Agriculture (USDA), just one onion contains 25.3 mg of calcium. Calcium equals strong bones, so adding this veggie to your salad can build you build better bone health.

##### 3. It improves immunity

everything revolves around immunity these days. The antioxidants present in [onions](#) can help you strengthen that too. According to a study published in the journal of Mediators of Inflammation, onion's chemical composition is so strong that it helps in immune enhancement and has anti-cancer properties too. Now that's huge

##### 4. It is great for those with respiratory problems

Onion is an anti-allergen and in most cases, allergies play a major role in giving us respiratory problems. According to a study published in the journal, *DARU Journal of Pharmaceutical Sciences*, eating [onion](#) has a relaxing effect on the muscles of the isolated trachea which helps the patients of asthma breathe easily. This happens due to the presence of flavonoids.



## **5. Onions can give you good vision**

Conjunctivitis during this time of the year is very common. The selenium in onion helps in the production of vitamin E, which in turn keeps this painful eye problem at bay. In fact, some natural eye drops also contain extracts of onion juice.

## **6. It can improve your oral health too**

Who would have thought right? Many of us avoid eating [onions](#) because of the bad breath it leaves us with. But turns out, this bulb is good oral hygiene, thanks to its vitamin C content.

## **7. It improves sexual health**

In case your partner is dealing with erectile dysfunction then make him eat onions because according to a study published in the journal *Biomolecules*, it can help in correcting that. The study also says that it also helps in increasing the level of testosterone in men.

## **8. It can give you glowing and ageless skin**

Onions are packed with vitamin A, C, and K—and you need all of them for flawless skin. These vitamins not just help you get rid of pigmentation but protect you from harmful UV rays as well. Do you know that you can add a hint of onion juice in your face pack and apply it for supple and acne free skin?

## **9. It can bestow you with healthy hair**

Although there is not much scientific evidence to prove this, many Ayurvedic hair products use onion juice for hair growth. Also, due to its antibacterial properties, [onion](#) helps in keeping dandruff and lice away from your scalp.

## **10. Helps in easing menopause symptoms**

According to a study published in the *Journal of Breast Cancer*, consuming raw [onion](#) helps in easing postmenopausal symptoms due to the presence of calcium.

## **Onion seed production information:-**

- **Selection of onions for seed production:** Onions used for seed should be stored in a dry and clean place immediately after harvesting. During storage, care should be taken not to increase humidity and not to come in contact with water. Hexaconozyl powder should be used on onions during storage. This can control onion rot. - Also in the storage tank, sulfur should be sprinkled on top. Always use round, medium sized onions for seed production. Don't use onions that are rotten. Onions used for seeds, diseases, insects etc. Want to be free from.

- **Time of planting: Octomber to November**
- **Pre-cultivation:**Deep plowing of the land should be done immediately after harvesting of kharif crop. And let the field dry for a few days. After that the soil should be pulverized by giving two layers of kulwa. 8 to 10 tons of well rotted cow dung per acre should be added between two plowings. After that two feet beds should be made in the horizontal direction of the slope. Also the distance between two beds should also be kept two feet.
- **Seeding process** :First of all, the cuttings in the storage should be taken out and selected. The damaged onions should be taken out immediately and thrown away. After that, cut the onion horizontally by keeping more of the adhyamiksha. Then take a bucket of water and mix copper osiloride-dimethoate or carbendazim + dimethoate and dip the cut onions in it for two minutes and dry it well in the shade.
- **Important points:**After 15 to 20 days after planting, 5-6 yellow or blue sticky traps per acre should be applied. Due to this, maggots, thrips, mealybugs, whiteflies etc. are eliminated from the sap-sucking insects. After flowering (20-30% flowers) spray jaggery water. Also, small pieces of bags soaked in honey water should be tied to the bamboo at various places in the field, this increases the number of bees and consequently the yield also increases.
- **Intercropping and fertilizer management:**The crop should be kept free from weeds until the crop is ready. Hand-kneading should be done if possible for weed control, but if the weed gets out of hand, Oxyfluorophene herbicide should be sprayed. can200 kg per acre should be applied on 10:26:26 beds at the time of planting. After about 50 to 60 days apply 100 kg 24:24:00, 50 kg urea per acre. After application of fertilizers, soil should be applied to the roots/stems of the plants with the help of laborers
- **Water management:-** With the help of drip irrigation, according to the type of your soil, give enough water to remain moderately wet. Water stress should also be given for a few days, but after flowering, it is necessary to give water only in quantity. If there is too much water, there is an infestation of fungi, and the germination capacity of the seeds produced in less water is less.
- **Harvesting:**Generally the seed matures in 110 to 130 days depending on the variety. Harvesting should be done in 3 to 4 harvests. While harvesting, only
- mature flowers should be removed. After harvesting, dry the flowers in the light



sun and according to the size of your area, loosen the seeds with the help of a machine or a stick and blow them and keep them in a clean and dry bag. A plastic bag must be placed inside while filling the sack, this reduces the incidence of insects during storage

- **Yield:** Onion seed production varies according to climate and soil, with proper and good care, 4 to 6 quintal seeds can be produced per acre.



**Onion Seed Production Technology Demonstration Plot Deulgaon Gada  
Mr. Kantilal Shitole**



**Onion Seed Production Technology Demonstration Plot Khor  
Mr. Sameer Dombe**





**Onion Seed Production Technology Demonstration Plot Deulgaon Gada  
Mr. Vilas Shitole**

Sr. No.	Name of Activity	No. of farmers	No. of Villages	Total Covered Area	Seed yield and income
1	Onion Seed Production Technology	21	03	05 Acre	9 Kg /4R Rs.13500/-

**Results :-**In order to increase the income of the farmers and to provide good quality seeds to other farmers, under the project, 22 farmers of three villages were selected given onion seeds of two varieties namely Bhima Shakti and Bhima Kiran along with the required biological fertilizers and medicines. Total Seed production was done on 5 acres areas . Due to the adoption of this technique, each farmer got 8 to 9 kg of onion seed yield in an average 4 R Area and onion seed got an average market price of Rs.1500/- .The seed of improved variety of onion now available for farmers in the area.



## Demonstration on Cultivation technology of Chilli and Tomato



**Chilli (Ak89)**



**Tomato (Syngenta 6282)**

### Importance of chili in daily diet:-

- **Benefits of green chillies:** Delicious and spicy food cannot be prepared without green chillies. Specially, green chili not only enhances the taste of food but is also beneficial for health. We see that people often avoid eating green chilies, but we know that it is useful in treating many diseases. Health experts say it works from weight loss to boosting blood circulation.
- **Amazing benefits of green chillies:-**There are many elements in green chillies, which are very important for a healthy body. It is rich in vitamin A, B6, C, iron, copper, potassium, protein and carbohydrates. Not only that, beta carotene, cryptoxanthin, lutein-zeaxanthin etc. are healthy ones.
- **Stimulates blood circulation:-**Nutritionist Dr Ranjana Singh says that green chillies contain an ingredient called capsaicin, which makes them spicy. Consuming chilies purifies the blood and accelerates the blood flow in the veins, thus eliminating the problem of pimples on the face.
- **Increases immunity:-**In the time of Corona, there is an emphasis on eating green chillies. Green chillies can be consumed to strengthen the immune system. Green chillies have anti-bacterial properties, which help keep the body free from bacteria. Green chilies can help boost the immune system.
- **Mood booster:** -Green chili also works as a mood booster. It releases endorphins in the brain, which keep our mood largely upbeat.
- **Beneficial for eyes:** - Consuming green chillies can be beneficial to improve eye sight. Because vitamin A is found in it, which helps to improve eyesight.

- **Loses weight:-**Green chillies are useful for weight loss. Apart from being rich in antioxidant properties, it has no calories. Green chillies are also considered good for metabolism.
- **Brightens the face:** -Green chillies help to brighten the face. It is rich in vitamin E and vitamin C, which can help keep your skin healthy
- **Chilli production information:-**
- **Improved Varieties :-** AK47, PhuleJyola, Nandita
- **Planting season Kharif :-** June – July
- **Seed rate:** - 1.9 to 1.25 kg per hectare. Seedlings should be prepared in nursery (40 to 45 days).
- **Side to Side Distance:** - Actual: 60 x 45 cm.
- **Amount of Fertilizers :-** 100:50:50 Nitrogen:Phosphorus:Palash kg per hectare
- **Inter-cultivation:-** Regular weeding at intervals of 15 to 20 days, application of fertilizer after 30 to 45 days after planting.
- **Integrated nutrient management:-** A) **Organic fertilizers:**20 to 25 tonnes of manure/ha B) **Bacterial fertilizers :-** Phosphorus reducing bacteria should be applied at the rate of 25 gram/kg of seed
- **Fertilizer timing:**1) Apply organic fertilizers 15 days before planting.2) Chemical Fertilizers 100:50:50 kg Nitrogen : Phosphorus : Palash /Ha katsar, half of Nitrogen, whole Phosphorus and Palash should be given at the time of planting and the remaining 50 kg should be divided into 2 equal installments and applied after 30 and 45 days. 3) Bacterial fertilizers should be applied to the seeds before sowing 4) The seeds should be treated with trichoderma at the rate of 5 grams per kg.
- **Inter-cultivation :-** Regular weeding at intervals of 15 to 20 days, emphasis should be placed on flowering trees. That means the trees will not collapse.
- **Yield :-** Green Chilli – 150 to 200 quintals per hectare  
Red Chilli – 15 to 20 quintals per hectare





**Improved Chili Cultivation Technology Demonstration Plot Deulgaon Gada  
Mrs. Swati Barwakar**



**Improved Chili Cultivation Technology Demonstration Plot KhorShri.BalasoDombe**

- Importance of tomato in daily diet :-



Tomatoes are the primary dietary source of lycopene, which is an antioxidant associated with various health benefits. This reduces the risk of heart disease and cancer. Tomatoes are rich in vitamin C, potassium, folate and vitamin K.

Lycopene is an antioxidant that fights free radicals, which can damage our cells and weaken our immune system. As a result, including foods high in lycopene, such as tomatoes, may reduce the risk of lung, stomach, or prostate cancer.

Lycopene can help lower LDL or "bad" cholesterol, as well as blood pressure. As a result, the risk of heart disease can be reduced.

**Climate** :-Though tomato crop occurs throughout the year, considering the temperature of the climate, there is definitely a difference in the production after the crop is harvested, seed germination as well as plant growth are best at 16 degree to 29 degree centigrade. A temperature of 18 degrees to 32 degrees C. Grey is very useful for fruiting. If the temperature goes above 32 degrees C. Grey, fruiting is adversely affected.

#### **Tomato production information:-**

- **Soil** :-Soil :-Light to heavy -Generally light loamy soils produce early crops and heavy soils produce late crops. In the land in which tomato crop is to be grown, brinjal and chilli crops should not be grown first, because of this there is more incidence of pests and diseases.
- **Improved Varieties** :- Phule Raja, Dhanashree, Bhagyashree, PhuleKeshari, PhuleJayashree,  
**Planting Season Kharif** :-Kharif – May to June, Rabi – September to October and Summer – January to February
- **Planting Season Kharif** :- Kharif – May to June, Rabi – September to October and Summer – January to February
- **Spacing** :-75 to 90 cm for short to medium spreading varieties. Planting should be done 30 to 40 cm above the rain. 90 cm for tall growing and spreading varieties. I. It should be planted at 30 cm from the rain.
- **Quantity of Fertilizers** :-While preparing the area for planting, well decomposed cow dung should be mixed in 20 tonnes per hectare of field.



Chemical fertilizer should be 200 kg of nitrogen, 100 kg of phosphorous and 100 kg of palash for straight variety and 300 : 150 : 150 kg of nitrogen : phosphorous : palash per hectare. Half of those chemical fertilizers should be applied with nitrogen and complete phosphorous and palash before planting.

- **Intercultivation and Water Planning :-**Tomato crop should be given 3 to 4 sprays to keep the field free from weeds, during rabi season, water should be given after 8 to 10 days. In summer season, water should be given after 6 to 8 days. Even if there is a dispute, water should be used properly.
- **Harvesting of fruits:** After 60 to 75 days of planting tomatoes, the fruits are ready for harvesting depending on the variety.
- **Yield :- Hybrid –55 to 60t/ha and straight -30 to 40t/ha**



**Improved Tomato Cultivation Technology Demonstration Plot Deulgaon  
Gada Mrs. Rupali Jagtap**



**Improved Tomato Cultivation Technology Demonstration Plot DeulgaonGada**  
**Mrs. Shobha Mane**

**Results :-** In order to increase the income of the farmers, under this project, 67 farmers of three villages were given Seedling of chilli AK47 variety and 18 farmers of Syngenta 6242 variety of tomato were given. And the average income per farmer is as follows

**Chilli :-** Average yield per farmer – 30 to 32 quintals/acre

**Tomato: -** Average yield per farmer – 170to 180quintals/acre

The use of this technology also helped to increase the economic income of the farmers.



## **Demonstration on Grafted Custard Apple**

### **Variety – Hyderabad Selection**



#### **Importance of Custard apple in daily diet:-**

Custardapples contain anti-oxidants like Vitamin C, which helps to fight free radicalism our body. It is also high in potassium and magnesium that protects our heartfrom cardiac disease.

Not only that, it also controls ourblood pressure. Custard apples contain Vitamin A, which keeps your skin and hair healthy. This fruit is also known to be great for eyes, and cures indigestion problems. It's important to include this fruit in your diet, as the copper content helps to cure constipation, and helps to treat diarrheaaand dysentery.

As they are high in magnesium, they equalize the waterbalance in our body, which helps in removing acids from the joints and reducesthe symptoms of rheumatism and arthritis. If you feel tired and weak more oftenthان usual, then have this fruit in your daily diet, as the potassium present init will help to fight muscle weakness.

It is also good for peoplesuffering from anaemia, as it this fruit are high in calorie. And if you want toput on some weight, include this in your daily diet chart. Custard applecontains natural sugar, and hence makes great nutritious snacks and even desserts

#### **Other health benefits of Custard Apple**

the fruit is an excellent source of vitamin B6, a nutrient which plays an essential role in the creation of neurotransmitters, including serotonin and dopamine. Taking an adequate amount of this nutrient can help to regulate your mood and reduce the risk of depression.

Custard Apple contains compounds like catechin, epicatechin, and epigallocatechin. Some of these are known to prevent the growth of cancer cells.

Loaded with Vitamin C, the fruit can boost immunity by fighting foreign pathogens that enter the body.

Custard Apple also helps to reduce inflammation in the body. It contains several anti-inflammatory compounds, which have shown to reduce inflammatory proteins in animal studies.

### **Nutrients:**

#### **160 grams of Custard Apple contains:**

Calories: 120 K

Protein: 2.51 grams

Carbohydrate: 28.34 grams

Calcium: 16 mg

Iron: 0.43 mg

Magnesium: 27 mg

Phosphorus: 42 mg

Potassium: 459 mg

Zinc: 0.26 mg

### **Information on Sitafal cultivation and yield:-**

- **Soil :-**Light to medium
- **Varieties :-** Hyderabad Selection, Balanagar, ArkaSahan (Hybrid), PhulePurandar, PhuleJanaki
- **Planting Spacing :-** 5.0 x 5.0 m
- **Fertilizers:-**Before applying 30 to 40 kg of cow dung, chemical fertilizers to a fully grown tree, soil should be tested. is essential. According to the soil test report, application of chemical fertilizers helps in saving fertilizer and maintaining proper soil health. Nutra250 grams, Phosphorus 125 grams and Palash125 grams per tree per year. Otherwise it should be divided into two equal installments. Anzospirillum and PSB with dung. These organic fertilizers should be used.



- **Inter-crops :-** Low growing crops like onion, mung bean, soybean should be taken as inter-crops in two rows in the garden for the first two years after planting the crop.
- **Yield :** 25 to 30 kg / tree (tree above 5 years)
- **Other important points:-** 1) In order to get the fruits of sitafal early (non-seasonal) and to get more marketable price, in the first week of February, after leaf fall, millets should be sown around the trees with light pruning.  
2) Drip irrigation should be adopted for water. 3) Proper water management should be done to prevent cracking of fruits during fruit growth. 4) Jainic control of pitta dekhakan on Custard apple.



**Custard apple Cultivation Demonstration Plot Deulgaon Gada**

**Mr. Sahebrao More**

**Results :-** Due to continuous water scarcity in the villages of Khor and Deulgaon Gada, under this project, 10 farmers of Hyderabad selection variety of grafted sital fruit were given seedlings for 0.5 acre demonstration plots for the cultivation of low water fruit crop Custard apple and large scale planting was done at Deulgaon gada..



**Importance of gram in daily diet:-** Chickpeas, also known as garbanzo beans, have been grown and eaten in Middle Eastern countries for thousands of years.

Their nutty taste and grainy texture pair well with many other foods and ingredients.

As a rich source of vitamins, minerals, and fiber, chickpeas may offer a variety of health benefits, such as aiding weight management, improving digestion, and reducing your risk of disease.

Additionally, this legume is high in protein and makes an excellent replacement for meat in many vegetarian and vegan dishes

### **Gram Cultivation Technology:-**

**Land :-**Medium to black firm and well-drained soil should be selected for the crop, light or coarse, watery, chalky or saline soil should not be selected for gram. Soil ratio should be 5.5 to 8.6.

**pre-cultivation :-** Deep plowing should be done after the kharif crop has emerged. Two layers of kulwa should be given. The land should be cleaned by removing the garbage. If dung is not given in kharif, five tonnes of well-rotted dung should be mixed with the soil per hectare. In this way, the field should be ready for sowing by the end of September

Sowing time

As gram is a Rabi season crop, dry and cool air is good for it. In dryland areas, sowing should be done after 25th September before the soil moisture is blown away.



For this purpose, the variety Vijay should be used. Horticultural gram sowing between 20th October to 10th November gives good yield.

**Seed treatment :-** Before sowing, 2 gm of thiram + 2 gm of Bavistein or 5 gm of Trichoderma and 25 gm of Rhizobium and PSB mixed with cold solution of jaggery should be applied per kg of seed.

**Fertilizer :-** Harbhaya requires 25 kg of nitrogen and 50 kg of phosphorus per hectare. 2 percent urea should be sprayed in the gap filling stage.

**Intercropping :-** For vigorous growth of the crop, the field should be kept weed free from the beginning. First crop should be done after 20 days of crop and second crop should be done after one month. Cattle should be returned if possible. A weeding should be done after harvesting. If pre-emergence herbicide is to be used, Pendimethylene 5 liters (Stomp 30 EC) or Anlachlor (Lasso 50 EC) 3 liters for one hectare area mixed with 500 liters of water should be sprayed before the sprouts emerge from the soil surface.

**Water Management :-** Gram crop is a very water sensitive crop. Gram crop generally requires 25 cm of water. Give a light watering after sowing. So the germination is good. Apply after about 25 to 30 days in medium soil. Second watering after 45-50 days and third watering after 65-70 days if required. Water should be given as per soil condition and requirement.

**Crop protection :-** 30 to 40 percent loss of gram crop is due to grubs. When the crop is 3 weeks old, fine larvae appear on it. White spots appear on the leaves and the tips are eaten. At this time take a spray of 5 percent solution of lemon. This reduces the appetite of the worm. And they die. Next, after 10 to 15 days, Heliokill 500 ml per hectare should be sprayed as a viral insecticide. Control of this pest is best done by integrated method. For this, 200 grams of sorghum, 100 grams of mustard and 2 kg of coriander should be sown in the field at the time of sowing. It is used to attract the friendly insects of these crops thus controlling the caterpillars. Tu-Yataya should be arranged at the place where the parties can sit. Birds such as sparrows, sparrows and sparrows come on it and pick the larvae. 5 ha should be set with pheromone traps.

**Harvesting :-** The crop is well prepared in 100 to 110 days. Do not harvest when the crop is wet. Harbha should be harvested and threshed only after the grains are dry.

After this, the grain should be heated for 5-6 days. Gram should be stored in a closet. Add neem leaves (5 percent) to it. So there is no pest in storage.

**Yield:-** On an average, 25 to 30 quintals per hectare can be obtained by cultivating gram in this way.



**Gram Cultivation Technology Cultivation Demonstration Plot**

Sr. No.	Name of Activity	No. of farmers	No. of Villages	Total Covered Area	Yield Income
1	Demonstration on Gram	22	03	11 Acre	1.32 Qt /1/2 Acre Rs.5544/-

**Results :-**In order to increase the income of the farmers, for gram cultivation technology, 22 farmers in the villages of Khor, Deulgaon Gada and Padvi were given good quality Seed of Phule Vikram gram seed inputs for 0.5 acre and Total 11 acres were areas Covered. Due to the adoption of this technique, each farmer got an average yield of 1.32 quintals of gram in 0.5 acre and the farmers got an average market price of Rs.4200 per quintal.



## Demonstration on Use of Micronutrients in fig Production technology



### Health Benefits :-

One reason many healthy eating websites feature food with figs is that figs satisfy sweet cravings while also providing many important health benefits. In fact, even if you're not looking to satiate a sweet tooth, you may benefit from adding figs to your diet. Here are some of the health benefits you can expect to enjoy when you eat figs.

#### Reduce **High Blood Pressure**

High blood pressure, also known as hypertension, can lead to complications like [heart disease](#) and [stroke](#). One factor that leads to high blood pressure is a potassium imbalance caused by eating too much sodium and not enough potassium.

Figs are a potassium-rich food and can help correct that imbalance. Meanwhile, high levels of fiber in figs can help to flush excess sodium from the system.

#### Improve **Digestion**

Digestive issues range from [constipation](#) to [diarrhea](#). At both ends of the spectrum, increasing fiber intake can help. In addition to their high fiber content, however, figs aid digestion in another way. They are an excellent source of [prebiotics](#), which improve overall gut health.

#### Increase **Bone Density**

Figs are a good source of both [calcium](#) and [potassium](#). These minerals can work together to improve bone density, which can, in turn, prevent conditions like [osteoporosis](#).

Studies suggest that a potassium-rich diet, in particular, can improve bone health and reduce bone turnover. Meanwhile, calcium is a key structural component of bones, and increasing calcium intake has been shown to improve bone mineral structure in children and adolescents.

#### **Nutrition**

One major benefit of figs is that they are a naturally fat-free, cholesterol-free food. They are also an excellent source of:

- Vitamin A
- Vitamin C
- Calcium
- Iron
- Potassium
- Magnesium

### **Nutrients per Serving**

One medium (2 ¼ inch) fig contains:

- Calories: 37
- Fat: 0 grams
- Cholesterol: 0 milligrams
- Sodium: 1 milligram
- Carbohydrates: 10 grams
- Fiber: 1 gram
- Sugar: 8 grams
- Protein: 0 grams

### **Portion Sizes**

Although figs are healthy in moderation, it's important to keep in mind that a serving size is one medium fig. The sugars in figs can add up quickly if you eat figs by the fistful, and many of the recipes you'll see online call for large numbers of figs. Always be mindful of the amount of figs in the foods you eat and limit yourself to keep your overall sugar intake low.

### **How to Prepare Figs**

Figs can easily be eaten fresh as a snack, or halved and tossed into a salad or sandwich for added crunch and flavor. However, there are also a number of tasty ways to bake using figs as a sweetener.

One option is to cut figs up small and mix them into dough the way you might mix in raisins. Prepared like this, figs go great in breads, cookies, and muffins.

Fig bars can be made by cooking chopped figs over medium heat until they are soft and moist. Then, they can be pressed into a pan with other ingredients.

Another option is to cut your figs lengthwise, season with honey and cinnamon, and roast them in the oven for 40 minutes to make a sweet dessert or delicious side dish





**A fig production training program was conducted for fig growers.**



**Fig farmers were guided on micronutrient factors to increase fig yield. And Dr. Lakhan Singh, director of Atari, was given the micronutrient composition.**



### **Use of micronutrients in fig production technology**

Seeing that there was a decrease in the fig yield of the farmers due to the scarcity of water in Khor village and due to the increasing incidence of diseases and pests as well as the lack of information about new technology, 32 fig farmers were trained in fig production under the project and according to the report of the soil testing of the farmers' fields, 32 farmers were given micronutrients. It was given by Director Dr. Lakhan Singh, ICAR, ATARI, PUNE. Due to the adoption of this technology, the anthracnose disease on fig trees was reduced and red spot on leaves disappeared and the disease resistance of the trees also increased and the fig production of the farmer increased by 12 to 15 percent and this helped to increase the income of the farmers.



## Organic vegetable management in Back yard



Organic fertilizers should be used instead of chemical fertilizers for gardens. While preparing the space for the garden, manure, vermicompost, manure, chicken manure, neempala, jute, green manure should be used in it. Nimboli Pend, Karanj Pend should also be used.

### **Dietary importance of leafy vegetables;-**

The components of our diet are starch, nitrogen, fat, salt, vitamins and water. Among them, we get salts and vitamins from fresh vegetables. Salts and vitamins are not only necessary for the growth of our body but also for the nutrition of other components of our diet. Vitamin A is needed for protein digestion, Vitamin B is needed for carbohydrate digestion and Vitamin E is needed for fat digestion. Apart from this, we need to get vitamin D for bone strength, vitamin K to maintain blood density and vitamin C to save all of them from our diet. We can meet the requirement of all these genes in various leafy vegetables.

Regarding this, leafy vegetables are rich in various minerals as well as minerals and enzymes. Another factor that increases the usefulness of leafy vegetables is the chotha they contain. Due to this chotha, dirt does not accumulate in the body. Bowels remain functional. It is also due to this chothya that the necessary organisms in the intestine are bred. Therefore, it becomes easy for the body to digest the various components of the food we eat. Apart from this, it is also possible to throw out foreign substances like bile produced in the intestine. Thus, it is necessary to have various leafy vegetables in our diet regularly.

**The importance of the backyard organic vegetable production for family :**

- Vegetables of choice and fresh vegetables daily.
- Fresh vegetables provide the body with plenty of vitamins and minerals.
- Exchange of backyard vegetables improves relationships.
- Saves money. The sale of remaining vegetables increases the financial income.
- It can be a collective small scale enterprise for women self-help groups.

### **Important considerations while planting:**

- Sewage and household waste should be managed in such a way that proper utilization is achieved.
- The source of waste water should be in place and the vegetable steam should be slightly below. That is, the sewage will flow easily as there is a slope on the side of the steam.
- Firmly compact the soil in the backyard. Make a hole in that soil. To prevent dirt from getting stuck in the shaft, stones or earthen balls should be placed on its sides. That means the water continuously flows to the vegetable steam.
- The backyard should be small, so it is easy to manage.
- Plan in such a way that the garden remains clean.



**A training program was conducted for women farmers to manage toxic free vegetables in the backyard.**





**In three villages namely Khor, Deulgaon Gada and Padvi, vegetable seedlings and biological fertilizers and medicines were given to women farmers for managing toxic free vegetables in their backyards.**



### **Demonstration Plot of Pesticide Free Vegetable Management in Backyard Deulgaon Gada**

Considering the increasing disease outbreak, BJP wants poison-free daily diet in human life, but chemical-free vegetables are available in the market and considering the human harm caused by it, under the project, 150 farmer women in three villages have planted brinjal plants, chilli plants, Drum Stick plants, lemon plants, and tomato plants and Biological fertilizers and medicines required for it were given. And it increased the economic income of women and provided them access to toxin-free home grown vegetables thus helping to improve their health.



# Livestock Intervention





## Backyard Poultry Farming



Poultry or chicken farming is a very promising and widely practiced supplementary agriculture . Just like the goat rearing business, the chicken rearing business can be done in both ways, either free-range or caged. Free range chickens are generally of indigenous breeds, Leaving them free range and puts them at risk from animals like cats or dogs birds like vultures. But Gavran chickens have the ability to protect themselves from them. Therefore, Gavran chickens walk even if they are left free. If ten to twenty chickens are kept around the house in the yard or bak yard, they find and eat their own food. If there is one male for every ten females, the hens will have chicks and continue to breed. White Leghorn or some other new breeds of chickens cannot be raised freely in the back yard . A cage has to be prepared for them. Because these chickens do not have the ability to protect themselves. Hence KVK Baramati has demonstrated Kaveri and Vanraja improved poultry breed a hybrid of english and deshi breed and these looks like Deshi breed and scavenges their feed from back yard .These improved breed chickens has more immunity compare to pure breeds of poultry and produce more eggs ie 160-170 eggs per year /hen . They have to be taken care of vaccination and some medicine for prevention of diseases.

### **Importance of poultry farming:-**

- A subsidiary industry to agriculture is poultry or chicken farming.
- Poultry farming can be done in both free-range or caged systems.
- Free range chickens are generally indigenous breeds, Gavran./Kaveri/Vanraja
- White Leghorn or some other new breeds of chickens cannot be raised freely in Bak yard.
- Eggs from free range hens are in higher demand than cage hens from egg consumers.

- Cages. In the case of laying hens, however, after one generation of chickens, new chicks have to be bought.
- Free range chicken farming is not possible if it is a large scale business.

**Following are the materials required for poultry:-**

- 1) Cages (conventional type or battery type),
- 2) Drinking water pot or nipple,
- 3) Semi-Automatic feeder
4. Vaccinated birds of one month Age
5. Feed for one month
6. Medicine Kit

Hence the Improved Breed of poultry Vanraja & Kaveri were given for Backyard Farming.

Sr. No.	Name of Activity	No. of Women farmers	No. of Villages	Result of per Farmers Income	
1	Back Yard Poultry Farming	280	03	146 eggs / month /family –Rate per eggs –Rs.7/-	7 to 8 month per family income Approximately Rs.24000/-



**Under the project, 280 women farmers were given inputs of birds, food, pots and medicine kits for backyard poultry management.**





Under the project, 280 farmer women were given inputs of birds, food, pots and medicine kits for backyard poultry management.



Under the project, 280 women farmers were trained in backyard poultry management.



**Poultry management in the backyard**





### **Poultry management in the backyard**

**Results:** - Under this project, 280 women were trained in poultry farming and 25 birds per woman, food and medicine were provided to make them self-reliant.

To increase the economic income of 280 women farmers in the three villages of Khor, Deulgaon Gada and Padavi, 25 Kaveri birds, 50 kg of food, utensils and medicine were supplied to each woman. Due to this technology, 146 eggs per month were obtained per female and the price per egg started to from Rs.7 to 8 /- and the sale of males fetched a price of 500 to 600 rupees per male. This helped increase the income of women farmers. Rs.24000/- per woman per annum is getting as a result of adopting this technology so 25 women farmers of the village have again purchased birds for backyard poultry farming..



## Goat Sheep Breeding Business



### Benefits of goat rearing:-

- This business can be done with small investment.
- Some breeds of goats molt twice in 14 months which gives more income.
- Goat has more capacity to give birth to two kids which is beneficial for higher income.
- If money is needed, it can be raised by selling goats.
- Goat is an animal. It has to adapt to adverse weather conditions.
- They can eat even inferior fodder. They convert it into milk and meat.
- Their yield increases quickly as they mature early.
- Being of small size, they require less space for shelter.
- Their faeces are good fertilizers.
- Demand for goat meat is high.
- Their materials are made from horn and hoof.
- Their flesh is tasty.

### Characteristics of Boer Goat :-

- The weight of a small male crane is 3 kg, while the weight of a female crane is 2.5 kg.
- Weight of seven months male was 40 to 50 kg and female was 45 to 50 kg.
- The gestation period of this goat is 148 to 150 days.
- 50 percent goats give two grains.

- Since the growth of these goats is high, they need to be fed according to their weight gain.
- If the management is good, Boer breed Goats provide edible meat up to 50 percent of their live weight.

### **Use of African Boar Males for Breed Improvement to local goats**

Under this project, 2 farmers of villages Khor and DeulgaonGada were given African Boar male for Breeding Purpose so that the farmers can get financial benefit from goat and sheep rearing. 1 African Boer male, 9 Kids were born in 1 year. And an average birth weight of Kids in local Birth Wight 2.5 Kg.



**Use of African Boar Males to Improve Goat Breeding Deulgaon Gada**



**Use of African Boar Males to Improve Goat Breeding Deulgaon Gada**

**It was done here and the hybrid boar pups produced from it.**



## Training on various topics on Livestock



**Goat Sheep Breeding Business Training**



**Dairy Business Management Training**



**Backyard Poultry Management Training**

Farmers and women farmers of three villages namely Khor, DeulgaonGada and Padavi were guided on various topics related to livestock under the project.

# Integrated Farming System Modules (IFS)





## Integrated Farming System Model



### Net Return

**Rs. 4,50,054/-**

- Increases productivity.
- Farmers earn more profit.
- Reduces the cost of farming operations.
- Increases the fertilizer potential of the farm.
- Structures are fully utilized.

- The risk is low
- Employment opportunities are created.

### **How exactly is integrated farming done?**

Farmers are doing integrated farming in a village in Jharkhand's capital Ranchi district. They are cultivating flowers and vegetables along with paddy on five acres of land. Apart from this, fish farming, poultry farming, goat rearing and milk are also being produced here. Farmers here say that they also rent agricultural implements to needy farmers. They also continue to get income from it. According to the farmer, many crops, flowers, vegetables and animal husbandry are being done on the five acres of land.

Moreover, there is no dearth of animal fodder and compost is made from their dung. This reduces the cost of cultivation. Planting of different crops increases the fertility of the field and also increases the yield. Farmers have said that due to the integrated farming system, they get an income of 8 lakh per five acres every year. (Increase in production due to integrated farming system and development of farmer s also)



**The farmers were guided on the topic of integrated farm management.**





**Under the project, women farmers were provided seedlings, organic fertilizers and medicines and African Boar male inputs for integrated farm management.**



**Planting of seedlings of Integrated Farming Management was demonstrated under the project.**

The 11 women farmers selected for the Integrated Farming System (IFS model) under this Kaveri & Vanraja chicken birds, feed, medicine kits as well as Custard Apple seedlings, Drumstick seedlings, African Boar male and goats & was given to improve their production of rain fed Family.

50 birds of Kaveri breed, 50 kg of food, utensils and medicines were supplied to women farmers to increase the income of women farmers through the technology of integrated farming system. This technology resulted in 300 to 315 eggs per month per female And the price of 7 to 8 rupees per egg started getting and 500 to 600 rupees per male was obtained from the sale of males Birds , this helped to increase the financial income of women farmers by Rs. 2520/- month And by adopting this technology, 8 to 10 women farmers bought birds again.

3 farmers of Khor and Deulgaon Gada villages were given African Boar male for breeding purpose in Integrated Farming System technology. 2 African Boer male produced 9 kids in a year an average birth weight of a kids 2.5kg against 2 kg in local breed this will help to growth rate of goats.

Due to the adoption of these various activities, in all the three selected villages, there has been a substantial increase in the income of adopted farmers by 55 to 60 per cent while the income of women has increased by 40 per cent. There is no doubt that the income of the farmers can be doubled if the activities are to be continued in future.

**Thank You ...**