



सत्यमेव जयते

DEPARTMENT OF BIOTECHNOLOGY
GOVERNMENT OF INDIA



भारतभारत
ICAR

DBT Biotech-KISAN Hub

Connecting Science with the Farmers



रा. जे. स्ट्रे. प्र. सं.
NIBSM



**DBT BIOTECH
KISAN HUB**

2024

ICAR
**NATIONAL INSTITUTE OF
BIOTIC STRESS
MANAGEMENT**

Rendering solution to biotic stresses

ICAR-National Institute of Biotic Stress Management

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Linking

available science and technology to the farm



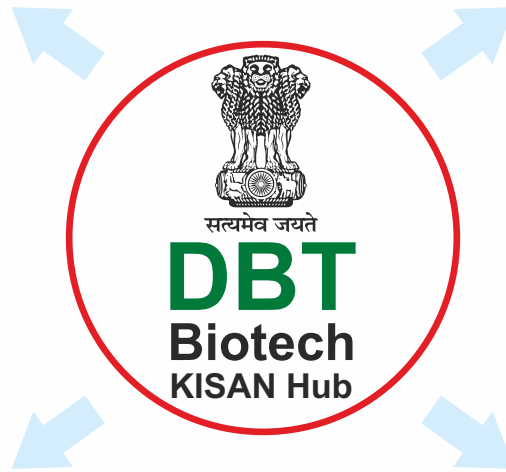
Understanding

the location specific problem of the farmer



Working together

in close conjunction of scientists and farmers



Productivity

through scientific intervention for small and marginal farmers



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KISAN HUB



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NIBSM



इंदिरा गांधी कृषि विश्वविद्यालय, रायपुर
कृषि जीवनस्य आधारम्
1987
INDIRA GANDHI KRISHI VISHWAVIDYALAYA, RAIPUR



भाकृअनुप - राष्ट्रीय जैविक स्ट्रेस प्रबंधन संस्थान

बरौंडा, रायपुर - 493225, छत्तीसगढ़, भारत

ICAR-NATIONAL INSTITUTE OF BIOTIC STRESS MANAGEMENT

Indian Council of Agricultural Research
(DARE, Ministry of Agriculture and Farmers' Welfare)

Baronda, Raipur - 493225, Chhattisgarh, India



Dr. P K Ghosh, FNASc, FNAAS, FISA, FISPP, FWAST
Founder Director and Vice Chancellor

FOREWORD

The past efforts made for Indian agriculture brought lot of success in terms of raising production and productivity through technological intervention and varietal improvements. However, serving with the increased number of smallholders, growing proposition of women-led agriculture, need for higher return per unit area and addressing the changing socio-economic environment, new approach is necessary with the strong partnership of the farmers for developing location specific, demand driven and farmer friendly technological options. There is also a need for direct linkage between science laboratories and farms for better understanding and the real time problems of the local farmer and providing real time solutions to those problems.

Understanding the location specific problem of the farmers and working together in close conjunction of scientist and farmers is the only way to improve the income of small and marginal farmers. Farmers should also be exposed to the new technology developed by different individual/organisation through various capacity building programme and field demonstration. Under this project, so far 150 (80 additional) farm families are covered and 29 technological intervention are disseminated and sustained at farmers field. An eco-friendly product, Biotech-KISAN Tricho Card produced at main hub and 1486 cc (worth of 1.48 lakh) of native *Trichogramma spp.*, (*Trichogramma japonicum* and *Trichogramma chilonis*) has been produced and also distributed to the farmers. As a major activities, improved varieties such as nutria-rich biofortified rice variety (Zinco rice MS & DRR Dhan- 45) Indra aerobic- 1 for drought tolerant, Rajeshwari (IGKV R-1), Indra Maheshwari, MTU- 1010, DRR Dhan- 42 & 53 for insect- pest, diseases and drought resistant are promoted. The sum of total Rs. 56.17 lakh of additional income generated Rs. 24,920/- farm families as a result of successful technological interventions. It is worth mentioning that 16 (11 men and 5 women) biotech- KISAN fellows trained to become master- trainers to help the fellow farmers to adopt productive technological interventions.

I compliment the DBT Biotech-KISAN team for their sincere efforts in making the significant impacts in doubling the farmer's income of Aspirational Districts of Chhattisgarh.


(P. K. Ghosh)



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Biotech-KISAN Hub & Partners



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ICAR

INDIAN COUNCIL OF AGRICULTURAL RESEARCH
NEW DELHI



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NIBSM

NATIONAL INSTITUTE OF BIOTIC STRESS MANAGEMENT
RAIPUR



INDIRA GANDHI KRISHI VISHWAVIDYALAYA
RAIPUR

Introduction

Establishment of Biotech-KISAN Hub at ICAR-National Institute of Biotic Stress Management, Raipur

- ★ **Biotech-Krishi Innovation Science Application Network** (Biotech-KISAN) is a Department of Biotechnology, Ministry of Science and Technology initiative that empowers farmers, especially women farmers. It aims to understand the problems of water, soil, seed and market faced by the farmers and provide simple solutions to them.
- ★ The Scheme is for farmers, developed by and with farmers, it empowers women, impacts locally, connects globally, is PAN-India, has a hub-and spoke model and stimulates entrepreneurship and innovation in farmers.

Objectives of DBT Biotech-KISAN Programme

- ★ Linking available science and technology to the farm by first understanding the problem of the local farmer and provide solutions to those problems.
- ★ The working together, in close conjunction, of scientists and farmers is the only way to improve the working conditions of small and marginal farmers.
- ★ This programme aims to work with small and marginal farmers especially the woman farmer for better agriculture productivity through scientific intervention and evolving best farming practices in the Indian context.

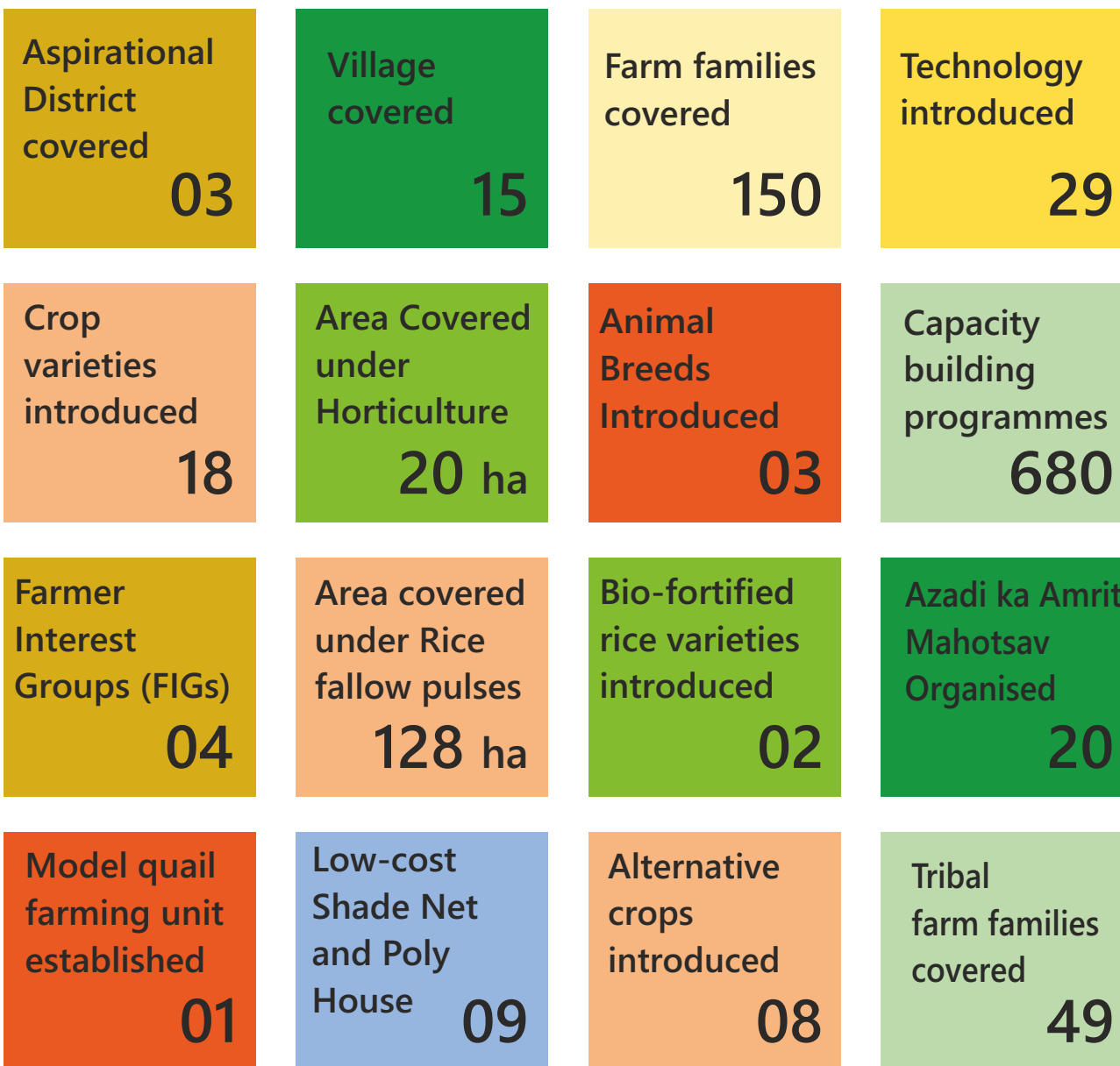
Project Objectives

To adopt and disseminate the biotech intervention to farmers.

- ★ Popularization of improved rice varieties such as drought tolerant, BPH resistant varieties, nutri-rich, rice varieties (developed through biotechnological approaches).
- ★ Application/use of bio-agents (like *Trichogramma* spp., NPV, BT, *Trichoderma viride* and *Pseudomonas*) along with complete package of practice at farmer's level in rice and pulses.
- ★ Demonstration of low-cost protected cultivation of vegetable such as coloured capsicum, cucumber and tomato.
- ★ Demonstration of scientific goat farming with the introduction of Sirohi, Jamunapari, Black bengal and Barbari breeds.

Summary

Major Achievements (2020-23)



Impact / Outcome



Additional
Income
Generated
56.17 Lakh

Income
Generated
₹ 37,420
(Per farm family)

Cropping
Intensity
Increased by
130%

Media coverage
of Project
activities
55

Women
Farmers
Empowered
32%

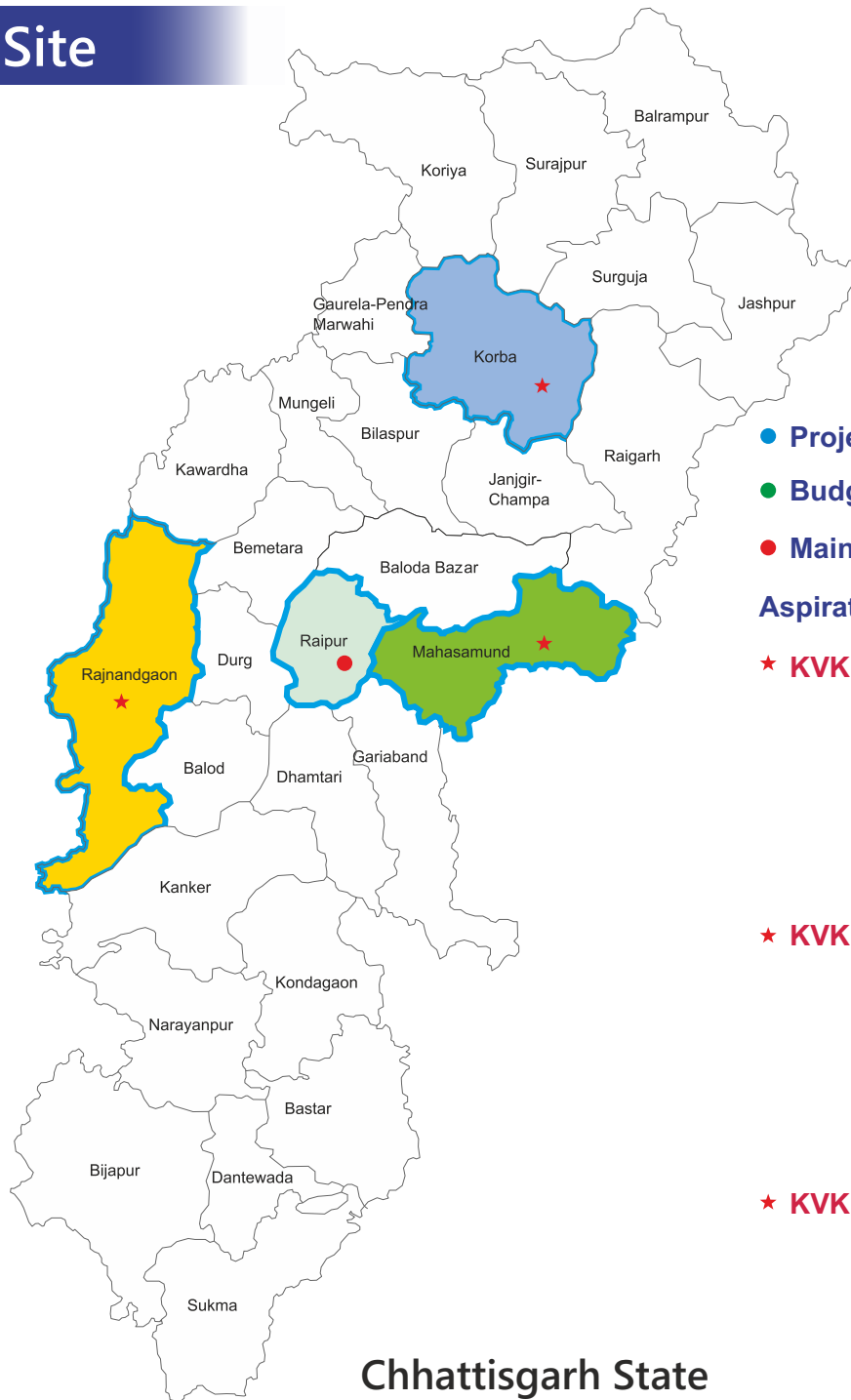
Youth
Attracted in
Agriculture
43%

ICT Agro
Advisory
Delivered
1264

Farmers
Benefitted
11551



Project Site



Chhattisgarh State

- **Project implemented : 2020**
- **Budget : Rs. 214 Lakh (For 3 years)**
- **Main Hub : ICAR-NIBSM, Raipur**
- **Aspirational Districts (Sub Hubs) :**

★ **KVK Korba**

- ◆ Ranjana
- ◆ Jawali
- ◆ Kasaipali
- ◆ Bhawar
- ◆ Sonpuri

★ **KVK Mahasamund**

- ◆ Saradih
- ◆ Birkoni
- ◆ Barbaspur
- ◆ Paraswani
- ◆ Achhola

★ **KVK Rajnandgaon**

- ◆ Sonsaytola
- ◆ Kodutola
- ◆ Bhadsena
- ◆ Mangatola
- ◆ Semharbandha

Success Stories



Mr. Aagnu Sahu



Mr. Anil Chandrakar



Mrs. Bhulsi Chandrakar



Mr. Ganesh Sahu



Mr. Murari



Mr. Pritam Sahu



Mr. Laxman Margaye



Mr. Lakhan Lal Kolyare



Mr. Hemsingh



Mr. Dharam Das Sahu



Mr. Vishnu Yadav



Mr. Narad Kumar



Mrs. Jotbai




Mr. Rameshwar Singh



Mr. Amrit Singh

Success Stories Under DBT Biotech-KISAN

Success Story – 01

	Name of farmer	Mr. Aagnu Sahu
	Address	Achola, Post- Zoba, Block- Mahasamund, Pin- 493445 Mobile Number: 7828000515
	Age	38 Years
	Education	5 th
	Size of landholding (acre)	2.0

1) Before DBT Biotech - KISAN Hub (2020)

Component Description		Benchmark (Base line period 2020)			
Components	Names	Area (Acre)/Number	Production (Q/Liter/No.)	Gross Income (Rs.)	Net Income (Rs.)
Field Crop 1	Paddy (Kharif)	2	32	70,400	45,056
Field Crop 2	Paddy (Rabi)	2	27	59,400	39,204
Total				1,29,800	84,260

2) After DBT Biotech - KISAN Hub (2023)

Component Description		Period – 2022-23				% increase over base year	
Components	Names	Area (Acre)/Number	Production (Q/Liter/No.)	Gross Income (Rs.)	Net Income (Rs.)	Production	Income
Field Crop 1	Paddy (Kharif)	2	44	96,800	65,824	37.50	46.09
Field Crop 2	Chickpea	2	12	63,600	44,520	100.00	100.00
Total				1,60,400	1,10,344		30.96

Brief: The farmer used to get annual income of Rs. **84,260** from paddy. He faced problems like low yield, water scarcity, etc. With interventions under Biotech KISAN projects like improved high yielding variety, application of bio agents, improved technological package and practices etc, he is getting annual income of **Rs. 1,10,344**.




Paddy Cultivation



Chickpea Cultivation

Success Story – 02

	Name of farmer	Mr. Anil Chandrakar
	Address	Village- Paraswani, Post- Birkoni, Pin- 493445 Mobile Number: 7770815454
	Age	42 Years
	Education	10 th
	Size of landholding (acre)	3.0

1) Before DBT Biotech - KISAN Hub (2020)

Component Description		Benchmark (Base line period 2020)			
Components	Names	Area (Acre)/Number	Production (Q/Liter/No.)	Gross Income (Rs.)	Net Income (Rs.)
Field Crop 1	Paddy (Kharif)	3	48	1,05,600	66,528
Field Crop 2	Paddy (Rabi)	3	43	94,600	60,544
Total				2,00,200	1,27,072

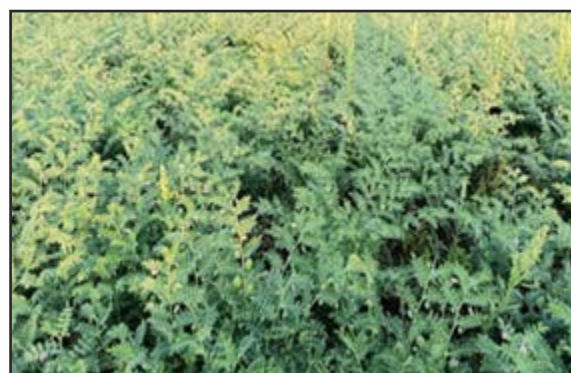
2) After DBT Biotech - KISAN Hub (2023)

Component Description		Period – 2022-23				% increase over base year	
Components	Names	Area (Acre)/Number	Production (Q/Liter/No.)	Gross Income (Rs.)	Net Income (Rs.)	Production	Income
Field Crop 1	Paddy (Kharif)	3	64	1,40,800	95,744	33.33	43.92
Field Crop 2	Chickpea	2	11	58,300	41,393	100.00	100.00
Total				1,99,100	1,37,137		7.92

Brief: The farmer used to get annual income of **Rs. 1,27,072** from paddy Kharif and Summer etc. He faced problems like low yield, insect - pest, Irrigation facility etc. With interventions under Biotech KISAN projects like improved high yielding variety, application of bio agents, improved technological package and practices, insect pest management etc. he is getting annual income of **Rs. 1,37,137**.




Paddy Cultivation



Chickpea Cultivation

Success Story – 03

	Name of farmer	Mrs. Bhulsi Chandrakar
	Address	Village- Paraswani, post- Birkoni Mobile Number: 7770815454
	Age	45 Years
	Education	10 th
	Size of landholding (acre)	3.7

1) Before DBT Biotech - KISAN Hub (2020)

Component Description		Benchmark (Base line period 2020)			
Components	Names	Area (Acre)/Number	Production (Q/Liter/No.)	Gross Income (Rs.)	Net Income (Rs.)
Field Crop 1	Paddy (Kharif)	3.7	58	1,27,600	76,560
Field Crop 2	Paddy (Rabi)	2	27	59,400	39,204
Total				1,87,000	1,15,764

2) After DBT Biotech - KISAN Hub (2023)

Component Description		Period – 2022-23				% increase over base year	
Components	Names	Area (Acre)/Number	Production (Q/Liter/No.)	Gross Income (Rs.)	Net Income (Rs.)	Production	Income
Field Crop 1	Paddy (Kharif)	3.7	82	1,80,400	1,26,280	41.38	52.25
Hort. Crop 1	Tomato	0.019	8	8000	5,500	100.00	100.00
Total				1,88,400	1,31,780		13.84

Brief: The farmer used to get annual income of **Rs. 1,15,764** from rice kharif and summer etc. She faced problems like low yield, insect and pest, irrigation facility etc. With **Biotech KISAN Hub** interventions like high yielding variety, proper management, agronomic practices, insect pest management and including tomato cultivation etc. she is getting annual income of **Rs.1,31,780**.




Rice Cultivation



Tomato Cultivation

Success Story – 04

	Name of farmer	Mr. Ganesh Sahu
	Address	Birkoni, Block- Mahasamund Pin- 493445 Mobile Number: 7974272813
	Age	28 Years
	Education	12 th
	Size of landholding (acre)	4.0

1) Before DBT Biotech - KISAN Hub (2020)

Component Description		Benchmark (Base line period 2020)			
Components	Names	Area (Acre)/Number	Production (Q/Liter/No.)	Gross Income (Rs.)	Net Income (Rs.)
Field Crop 1	Paddy	4	62	1,36,400	85,932
Field Crop 2	Chickpea	2	7	37,100	23,000
Total				1,73,500	1,08,932

2) After DBT Biotech - KISAN Hub (2023)

Component Description		Period – 2022-23				% increase over base year	
Components	Names	Area (Acre)/Number	Production (Q/Liter/No.)	Gross Income (Rs.)	Net Income (Rs.)	Production	Income
Field Crop 1	Paddy	4	88	1,89,200	1,27,200	41.94	48.02
Field Crop 2	Chickpea	2	12	63,600	43,248	71.43	88.03
Total				2,52,800	1,70,448		56.47

Brief: The farmer used to get annual net income of **Rs. 1,08,932** from paddy and chickpea. He faced problems like weedy infestation, water scarcity, lack of knowledge etc. With interventions under Biotech KISAN projects like improved high yielding variety, application of bio agents, improved technological package and practices, insect pest management, timely sowing etc., he is getting annual net income of **Rs. 1,70,448**.




Paddy Cultivation



Chickpea Cultivation

Success Story – 05

	Name of farmer	Mr. Murari
	Address	Achola, Block- Mahasamund, Pin- 493445 Mobile Number: 9753413921
	Age	46 Years
	Education	10 th
	Size of landholding (acre)	2.0

1) Before DBT Biotech - KISAN Hub (2020)

Component Description		Benchmark (Base line period 2020)			
Components	Names	Area (Acre)/Number	Production (Q/Liter/No.)	Gross Income (Rs.)	Net Income (Rs.)
Field Crop 1	Paddy	2	32	70,400	42,240
Field Crop 2	Chickpea	2	6	31,800	20,300
Total				1,02,200	62,540

2) After DBT Biotech - KISAN Hub (2023)

Component Description		Period – 2022-23				% increase over base year	
Components	Names	Area (Acre)/Number	Production (Q/Liter/No.)	Gross Income (Rs.)	Net Income (Rs.)	Production	Income
Field Crop 1	Paddy	2	44	96,800	65,824	37.50	55.83
Field Crop 2	Chickpea	2	10	53,000	37,100	66.67	185.19
Total				1,49,800	1,02,924		64.57

Brief: The farmer used to get annual net income of **Rs. 62,540** from paddy and chickpea. He faced problems like low yield, water scarcity, etc. With interventions under Biotech KISAN projects like improved high yielding variety, application of bio agents, improved technological package and practices, insect pest management, timely sowing, recommended dose of fertilizer etc, he is getting annual net income of **Rs. 1,02,924**.




Paddy Cultivation



Chickpea Cultivation

Success Story – 06

	Name of farmer	Mr. Pritam Sahu
	Address	Village-Sonsaytola, Post -Bhadsena, Tehsil-Ambagarh Chowki, Distt-Rajnandgaon (C.G.) 491665
	Age	31 Years
	Education	10 th
	Size of landholding (acre)	1.48

1) Before DBT Biotech - KISAN Hub (2020)

Component Description		Benchmark (Base line period 2020)			
Components	Names	Area (Acre)/Number	Production (Q/Liter/No.)	Gross Income (Rs.)	Net Income (Rs.)
Field Crop 1	Paddy	1.48	20.72	45,584	34,188
Total				-	-

2) After DBT Biotech - KISAN Hub (2023)

Component Description		Period – 2022-23				% increase over base year	
Components	Names	Area (Acre)/Number	Production (Q/Liter/No.)	Gross Income (Rs.)	Net Income (Rs.)	Production	Income
Hort. Crop 1	Cauliflower	1.48	120	4,20,000	2,80,000	100.00	100.00
Hort. Crop 2	Cucumber	1.0	155	2,32,500	1,82,500	100.00	100.00
Total				6,52,500	4,62,500		1,252.81

Brief: The farmer used to get annual income of **Rs. 34,188** from paddy cultivation etc. He faced problems like technical knowledge of farming etc. With DFI interventions like Scientific vegetable farming with drip and mulching etc., he is getting annual income of **Rs. 4,62,500**.




Cultivation of cauliflower



Cultivation of Rice

Success Story – 07

	Name of farmer	Mr. Laxman Margaye
	Address	H. No.- 78, Village- Kodu tola, P.O- Bhadsena, Tehsil-Ambagarh Chowki, Distt-Rajnandgaon (C.G.) 491665
	Age	46 Years
	Education	8 th
	Size of landholding (acre)	6.0

1) Before DBT Biotech - KISAN Hub (2020)

Component Description		Benchmark (Base line period 2020)			
Components	Names	Area (Acre)/Number	Production (Q/Liter/No.)	Gross Income (Rs.)	Net Income (Rs.)
Field Crop 1	Rice	5	70 Qu.	1,54,000	1,07,800
Total				1,54,000	1,07,800

2) After DBT Biotech - KISAN Hub (2023)

Component Description		Period – 2022-23				% increase over base year	
Components	Names	Area (Acre)/Number	Production (Q/Liter/No.)	Gross Income (Rs.)	Net Income (Rs.)	Production	Income
Field Crop1	Rice	5.0	80 Qu.	1,76,000	1,33,200	14.28	23.56
Hort.Crop1	Cowpea	0.5	18 Qu.	32,400	20,400	100.00	100.00
Hort.Crop2	Tomato	0.5	50 Qu.	50,000	25,000	100.00	100.00
Total				2,58,400	1,78,600		65.67

Brief: The farmer used to get annual income of Rs. **1,07,800** from Rice cultivation. He faced problems like technical farming etc. With DFI interventions like Vegetable cultivation with drip and mulching etc., he is getting annual income of Rs. **1,78,600**.




Rice cultivation



Cultivation of cowpea

Success Story – 08

	Name of farmer	Mr. Lakhan Lal Kolyare
	Address	H.No.-114, Ward No.-14, Village-Sonsaytola, P.O- Bhadsena, Tehsil - Ambagarh Chowki, Distt- Rajnandgaon (C.G.)
	Age	50 Years
	Education	Graduation
	Size of landholding (acre)	2.0

1) Before DBT Biotech - KISAN Hub (2020)

Component Description		Benchmark (Base line period 2020)			
Components	Names	Area (Acre)/Number	Production (Q/Liter/No.)	Gross Income (Rs.)	Net Income (Rs.)
Field Crop 1	Rice	2.0	30 Qu.	66,000	42,240
Total				66,000	42,240

2) After DBT Biotech - KISAN Hub (2023)

Component Description		Period – 2022-23				% increase over base year	
Components	Names	Area (Acre)/Number	Production (Q/Liter/No.)	Gross Income (Rs.)	Net Income (Rs.)	Production	Income
Field Crop1	Rice	2	34 Qu.	74,800	56,872	13.33	34.64
Field Crop2	Green Gram	1	2 Qu.	11,000	6,000	100.00	100.00
Field Crop3	Black Gram	1	6 Qu.	33,000	25,000	100.00	100.00
Hort.Crop1	Brinjal	0.5	120 Qu.	96,000	56,000	100.00	100.00
Hort.Crop2	Bitter Gourd	0.5	30 Qu.	48,000	18,000	100.00	100.00
Hort.Crop3	Tomato	0.5	80 Qu.	80,000	40,000	100.00	100.00
Total				3,42,800	2,01,872		377.91

Brief: The farmer used to get annual income of Rs. **42,240** from Rice cultivation and wages. He faced problems like technical farming and market price etc. With DFI interventions like Drip irrigation system, Mulching and High yielding varieties etc., he is getting annual income of Rs. **2,01,872**.




Tomato Cultivation



Bittergourd Cultivation

Success Story – 09

	Name of farmer	Mr. Hemsingh
	Address	Village-Mangatola, P.O-Bandhabazar, Tehsil- Ambagarh Chowki, Distt-Rajnandgaon
	Age	56 Years
	Education	9 th
	Size of landholding (acre)	4.75

1) Before DBT Biotech - KISAN Hub (2020)

Component Description		Benchmark (Base line period 2020)			
Components	Names	Area (Acre)/Number	Production (Q/Liter/No.)	Gross Income (Rs.)	Net Income (Rs.)
Field Crop1	Rice (Kharif)	4.0	60	1,32,000	95,040
Field Crop2	Pea (Rabi)	2.0	40	1,60,000	1,30,000
Hort.Crop1	Cowpea (Rabi)	2.0	66	99,000	59,000
Total				3,91,000	2,84,040

2) After DBT Biotech - KISAN Hub (2023)

Component Description		Period – 2022-23				% increase over base year	
Components	Names	Area (Acre)/Number	Production (Q/Liter/No.)	Gross Income (Rs.)	Net Income (Rs.)	Production	Income
Field Crop1	Paddy (Kharif)	4.0	72	1,58,400	1,10,880	20.00	16.67
Field Crop2	Pea (Rabi)	2.0	50	2,00,000	1,60,000	25.25	23.08
Hort.Crop1	Cowpea (Rabi)	2.0	74	1,11,000	61,000	12.36	3.39
Livestock 1	Poultry	20 Nos	200	1,00,000	80,000	100.00	100.00
Livestock 2	Goat	6 Nos.	15	75,000	65,000	100.00	100.00
Total				6,44,400	4,76,880		67.89

Brief: The farmer used to get annual income of **Rs. 2,84,040** from Paddy, Pea and Cowpea cultivation etc. He faced problems like marketing and lack of knowledge about farming etc. With DFI interventions like Proper management of farm etc., he is getting annual income of **Rs. 4,76,880**.



Goat farming



Pea cultivation

Success Story – 10

	Name of farmer	Mr. Dharam Das Sahu
	Address	Village-Sonsaytola, P.O- Bhadsena, Tehsil-Ambagarh Chowki, Distt- Rajnandgaon (C.G.) 491665
	Age	54 Years
	Education	12 th
	Size of landholding (acre)	2.5

1) Before DBT Biotech - KISAN Hub (2020)

Component Description		Benchmark (Base line period 2020)			
Components	Names	Area (Acre)/Number	Production (Q/Liter/No.)	Gross Income (Rs.)	Net Income (Rs.)
Field Crop1	Rice (Kharif)	2.5	35	77,000	48,510
Field Crop2	Maize (Rabi)	2	62	80,600	60,600
Livestock 1	Cow	3 Nos.	1200 Ltr.	36,000	21,000
Total				1,93,600	1,30,110

2) After DBT Biotech - KISAN Hub (2023)

Component Description		Period – 2022-23				% increase over base year	
Components	Names	Area (Acre)/No.	Production (Q/Liter/No.)	Gross Income (Rs.)	Net Income (Rs.)	Production	Income
Field Crop1	Rice (Kharif)	2.5	47.5	1,04,500	71,060	35.71	46.49
Field Crop2	Maize (Rabi)	1	40	52,000	39,500	29.03	30.36
Hort.Crop1	Cucumber (Rabi)	1	155	2,32,500	1,72,500	100.00	100.00
Hort.Crop2	Tomato (Rabi)	0.50	50	50,000	28,000	100.00	100.00
Livestock 1	Cow	5	2000	60,000	35,000	66.67	66.67
Other Enterprise1	General store	1 Unit	-	-	80,000	100.00	100.00
Total				4,99,000	4,26,060		227.46

Brief: The farmer used to get annual income of **Rs. 1,30,110** from Rice, Maize cultivation, General store and Dairy farming etc. He faced problems like technology and market price of products etc. With DFI interventions like Drip irrigation system, Mulching and High yielding varieties etc. he is getting annual income of **Rs. 4,26,060/-**




Tomato cultivation



Paddy cultivation

Success Story – 11

	Name of farmer	Mr. Vishnu Yadav
	Address	Village- Sonpuri, Podi-Uparoda, Korba Mobile Number:8839330090
	Age	37 Years
	Education	Post-Graduation
	Size of landholding (acre)	4.0

1) Before DBT Biotech - KISAN Hub (2020)

Component Description		Benchmark (Base line period 2020)			
Components	Names	Area (Acre)/Number	Production (Q/Liter/No.)	Gross Income (Rs.)	Net Income (Rs.)
Field Crop 1	Paddy	4	54	1,18,800	71,280
Field Crop 2	Chickpea	3	12.5	66,000	42,900
Total				1,84,800	1,14,180

2) After DBT Biotech - KISAN Hub (2023)


Component Description		Period – 2022-23				% increase over base year	
Components	Names	Area (Acre)/Number	Production (Q/Liter/No.)	Gross Income (Rs.)	Net Income (Rs.)	Production	Income
Field Crop 1	Paddy	4	68	1,49,600	1,00,232	25.93	40.62
Field Crop 2	Chickpea	3	27	1,43,000	1,07,250	116.00	150.00
Total				2,92,600	2,07,482		81.71

Brief: The farmer used to get annual income of **Rs. 1,14,180** from Paddy and Chickpea. He faced problems like high insect pest infestation, marketing problem, etc. With DBT interventions like improved variety, timely sowing, seed treatment etc. He is getting annual income of **Rs 2,07,482**.



Demonstration on the line transplanting of rice crop

Success Story – 12

	Name of farmer	Mr. Narad Kumar
	Address	Village Kasaipali, Katghora, Korba Mobile Number: 7828181397
	Age	35 Years
	Education	12 th
	Size of landholding (acre)	1.0

1) Before DBT Biotech - KISAN Hub (2020)

Component Description		Benchmark (Base line period 2020)			
Components	Names	Area (Acre)/Number	Production (Q/Liter/No.)	Gross Income (Rs.)	Net Income (Rs.)
Field Crop 1	Field Crop 1	1	13	28,600	17,732
Field Crop 2	Field Crop 2	1	4	19,800	13,860
Livestock 1	Livestock 1	2	4 Nos.	24,000	15,000
Total				48,400	46,592

2) After DBT Biotech - KISAN Hub (2023)

Component Description		Period – 2022-23				% increase over base year	
Components	Names	Area (Acre)/Number	Production (Q/Liter/No.)	Gross Income (Rs.)	Net Income (Rs.)	Production	Income
Field Crop 1	Field Crop 1	1	16	35,200	23,930	23.07	34.95
Field Crop 2	Field Crop 2	1	6	31,790	22,880	50.0	65.08
Livestock 1	Livestock 1	5	7 Nos.	56,000	41,000	75.0	173.33
Total				1,22,990	87,810		88.47

Brief: The farmer used to get annual income of Rs. **46,592** from Paddy, Chickpea, Goat etc. He faced problems like high insect pest infestation, marketing problem, etc. With DBT interventions like improved variety, timely sowing, seed & soil treatment etc. he is getting annual income of Rs **87,810**.




Goat farming



Rice Line transplanting

Success Story – 13

	Name of farmer	Mrs. Jotbai
	Address	Village- Jawali, Katghora, Korba Mobile Number: 9827483345
	Age	53 Years
	Education	5 th
	Size of landholding (acre)	2.0

1) Before DBT Biotech - KISAN Hub (2020)

Component Description		Benchmark (Base line period 2020)			
Components	Names	Area (Acre)/Number	Production (Q/Liter/No.)	Gross Income (Rs.)	Net Income (Rs.)
Field Crop 1	Paddy	2	22	48,400	29,040
Field Crop 2	Chickpea	1	4	21,180	13,980
Total				69,580	43,020

2) After DBT Biotech - KISAN Hub (2023)

Component Description		Period – 2022-23				% increase over base year	
Components	Names	Area (Acre)/Number	Production (Q/Liter/No.)	Gross Income (Rs.)	Net Income (Rs.)	Production	Income
Field Crop 1	Paddy	2	36.5	80,300	52,998	65.91	82.50
Field Crop 2	Chickpea	1	7	37,090	26,700	75.00	90.99
Total				1,17,390	79,698		85.26

Brief: The farmer used to get annual income of Rs. **43,020** from Paddy, Chickpea, etc. He faced problems like high insect pest infestation, marketing problem, diseases infestation, etc. With DBT interventions like Improved variety, timely sowing, seed & soil treatment etc. he is getting annual income of Rs **79,698**.




Demonstration of paddy cultivation



Demonstration of chickpea cultivation

Success Story – 14

	Name of farmer	Mr. Rameshwar Singh
	Address	Village- Ranjana, Katghora, Korba Mobile Number: 8770954329
	Age	25 Years
	Education	Graduate
	Size of landholding (acre)	1.0

1) Before DBT Biotech - KISAN Hub (2020)

Component Description		Benchmark (Base line period 2020)			
Components	Names	Area (Acre)/Number	Production (Q/Liter/No.)	Gross Income (Rs.)	Net Income (Rs.)
Field Crop 1	Paddy	1	11	24,200	14,520
Field Crop 2	Chickpea	1	5	26,500	17,490
Total				50,700	32,010

2) After DBT Biotech - KISAN Hub (2023)

Component Description		Period – 2022-23				% increase over base year	
Components	Names	Area (Acre)/Number	Production (Q/Liter/No.)	Gross Income (Rs.)	Net Income (Rs.)	Production	Income
Field Crop 1	Paddy	1	18	39,600	26,928	63.64	85.45
Field Crop 2	Chickpea	1	7	37,100	26,341	40.00	50.61
Total				76,700	53,269		66.41

Brief: The farmer used to get annual income of Rs. **32,010** from Paddy, Chickpea etc. He faced problems like high insect pest infestation, marketing problem, etc. With DBT interventions like Improved variety, timely sowing, seed treatment etc. he is getting annual income of Rs **53,269**.




Demonstration of scientific rice cultivation



Production on paddy crop

Success Story – 15

	Name of farmer	Mr. Amrit Singh
	Address	Village- Bhanwar, Podi-Uparoda, Korba Mobile Number:7879328754
	Age	45Years
	Education	8 th
	Size of landholding (acre)	3.0

1) Before DBT Biotech - KISAN Hub (2020)

Component Description		Benchmark (Base line period 2020)			
Components	Names	Area (Acre)/Number	Production (Q/Liter/No.)	Gross Income (Rs.)	Net Income (Rs.)
Field Crop 1	Paddy	3	43.5	95,700	58,377
Field Crop 2	Chickpea	1	5	26,500	17,490
Total				1,22,200	75,867

2) After DBT Biotech - KISAN Hub (2023)

Component Description		Period – 2022-23				% increase over base year	
Components	Names	Area (Acre)/Number	Production (Q/Liter/No.)	Gross Income (Rs.)	Net Income (Rs.)	Production	Income
Field Crop 1	Paddy	3	48	1,05,600	69,696	10.34	19.39
Field Crop 2	Chickpea	1	7	37,100	26,341	40.00	50.61
Total				1,42,700	96,037	13.40	26.59

Brief: The farmer used to get annual income of **Rs. 75,867** from Paddy, Chickpea etc. He faced problems like high insect pest infestation, marketing problem, etc. With DBT interventions like Improved variety, timely sowing, seed treatment etc., he is getting annual income of **Rs. 96,037**



Demonstration of scientific rice cultivation



Demonstration on chickpea cultivation

Successful Technologies under DBT Biotech-KISAN

Technology - 1: Aspirational District (Mahasamund)

1.	Name of technology	Establishment of Quail Farming Unit
2.	Farming situation	<ul style="list-style-type: none"> • Small, marginal, landless and resource poor farmers
3.	Problem	<ul style="list-style-type: none"> • Monoculture cropping system (Rice)
		<ul style="list-style-type: none"> • Low production and productivity
		<ul style="list-style-type: none"> • Lack of alternative livelihood option
		<ul style="list-style-type: none"> • Resource poor and subsistence farming
4.	Potential solution	<ul style="list-style-type: none"> • Introduction of Quail poultry breed
		<ul style="list-style-type: none"> • Established Quail farming unit
5.	Nature of intervention	<ul style="list-style-type: none"> • Integration of livestock components maximizing income
		<ul style="list-style-type: none"> • Participatory resource sharing
		<ul style="list-style-type: none"> • Participatory experiment and technology development
6.	Source of technology	KVK Mahasamund and IGKV, Raipur
7.	Expected output	<ul style="list-style-type: none"> • Increased family income
		<ul style="list-style-type: none"> • Alternative and sustainable livelihood option
		<ul style="list-style-type: none"> • Reduction in cost of production and increased standard of living
8.	No. of units	56
9.	No. of farm families	56
10.	Critical input	Quail chicks and technical inputs
11.	Livestock and breeds	Quail – Japanese Quail
12.	Cost of each intervention	Rs. 12445.00

Economic Performance Indicators

a.	Technical Observation	Farmers practice	Intervention
i.	Quail production per unit in a year	First time introduced	3520
b.	Economic indicators		
i.	Cost of cultivation (Rs./unit/year)	-	41240.00
ii.	Net income (Rs./ha)	-	99560.00
iii.	B:C ratio	-	2.41
c.	Farmers reaction/ Feedback	<ul style="list-style-type: none"> • Short-term income technology implemented. • Generating additional income from backyard. • Easy sell-out in the local market. • No need for vaccination. • Ensuring better returns for farmers. 	



Technology - 2: Aspirational District (Mahasamund)

1.	Name of technology	Low cost Protected Cultivation of Tomato
2.	Farming situation	Irrigated Land, Small, Medium and big farmers
3.	Problem	• Lack of good seed
		• Biotic and abiotic stress factors
		• Higher input cost
		• Lack of suitable varieties
		• Low technical know-how knowledge
4.	Potential solution	• Introduction of improved variety with scientific package of practices
		• Application of resource conservation technologies
		• Capacity building on GAPs
5.	Nature of intervention	• Hi-tech orientation
		• Effective utilization of available resource
		• Availability of quality planting materials
6.	Source of technology	KVKs and IGKV, Raipur
7.	Expected output	• Good quality product with high market value
		• Supply chain management
		• Entrepreneurship development
		• Less biotic and abiotic stress
8.	Area (ha)	05
9.	No. of farm families	05
10.	Critical input	Low cost Protected Structure
11.	Crop and variety	Tomato, Arka Rakshak F1
12.	Cost of each intervention	Rs 3,00,000 including cultivation cost of Tomato

Economic Performance Indicators

a.	Technical Observation	Farmers practice	Intervention
i.	Quintal /Ha.	400	600
b.	Economic indicators		
i.	Cost of cultivation (Rs./unit/year)	60000	120000
ii.	Net income (Rs./ha)	240000	580000
iii.	B:C ratio	4.00	4.83
c.	Farmers reaction/ Feedback	<ul style="list-style-type: none"> • Adoption of this technology leads to a boost in both yield and farmers' income. • There's a need for substantial government support to facilitate widespread adoption of this technology. 	



Technology - 1: Aspirational District (Rajnandgaon)

1.	Name of technology	Scientific vegetable cultivation with Drip irrigation & Poly Mulching
2.	Farming situation	Irrigated Mid Land, Small, Medium and big farmers
3.	Problem	• Lack of good seed
		• Biotic and abiotic stress factors
		• Higher input cost
		• Lack of suitable varieties
		• Low technical know-how knowledge
4.	Potential solution	• Introduction of improved variety with scientific package of practices
		• Application of resource conservation technologies
		• Capacity building on GAPs
		• Poly mulch and drip irrigation system
5.	Nature of intervention	• Hi-tech orientation
		• Effective utilization of available resource
		• Availability of quality planting materials
6.	Source of technology	KVKs and IGKV, Raipur
7.	Expected output	• Good quality product with high market value
		• Supply chain management
		• Entrepreneurship development
		• Less biotic and abiotic stress
8.	Area (ha)	9

9.	No. of farm families	9
10.	Critical input	Poly Mulch, Drip irrigation with fertigation system , Improved variety of vegetable seed, Bio fertilizer, Mulch hole making machine
11.	Crop and variety	Tomato (Arka Rakshak F1), Cucumber (Krish) and Cauliflower (F1)
12.	Cost of each intervention	45,000

Economic Performance Indicators

a.	Technical Observation	Farmers practice	Intervention
	Yield (q/ha)		
i.	Tomato (Arka Rakshak F1)	169.34	556.67
ii.	Cucumber (Krish)	439.32	728.00
iii.	Cauliflower (F1)	248.00	300.00
b.	Economic indicators		
i.	Cost of cultivation (Rs./ha)		
	Tomato (Arka Rakshak F1)	58600	100000
	Cucumber (Krish)	42800	125000
	Cauliflower	62500	113000
ii.	Net income (Rs./ha)		
	Tomato (Arka Rakshak F1)	110740	455670
	Cucumber (Krish)	332928	1185400
	Cauliflower	251650	637000
iii.	B:C ratio		
	Tomato (Arka Rakshak F1)	1.88	4.55
	Cucumber (Krish)	7.78	9.48
	Cauliflower	4.03	5.63

c. Farmers reaction/ Feedback

- We're happy with the transition to scientific vegetable cultivation.
- Our earnings have significantly increased compared to traditional methods.
- Farmers are highly satisfied with the effective weed control achieved through poly mulching.
- The drip system ensures precise and balanced fertilizer delivery directly to the root system, much to our satisfaction.



Technology - 2: Aspirational District (Rajnandgaon)

1.	Name of technology	Scientific Rice cultivation with seed treatment of Bio-fertilizers
2.	Farming situation	<ul style="list-style-type: none"> • Small, marginal and resource poor farmers • Rainfed - Mid and lowland
3.	Problem	<ul style="list-style-type: none"> • High biotic stress • Traditional agricultural practices • Low production and productivity of rice • Low level adoption of high yielding varieties • Unawareness of GAPs and modern management strategies • Lack of knowledge in plant protection measures/ technical know-how • Shortage of valid and timely information • Lack of user-friendly and readymade knowledge tools
4.	Potential solution	<ul style="list-style-type: none"> • Improved variety • Tillage machines, sowing methods, seed priming, higher seed rate, timely planting, seed treatment with fungicides • Persuasion and motivation for adopting recommended IPM modules • Innovative farmer's participatory approach and ICT tools • Dissemination of GAPs in rice cropping system • Increasing knowledge and awareness in scientific rice and pulse production through knowledge tools.

		<ul style="list-style-type: none"> • Capacity building of tribal farmers using demonstration, trainings and workshops. • Mechanization and drudgery reduction tools
5.	Nature of intervention	<ul style="list-style-type: none"> • Line sowing • Mechanical weed control • Participatory mode • Eco-friendly pest management technology • Low cost and user-friendly technologies
6.	Source of technology	KVKs and IGKV Raipur
7.	Expected output	<ul style="list-style-type: none"> • Increased knowledge and awareness level in rice production • Less biotic stress • Increased adoption rate towards sustainable cultivation practices • Positive attitude change towards rice cropping system • Reduced input cost and increased yield
8.	Area	100 acres
9.	No. of farm families	100
10.	Critical input	Improved variety Rice seed, Bio fertilizer, Seed drill, Weedicide pre & post emergence
11.	Crop and variety	Rice, variety - Zinco rice MS
12.	Cost of each intervention	20,000 Approximately

Technology - 1: Aspirational District (Korba)

1.	Name of technology	Scientific Cultivation of Bio fortified Rice Variety
2.	Farming situation	• Small, marginal and resource poor farmers
		• Rainfed - Mid and lowland
3.	Problem	• High biotic stress
		• Traditional agricultural practices
		• Low production and productivity of rice
		• Low level adoption of high yielding varieties
		• Unawareness of GAPs and modern management strategies
		• Lack of knowledge in plant protection measures/ technical know-how
		• Shortage of valid and timely information
4.	Potential solution	• Lack of user-friendly and readymade knowledge tools
		• Improved variety
		• Tillage machines, sowing methods, seed priming, higher seed rate, timely planting, seed treatment with fungicides
		• Persuasion and motivation for adopting recommended IPM modules
		• Innovative farmer's participatory approach and ICT tools
		• Dissemination of GAPs in rice cropping system
		• Increasing knowledge and awareness in scientific rice and pulse production through knowledge tools.

		<ul style="list-style-type: none"> • Capacity building of tribal farmers using demonstration, trainings and workshops. • Mechanization and drudgery reduction tools
5.	Nature of intervention	<ul style="list-style-type: none"> • Line sowing • Mechanical weed control • Participatory mode • Eco-friendly pest management technology • low cost and user-friendly technologies
6.	Source of technology	KVKs and IGKV Raipur
7.	Expected output	<ul style="list-style-type: none"> • Increased knowledge and awareness level in rice production • Less biotic stress • Increased adoption rate towards sustainable cultivation practices • Positive attitude change towards rice cropping system • Reduced input cost and increased yield
8.	Area	20 hac.
9.	No. of farm families	50
10.	Critical input	<ul style="list-style-type: none"> • Improved and Bio fortified Rice seed • Bio agent (as seed treatment) Trichoderma, P.S.B. and Pseudomonas • Biopesticide <i>Bacillus thuringiensis</i>, <i>Baveria bassiana</i>, <i>Metarhizium anisoplae</i>
11.	Crop and variety	Rice, variety - Indira Aerobic-1 and Zinco rice MS
12.	Cost of each intervention	37,475 per ha./ farmers

Economic Performance Indicators

a.	Technical Observation	Farmers practice	Intervention
i.	Yield (q/ha)	32.5	42.5
b.	Economic indicators		
i.	Cost of cultivation (Rs./unit/year)	27890	32920
ii.	Net income (Rs./ha)	43610	60580
iii.	B:C ratio	1.56	1.84
c.	Farmers reaction/ Feedback	<ul style="list-style-type: none"> • Adoption of the scientific package of practices in nursery management helped in high yield. • Seed treatment with Trichoderma and Pseudomonas helped to get healthy crops. • Resulted in a notable reduction in disease incidence. • Increased the quality of seedlings. 	



Technology - 2: Aspirational District (Korba)

1.	Name of technology	Scientific Lathyrus cultivation with improved variety - Prateek
2.	Farming situation	• Small, marginal and resource poor farmers
		• Rainfed - Mid and lowland
3.	Problem	• Rice fallow lands
		• Low production and productivity
		• Low level adoption of high yielding varieties
		• Unawareness of GAPs and modern management strategies
		• Lack of knowledge in plant protection measures/ technical know-how
		• Shortage of valid and timely information
		• Lack of user-friendly and readymade knowledge tools
		• Poor crop stand and establishment
		• Non-availability of quality seeds
4.	Potential solution	• Off farm trails to evaluate cultivars
		• Tillage machines, sowing methods, seed priming, higher seed rate, timely planting, seed treatment with fungicides
		• Persuasion and motivation for adopting recommended IPM modules
		• Foliar spray of urea/DAP to supplement N and P
		• Residue mulching
		• Village based Seed Production Units

5.	Nature of intervention	• Rice-pulse cropping system
		• Eco-friendly
		• Low cost and user-friendly technologies
6.	Source of technology	KVKs and IGKV, Raipur
7.	Expected output	• Village based seed production units
		• Increased knowledge and awareness level in rice fallow pulse production
		• Increased adoption rate towards sustainable cultivation practices
		• Positive attitude changes towards rice-pulse cropping system
		• Suitable Livelihood model for tribal farming
		• Reduced input cost and increased yield
8.	Area (ha)	6.4 hac.
9.	No. of farm families	17
10.	Critical input	• Seed
		• Bio agent (as seed treatment) <i>Trichoderma</i> , P.S.B. and <i>Rhizobium</i>
		• Biopesticide <i>Bacillus thuringiensis</i> , <i>Metarhizium anisoplae</i>
11.	Crop and variety	<i>Lathyrus</i> variety - Prateek
12.	Cost of each intervention	20330 per ha./ farmers

Economic Performance Indicators

a.	Technical Observation	Farmers practice	Intervention
i.	Yield (q/ha)	7.5	12
b.	Economic indicators		
i.	Cost of cultivation (Rs./unit/year)	7130	9000
ii.	Net income (Rs./ha)	12750	21000
iii.	B:C ratio	1.78	2.33
c.	Farmers reaction/ Feedback	<ul style="list-style-type: none"> • Adoption of the right package of technologies in sowing practices. • Seed treatment resulted in a significant reduction in disease incidence. • Enhanced the quality of seeds/ yield 	



Technology - 3: Aspirational District (Korba)

1.	Name of technology	Scientific chickpea cultivation with improved variety
2.	Farming situation	<ul style="list-style-type: none"> • Small, marginal and resource poor farmers • Rainfed - Mid and lowland
3.	Problem	<ul style="list-style-type: none"> • Rice fallow lands • Low production and productivity • Low level adoption of high yielding varieties • Unawareness of GAPs and modern management strategies • Lack of knowledge in plant protection measures/ technical know-how • Shortage of valid and timely information • Lack of user-friendly and readymade knowledge tools • Poor crop stand and establishment • Non-availability of quality seeds
4.	Potential solution	<ul style="list-style-type: none"> • Off farm trails to evaluate cultivars • Tillage machines, sowing methods, seed priming, higher seed rate, timely planting, seed treatment with fungicides • Persuasion and motivation for adopting recommended IPM modules • Foliar spray of urea/DAP to supplement N and P • Residue mulching • Village based Seed Production Units

5.	Nature of intervention	• Rice-pulse cropping system
		• Eco-friendly
		• Low cost and user-friendly technologies
6.	Source of technology	KVKs and IGKV, Raipur
7.	Expected output	• Village based seed production units
		• Increased knowledge and awareness level in rice fallow pulse production
		• Increased adoption rate towards sustainable cultivation practices
		• Positive attitude changes towards rice-pulse cropping system
		• Suitable Livelihood model for tribal farming
		• Reduced input cost and increased yield
8.	Area (ha)	13.6 hac.
9.	No. of farm families	33
10.	Critical input	• Seed
		• Bio agent (as seed treatment) <i>Trichoderma</i> , P.S.B. and <i>Rhizobium</i>
		• Biopesticide <i>Bacillus thuringiensis</i> , <i>Metarhizium anisoplae</i>
11.	Crop and variety	Chickpea variety – RVG-201
12.	Cost of each intervention	554425 per ha./ farmer

Economic Performance Indicators

a.	Technical Observation	Farmers practice	Intervention
i.	Yield (q/ha)	10	15
b.	Economic indicators		
i.	Cost of cultivation (Rs./unit/year)	20200	25500
ii.	Net income (Rs./ha)	32800	54000
iii.	B:C ratio	1.62	2.11
c.	Farmers reaction/ Feedback	<ul style="list-style-type: none"> • Farmers in Korba district have embraced the RVG201 chickpea variety due to its suitability, offering high yield • Utilization of bio fungicides and biopesticides, along with growth-promoting factors, has been instrumental in boosting yields. 	



Technology - 4: Aspirational District (Korba)

1.	Name of technology	Scientific goat farming with improved breed
2.	Farming situation	• Small, marginal and resource poor farmers
		• Rainfed - Mid and lowland
3.	Problem	• Monoculture cropping system (Rice)
		• Lack of suitable breeds
		• Low production and productivity
		• Lack of alternative livelihood option
		• Resource poor and subsistence farming
		• Small land holdings
4.	Potential solution	• Introduction of suitable goat breeds
		• Dissemination of good agricultural technologies
		• Scientific goat farming technologies
5.	Nature of intervention	• Integration of livestock components maximizing income
		• Participatory resource sharing
		• Participatory experiment and technology development
		• Evolving location specific models of technology options
6.	Source of technology	ICAR- NIBSM Baronda, Raipur & KVK, Korba. MP State Livestock and Poultry Development Corporation, Kiratpur, Itarsi, Madhya Pradesh
7.	Expected output	• Increased family income
		• Alternative livelihood option

8.	No. of animals/birds	50 Female and 05 Male goats
9.	No. of farm families	05
10.	Critical input	Goat breed: Sirohi Goat vaccine, medicine and goat breed (sirohi)
11.	Name of breed/species	Sirohi
12.	Cost of each intervention	90,000/ each intervention

Economic Performance Indicators

a.	Technical Observation	Farmers practice	Intervention
i.	Average body weight (kg)	First time Introduced	1080 (Total live weight of animals)
ii.	No. of fingerlings/ Average egg production /month/ Average milk yield/day		72 offspring
b.	Economic indicators		
i.	Cost of production		1,50,000
ii.	Net income (Rs.)		3,90,000
iii.	B:C ratio		2.60
c.	Farmers reaction	<ul style="list-style-type: none"> • Improved breed, good body weight • Helpful intervention for resource poor triable farmers • High growth rate, with good meat quality and market price • Best livelihood option for tribal area 	



I. Crop Based Module



Popularization of biofortified rice variety Zinco Rice MS



Demonstration of scientific cultivation of biofortified rice variety - Zinco Rice MS

Cultivation of DRR Dhan 45



Demonstration of scientific cultivation of biofortified rice variety - DRR Dhan 45 at Rajnandgaon

Cultivation of pest and disease resistant varieties of rice



Demonstration of scientific cultivation of insect-pest, disease and drought resistant rice varieties such as Indira aerobic -1, Rajeswari (IGKV R-1), Indira Maheshwari, MTU -1010 and DRR Dhan 53

Promoting chickpea cultivation



Chickpea cultivation with improved varieties (RVG 201 & 202) at Korba and Mahasamund

Reviving *lathyrus* cultivation in rice fallow



Scientific lathyrus cultivation with improved variety Prateek at Korba

Scientific linseed cultivation



Scientific linseed cultivation with improved variety Deepika at Korba

Pigeon pea cultivation in rice bund



Bund cultivation of pigeon pea with disease resistant variety TJT-501 at three Aspirational Districts

Line sowing of rabi pulses



Line sowing of rabi pulses at Korba, Rajnandgaon and Mahasamund

II. Horticulture Based Module



Scientific vegetable cultivation



Demonstration of scientific vegetable cultivation for additional income general in three Aspirational Districts

Nursery raising technology



Demonstration of scientific nursery raising technology at Rajnandgaon

Low-cost shade net house



1. No. of units : 09
2. Average per unit area : 75 m²
3. Cost per unit : 60000/-
4. Cropping pattern : Tomato, Cucumber
5. Production & income:
 - (i) **Tomato:**
In shade net – 6 q/75 m² (Income – 6000/-) (Cost – 600/-)
In open condition – 3.2 q/75 m² (Income – 3200/-) (Cost – 900/-)
 - (ii) **Capsicum:**
In shade net – 6.1q/75 m² (Income – 3600/-) (Cost – 600/-)
In open condition – 4.5q/75 m² (Income – 2700/-) (Cost – 900/-)



Demonstration of low-cost shade net house for tomato, chilli, capsicum and cucumber established at Rajnandgaon and Mahasamund

Low-cost drip irrigation system



Demonstration of low-cost drip irrigation system for vegetable production at Rajnandgaon and Mahasamund

Use of poly mulch and row covers in vegetable production



Demonstration of poly mulching and drip system for vegetable production at Rajnandgaon and Mahasamund

Nutritional kitchen gardening

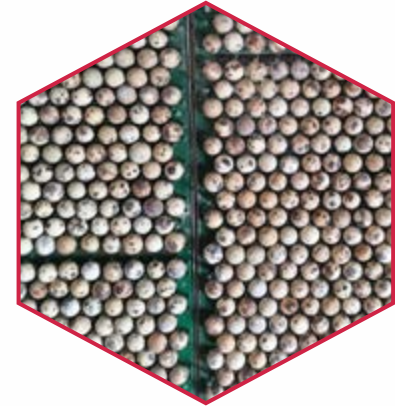


- 1. Average size :**
200 m²
- 2. No. of vegetables grown :** 6-8
- 3. Names of vegetables grown :**
Cabbage, cauliflower, brinjal, tomato, chili, okra, bitter gourd etc.
- 4. Availability of vegetables :** 6 months
- 5. Average quantity consumed :** 182 gm/day/person
- 6. Average quantity sold/shared with neighbor/friends :** 500 kg



Demonstration of nutritional kitchen gardening for women empowerment at three Aspiration Districts

III. Livestock Based Module



Scientific goat farming



1. Total no. of units : 13
2. Total no. of male and female goats : 90 (F), 13 (M) = 103
3. No. of kids : 8 per unit
4. Average body weight of kids :
 - At birth – 2 kg.
 - 6 month – 18.5 kg.
 - 1 year – 30 kg.
5. Average selling price of kids : 5,000/-
6. Average selling price of adults : 10,000/-
7. Average income per unit : 55,000/-



Scientific goat farming with improved Sirohi breed at Korba and Rajnandgaon

Kadaknath farming



Scientific kadaknath farming activities at Rajnandgaon

Quail farming



1. Unit capacity : 1800
2. No. of farmers benefited : 13
3. No. of eggs hatched per unit : 10,000
4. No. of birds provided : 6000
5. Price for one bird : Adult – 40/-, Chick – 10/-
6. Weight during selling : 150-200g
7. Cost of rearing per unit per batch : 28,000/-
8. Income per unit per batch : 40000/-
9. Total no. of hatchery : 01



Scientific quail farming activities at Aspiration District, Mahasamund

IV. NRM Based Module



Pest management through eco-friendly technologies



- Total 1486 cc (worth of 1.48 lakh of native *Trichogramma* spp. (*T. japonicum* and *T. chilonis*) produced and distributed to farmers from main hub ICAR-NIBSM

1. Area covered :

297.76 ha during 2020 to 2022

2. No. of farmers benefited : 740

3. Effective management of :

Stem borer, fruit fly and nocturnal insects



Using *Trichogramma japonicum* (Tricho card) in paddy to control Yellow Stem Borer (YSB)

Pest management through various traps and gadgets



1. Name of the traps installed :

Pheromone, Light trap and Fruit fly trap

2. Crops covered :

Rice, tomato, cucumber, brinjal, cucurbits, bitter gourd etc.

3. No. of farmers benefited : 50

4. Pest targeted :

Pheromone trap :

Stem borer

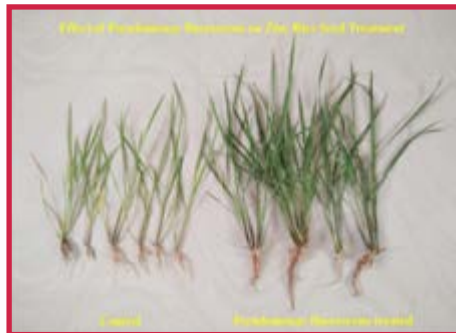
Light trap : Nocturnal insects

Fruit fly trap : Fruit fly insect



Use of pheromone, light and fruit fly traps for eco-friendly pest management at project site

Seed treatment with bio-fertilizers and bio-agents



Seed treatment with Biofertilizer such as *Azospirillum* and PSB, bioagents *Trichoderma*, *Pseudomonas fluorescens* and *Trichogramma*; Biopesticides *Bacillus thuringensis*, *Metarhizium anisoplae*, *Baveria bassiana*

Capacity Building Programmes

Year	Sl. No.	Events	Total	No. of villages covered	No. of beneficiaries
2020-21	1.	Farmers training	27	15	894
	2.	Demonstration	31	15	325
	3.	Field day	21	15	568
	4.	Online Training	02	05	40
	5.	Farmers Scientist interface/ Group Discussion	32	10	832
	6.	Field day programme	21	15	568
	7.	Awareness Programme	05	06	270
	8.	Farmers Exposure Visit Cum Educational Tour	04	15	152
	9.	Farm implements distributed	291	15	291
2021-22	1.	Farmers training	79	15	3189
	2.	Demonstration	38	15	875
	3.	Field day	10	10	404
	4.	Online Training	09	30	200
	5.	Farmers Meetings/ Group Discussion	27	15	894
	6.	Field day programme	10	10	404
	7.	Azadi ka Amrit Mahotsav	20	20	573
	8.	Awareness Programme	11	9	240
	9.	Farmers Scientist Interface	42	10	832
Total			680	-	11551

Human Resource Development Activities



Glimpses of farmer exposure visits and educational tours to research and development institutions



Glimpses of capacity building programmes to enhance the know how of farming communities

Women Empowerment



Various women empowerment activities organised under DBT Biotech-KISAN Hub



Activities such as mushroom production, goat farming, quail farming, nutritional gardening, rice fallow pulse production and capacity building programmes organised to farm women

Celebration of *Azadi Ka Amrit Mahotsav: India @75*

75
Azadi Ka
Amrit Mahotsav



Demonstration of low-cost protected cultivation of vegetables such as coloured capsicum, cucumber and tomato at KVK Mahasamund



Demonstration of scientific goat farming with the introduction of Sirohi, Jamnapari, Black bengal and Barbari breeds

Publications



Publications released under DBT-Biotech KISAN for farmers

Farm Implements Support



Farm implements support provided to farmers from main hub, ICAR-NIBSM to reduce the drudgery

Agro Inputs Support



Agro input support provided to farmers of Aspirational Districts for better crop production

Mentor Visit (On-the-Spot Assessment of Project Progress)



Mentor, Dr. M. J. Chandre Gowda visited Aspirational district Rajnandgaon on 07.03.2022



Dr. M. J. Chandre Gowda visited KVK Mahasamund and project site on 08.03.2022



Dr. M. J. Chandre Gowda visited KVK Korba, Aspirational district on 09 & 10.03.2022

कलेक्टर ने डीबीटी बायोटेक किसान हब के किसानों को उन्नत खेती के लिये किया प्रोत्साहित

किसानों को बीज उपचार ड्रम एवं मुनगा के पौधों का किया वितरण

राजनांदगांव (नांदगांव टाडमस)। कलेक्टर श्री तारन कतार बोनी करने अथवा कतारबद्ध तरीके से रोपाई कर प्रकाश सिन्हा ने आदिवासी अंचल अंबागढ़ चौकी के कृषि विज्ञान केंद्र के ग्राम सोनसायटोला में चल रहे डीबीटी बायोटेक किसान हब की जानकारी ली एवं किसानों को वैज्ञानिक तकनीकों को अपनाकर अपनी आय को दुगुनी करने के लिये प्रोत्साहित किया।



कलेक्टर ने किसानों को बीज उपचार ड्रम व मुनगा (किस्म पीकेएम -1) के पौधों का वितरण किया। बायोटेक किसान हब परियोजनांतर्गत राजनांदगांव जिले के अंबागढ़ चौकी विकासखंड के पांच गांव सोनसायटोला, भड्सेना, मांगाटोला, सेम्हरबांधा, कौडटोला से 50 किसानों का चयन किया गया है। यह योजना मुख्य रूप से चार मॉडल फसल, अनाज, दलहन एवं प्राकृतिक संसाधन प्रबंधन, उद्यानिकी, पशुपालन आधारित मॉडल पर आधारित है। परियोजना अंतर्गत इस वर्ष किसानों को धान की प्रजाति इंदिरा महेश्वरी दिया गया है, जो तनाछेदक, दुग्धो वायरस, भूरा माहू, पत्तियों में झुलसा रोग हेतु प्रतिरोधी होती है। यह किस्म 130-135 दिन की अवधि वाली है। वहीं डीआरआर धान - 42 का वितरण किया गया, जो सूखाग्रस्त क्षेत्र के लिए प्रतिरोधी है। यह किस्म 120 दिन की अवधि वाली है। जिसे सोडर्डिल मशीन के द्वारा

लगाए जाने हेतु प्रशिक्षण प्रदान किया गया एवं इस परियोजना के तहत किसानों को सीड कम फर्टिडिल भी प्रदान किया गया है। गौरतलब है कि यह परियोजना भारतीय कृषि अनुसंधान परिषद-राष्ट्रीय जैविक स्ट्रेस प्रबंधन संस्थान, बरौंडा रायपुर के डॉ. पी.मूवेचन पलानीसामी के मार्गदर्शन एवं कुलपति इंदिरा गांधी कृषि विश्व विद्यालय रायपुर डॉ. एसके पाटिल, निदेशक विस्तार सेवाएँ इंदिरा गांधी कृषि विश्व विद्यालय रायपुर डॉ. एससी मुखर्जी के संरक्षण में इस योजना का संचालन कृषि विज्ञान केंद्र, राजनांदगांव के वरिष्ठ वैज्ञानिक डॉ. बीएस राजपूत एवं प्रमुख व इस योजना की परियोजना प्रभारी तथा विषय वस्तु विशेषज्ञ उद्यानिकी श्रीमती गुंजन शर्मा के द्वारा किया जा रहा है। इस अवसर पर जिला पंचायत सीईओ श्री लोकाश चंद्राकर, एसडीएम मोहला श्री ललितादित्य नीलम, उप संचालक कृषि जीएस भुवें, श्री राजीव देववस उप संचालक पशुपालन, सहायक संचालक उद्यानिकी श्री राजेश शर्मा, जनपद सीईओ श्री भानुप्रताप चुरेंद्र, नायब तहसीलदार श्री एचएन खुटे, ग्राम पंचायत के सरपंच श्रीमती नीतू कोल्यारे सहित अन्य अधिकारी उपस्थित थे।

कम लागत में सब्जियों की संरक्षित खेती का प्रदर्शन व प्रशिक्षण कार्यक्रम

अमन पय न्यूज

महासमुंद। भाऊअनुप राष्ट्रीय जैविक स्ट्रेस प्रबंधन संस्थान रायपुर द्वारा प्रायोजित तथा कृषि विज्ञान केंद्र द्वारा संचालित रबायोटेक किसान हब परियोजना अंतर्गत र आजादी का अमृत महोत्सव एका आयोजन जिले ले ग्राम परसवानी में किया गया। कृषि विज्ञान के विभिन्न विषयों के व्यज उपस्थित रहे। कार्यक्रम में केंद्र के वैज्ञानिकों सब्जियों की काम लागत वाली संरक्षित खेती के बारे में विस्तृत चर्चा की।



सब्जियों की पौधा तैयार करना, संरक्षित खेती हेतु संरचना का निर्माण और उसके लागत, स्थल का चयन, मृदा एवं जल परीक्षण आधारित उर्वरक प्रबंधन इत्यादि के बारे में जानकारी दी। जिले के 70 किसानों ने भाग लिया और किसानों ने अपना अनुभव भी किसानों के बीच रखा। इस कार्यक्रम में कृषि वैज्ञानिक एचएस तोमर, डॉ. साकेत दुबे, श्रीमती रजनी आगारे, कुणाल चंद्राकर तथा डॉ सत्येंद्र गुप्ता

उपस्थित रहे जिनके द्वारा परिचर्चा में किसानों की शंकाओं का समाधान किया। इसी क्रम में मंगलवार को पटेवा के रामसागर पारा और बुधवार को अछेला में भी महोत्सव के तहत प्रशिक्षण कार्यक्रम का आयोजन किया गया। उक्त कार्यक्रम में 50 से भी अधिक किसानों को संरक्षित खेती का प्रशिक्षण दिया गया।

25 महिलाओं ने सीखा बटेर पालन

वैज्ञानिकों तथा बाई एक्सपर्ट ने किया प्रशिक्षण



अतिथियों किसानों को सहाय को मुखभार से जोड़ने के लिये भलेसर किल इंदिरा गांधी कृषि विद्यालय में 2 दिवसीय कार्यक्रम का आयोजन किया गया। मिश्री बामनाथ सिंह-सीडी को 25 अतिथियों महिलाओं ने बटेर पालन उमक: रक्षावास तथा आय बढ़ाने का मंत्र सीखा। कार्यक्रम के मुख्य अतिथि भारतीय कृषि अनुसंधान परिषद के निदेशक डॉ. पीके शीव ने, अध्यक्षता डॉ. एस के शर्मा ने, कार्यवाहता का मुखभार पीए प्रमनकांत के साथ सुकृ हो आ. डॉ. शीव ने कार्यक्रम अंत में सभी किसानों के लिये सहाय फंड प्रदान कराती है और वे फंड देती है।

किसानों को दिखाया मशीन से कैसे निकलते हैं अंडे

अजय निदेशक श्री शीव ने वैज्ञानिकों का धन्यवाद व्यक्त करते हुए, उन्होंने किसानों को बटेर पालन से जुड़े सवाल पूछे। बटेर पालन फंड प्रदान कराती है और वे फंड देती है।

जिल में निदेशक राह चुके डॉ. शीव ने बताया अतिथियों किसानों के लिये सहाय फंड प्रदान कराती है और वे फंड देती है। वे बताते हैं कि इस फंड में अतिथियों को भी अपने बच्चों को अपनी शिक्षा नहीं दे

कृषि विज्ञान केंद्र महासमुंद द्वारा विभिन्न ग्रामों में आयोजन

संरक्षित खेती विषय पर 5 दिवसीय प्रशिक्षण

कृषि विज्ञान केंद्र महासमुंद द्वारा बायोटेक किसान परियोजना अंतर्गत अमन पय न्यूज के तहत अतिथियों को बटेर पालन संबंधी शिक्षा का कार्य दिवसीय प्रशिक्षण का आयोजन 6 से 10 दिवसीय तक किया गया। 25 महिलाओं को प्रशिक्षण देना, 3 को ड्रम उपकरण पालन, 8 को ड्रम अलान, 9 को कृषि विज्ञान केंद्र परियोजना में 5 वर्ष के करीब 100 कुत्तों को पालना, इत्यादि का कार्य किया गया।

जिल में अतिथियों को प्रशिक्षण 50 से अधिक कुत्तों द्वारा प्रदान किया जा रहा है। 9 दिवसीय को 25 महिलाओं का अतिथि केंद्र के पालन निदेशक एचएस तोमर, डॉ. पी.के. शीव, डॉ. साकेत दुबे, श्रीमती रजनी आगारे, कुणाल चंद्राकर तथा डॉ. सत्येंद्र गुप्ता के द्वारा प्रशिक्षण दिया गया।

कृषि विज्ञान केंद्र में कुत्तों को पालने के लिए सहाय फंड प्रदान कराती है और वे फंड देती है।

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Major achievements of DBT Biotech-KISAN Hub (2020-22)

- ★ Total **148 hectares** of land covered under biofortified rice cultivation, rice fallow pulse and vegetable production with poly-mulch and drip system.
- ★ Total **150 (80 additional)** farm families covered during 2021-22 which includes 8 SC and 49 ST farm families.
- ★ Total **29 technological interventions** introduced at farmer's field.
- ★ **Successful Intervention:** Scientific vegetable production with NRM techniques Rice-fallow pulse production with chick pea, lathyrus, linseed and Biofortified rice cultivation with Zinco MS and DRR Dhan 45.
- ★ **Significant yield increase:** Due to introduction of many promising intervention the yield of Chickpea, Linseed, Tomato, Cucumber, Bottle guard, and Bitter guard has been increased 18, 21, 128, 83.8, 84.6 and 45.5 percent than compared to farmer practices in Rabi. In other hand, Paddy (DRR Dhan - 42), and Pigeon pea (Rajeev Lochan) yield also increased by 20 and 36.65 percent respectively.
- ★ As a tangible product, Biotech-KISAN **Tricho Card** produced at main hub.
- ★ Total **1486 cc** (worth of 1.48 lakh) of native *Trichogramma spp.*, (*Trichogramma japonicum* and *Trichogramma chilonis*) has been produced and distributed to farmers under DBT Biotech KISAN project. About **297.76 ha** of crops covered during Rabi/Kharif under this initiative and 740 farm families benefitted.
- ★ Total **9 units of Low-cost shade net house** established at Farmer's field to produce cucumber and tomato.
- ★ The sum of total **Rs. 56.17 lakhs** of additional income generated (Rs. 37,420 / Farm Family).
- ★ **Three FPGs and One FIG** (Vegetable, Goat and Biopesticides) formed.

- ★ Demonstrated the scientific goat farming with **Barbari and Sirohi** breeds.
- ★ As a capacity building programme initiatives, total **106 trainings, 69 demonstrations, 74 farmer-scientist Interface** etc organized. As a total, **11,551 farmers benefited** under various capacity building initiatives. Further, GEO-TAGGING photographs uploaded in the Biotech-KISAN portal (<https://icarbiotechkisanhub.in/>).
- ★ Total **120 farmers** benefitted under Farmers Fellowship programme from three Aspirational Districts namely Korba, Mahasamund and Rajnangaon.
- ★ **Eco-friendly technologies:** Biofertilizer such as *Azospirillum* and Phosphate Solubilizing Biofertilizers (PSB), bioagents *Trichoderma*, *Pseudomonas fluorescens* and *Trichogramma*; Biopesticides *Bacillus thuringensis*, *Metarhizium anisoplae*, *Baveria bassiana* are popularised for mass adoption.
- ★ **Improved varieties introduced:** Nutri-rich biofortified rice variety (Zinco rice MS & DRR Dhan - 42, 53 and 45), Indira aerobic -1 for drought tolerant, Rajeswari (IGKV R-1), Indira Maheshwari, MTU - 1010 for Insect-pest and diseases resistant. In addition, Chickpea (RVG 201 & 202), Linseed (Deepika), Tomato (Arka Rakshak - IIHR), Drum stick (PKM – 1, TNAU), Cucumber (Krish - VNR), Bottle guard (Kashi Kirti - IIVR), Bitter guard (Racer - BASF) and Ivy guard (Indira Kundru - 35) varieties also promoted.
- ★ **Model quail farming unit** established at KVK, Mahasamund under Tinkering laboratory to promote quail farming in the aspirational districts of Chhattisgarh.
- ★ As a success story, farmer Mr. Lakhan Lal Kolyare generated additional income of **Rs. 4,60,000** from 2.5 hectare of integrated farming unit established under Biotech-KISAN project.
- ★ Total **16 (11 Men and 5 Women)** biotech-Kisan fellows trained to become master-trainers to help the fellow farmers to adopt productive technological interventions.
- ★ About **57 migrant farmers** returned to villages during COVID-19 pandemic and benefitted under these initiatives.



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