

Building Climate Resilience of Indian Smallholders through Sustainable Intensification and Agro-ecological Farming Systems to Strengthen Food and Nutrition Security: www.resilienceindia.org

RESILIENCE

OUAT, Bhubaneswar Project progress and results achieved



NIBIO
NORWEGIAN INSTITUTE OF
BIQECONOMY. RESEARCH.



IWMI
International
Water Management
Institute

MSSRF
Science for Sustainable Development



Speaker: Prof. L.M.Garnayak



Norwegian Embassy

This project has received funding from the Ministry of Foreign Affairs, Norway/ the Norwegian Embassy, New Delhi, under Grant Agreement No. IND-15/0010

Achievement Kharif- 2020

RESILIENCE



NIBIO

NORWEGIAN INSTITUTE OF
BIOECONOMY RESEARCH



Results : 2019-20 Rabi season

Ganjam District

Rabi, 2019-20 Achievement, Ganjam, Cluster-I, Surada (Lathipada, Sorisabilli)

Sl. No.	Title of the experiment	Crop/var.	Area (ha.)/No.	Parametric data		Yield (q/ha.)	
				FP	RP	FP	RP
1	Integrated Nutrient Management	Greengram/IPM-02-14	04/10	No.of pods/plant-8.6	No.of pods/plant-12.8	2.8	4.4
2	Integrated Pest Management	Greengram/IPM-02-14	04/10	Aphids/leaf-3.2	Aphids/leaf-0.4	2.8	3.8
3	Suitable Greengram var. with full package of practices	Greengram/IPM-02-14	04/10	YMV-14.4% No.of pods/plant-8.3	YMV-0 No.of pods/plant-13.2	2.8	4.8
4	Suitable Blackgram var. with full package of practices	Blackgram/PU-31	04/10	No.of pods/plant-6.7	No.of pods/plant-11.4	2.5	4.1
5	Assessment of Chilli varieties in high summer	Chilli/Arka Nilachal Prava, Daya	0.6/04	No.of fruits/plant-114 Thrips/twig-4.4/Mites/leaf-2.2	No.of fruits/plant-146 Thrips/twig-1.4/Mites/leaf-0.4	82.4	96.8

Rabi, 2019-20 Achievement, Ganjam, Cluster-I, Surada (Lathipada, Sorisabilli)

Sl. No.	Title of the experiment	Crop/var.	Area (ha.)/No.	Parametric data		Yield (q/ha.)	
				FP	RP	FP	RP
6	Assessment of yield of Brinjal varieties	Brinjal/Pusa Kranti, B-5	0.4/04	No. of fruits/plant-32.4	No. of fruits/plant-48.6	203	228
7	Management of Shoot & Fruit borer in Brinjal	Brinjal/Pusa Kranti, B-5	0.4/04	Affected fruits(%)-14.3	Affected fruits(%)-4.2	196	212
8	Assessment of performance of Tomato var. against Bacterial wilt disease	Tomato/ Sakhyam, Arka Rakshyak	0.4/04	Bacterial wilt %-12.4	Bacterial wilt %-0	192	218
9	Management of Fruit borer in Tomato	Tomato/ Sakhyam, Arka Rakshyak	0.4/04	Affected fruits(%)-13.6	Affected fruits(%)-3.2	194	224
10	Assessment of Cauliflower var. in Rabi season	Cauliflower/Fujiya ma, Contesa, White marble	0.3/03	Avg. head wt (kg)-0.6 kg	Avg. head wt (kg)-0.75kg	182	196

Rabi, 2019-20 Achievement, Ganjam, Cluster-II, Rangeilunda (Chikarada & Sasanpadar)

Sl. No.	Title of the experiment	Crop/var.	Area (ha.)/No	Parameters		Yield (q/ha.)	
				FP	RP	FP	RP
1	Integrated Nutrient Management	Greengram/ IPM-02-14	03/22	No.of pods/plant-8.2	No.of pods/plant-12.6	3.0	4.6
2	Integrated Pest Management	Greengram /IPM-02-14	03/25	Aphids/leaf-2.8	Aphids/leaf-0.4	3.0	4.2
3	Suitable Greengram var. with full package of practices	Greengram /IPM-02-14	02/16	YMV-15.1% No.of pods/plant-8.6	YMV-0 No.of pods/plant-13.4	3.0	4.9
4	Assessment of Chilli with full package & practices	Chilli/Arka Nilachal Prava, Daya & M-14	1.4/15	No.of fruits/plant-114 Thrips/twig-4.4/Mites/leaf-2.2	No.of fruits/plant (Prava-152, Daya -144, M-14 -146 Thrips/twig-Prava- 1.2, Daya 1.4. M-14- 1.4 Mites/leaf: Prava 0.3, Daya 0.5, M-14 0.4	84.1	Prava: 102.4 Daya: 95.4 M-14: 96.6
5	Integrated Nutrient Management in Chilli	Chilli/Arka Nilachal Prava, Daya & M-14	1/10	No.of fruits/plant-114	No.of fruits/plant: Prava:-148, Daya-138. M-14-140	82.2	Prava: 98.2 Daya: 92.0 M-14: 93.4



Lessons learnt and achievements as per project objectives

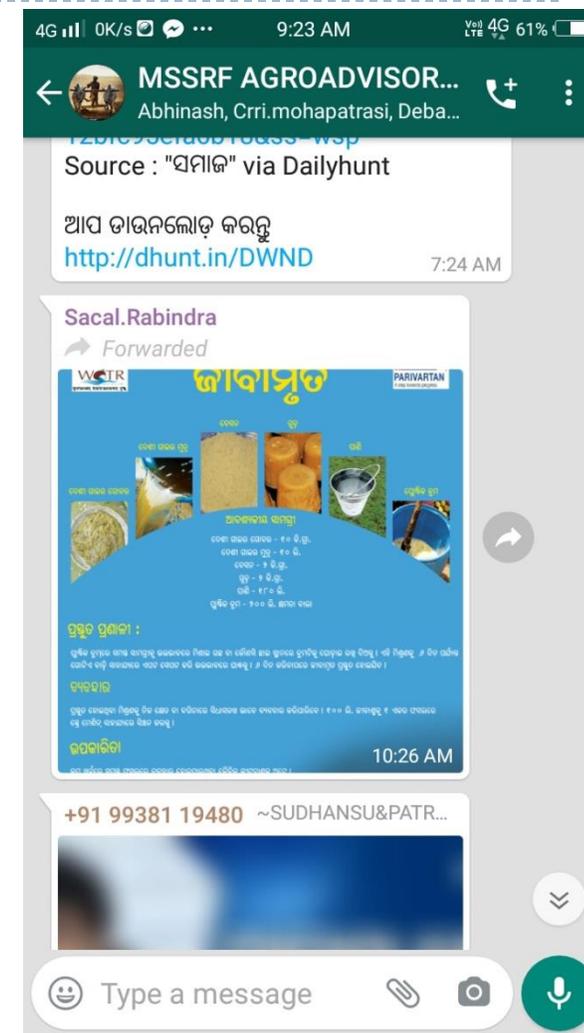
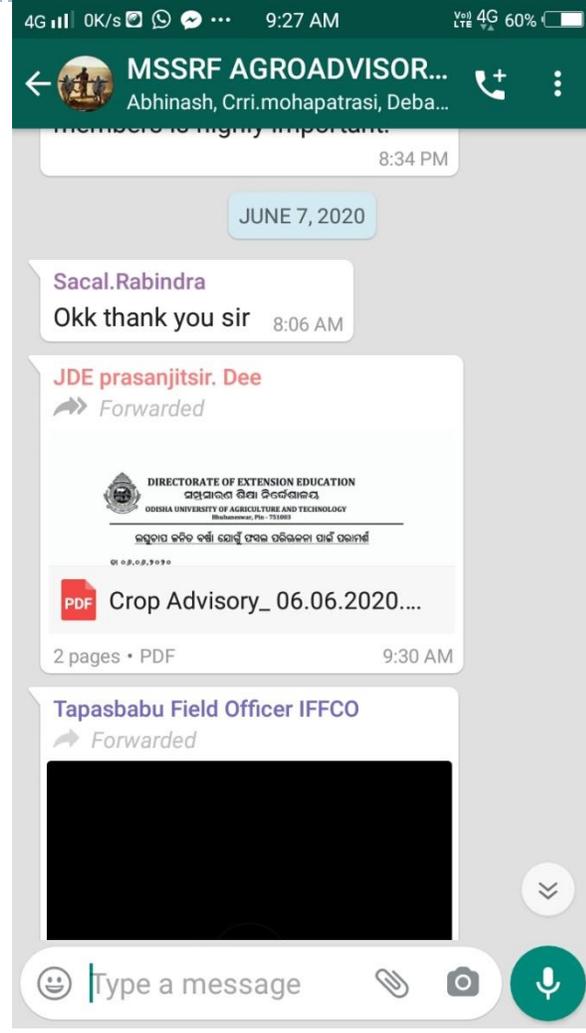
Lessons learnt	Measures taken
In Ganjam- II Cluster it was observed that Rice varieties below 140 days duration are risky from both biotic and abiotic stresses. Last year the crop damage was observed in Rice var. Bina- I I, Swarna shreya and Sahabhazi dhan due to cyclonic rains during October and crop damaged by wild bore because of their early maturity.	Those varieties are replaced with varieties of more than 140 days duration : Hasant, Kalachampa, MTU 1061 and one variety Pradhan Dhan(160 days) has been introduced to utilise the available soil moisture in low lands of Sasanpadar village.
Due to COVID -19 situation the farmers could not able to move to farmland for some days so that they unable to take care and sale produce from vegetable crops.	Project came to their rescue by supplying seeds of different 'Greens' during COVID -19 period as a contingent measure and farmers could generate good returns from this crop within a short period in summer months prior to Kharif season.
During this COVID-19 period regular field monitoring became a problem and we could able to arrange few training programmes only.	In addition to VKC, We have created whatsApp group of farmers in both Ganjam I & II and regularly send text messages, short technology videos and farmers could interact with project scientists regarding their field problems



Training programme for migratory returnees at project village Lathipada & Chikarada villages of Ganjam during COVID-19 with support of KVK



Text and Video messages given to farmers during COVID-19 period



Crop Advisory based on IMD predictions issued to Project farmers

COMPOSITE AGROMETEOROLOGICAL ADVISORY BULLETIN

for
ODISHA

NO. 368/2020
Issued on: 10th August 2020 (Monday)
Forecast period: 11.08.2020 – 15.08.2020

Issued by

India Meteorological Department
State Agro-meteorological Advisory Services Unit
Meteorological Centre, Bhubaneswar
In collaboration with
Odisha University of Agriculture and Technology, Bhubaneswar &
Department of Agriculture, Govt. of Odisha

4G 0.1K/s 9:31 AM 59%

JDE prasanjitsir. ...
May 20, 6:57 AM

India Meteorological Department
Earth System Science
Organisation
(Ministry of Earth Sciences)

HOURLY UPDATE ON SUPER CYCLONIC STORM 'AMPHAN OVER NORTH WEST BAY OF BENGAL & ADJOINING WEST CENTRAL BAY OF BENGAL.

BULLETIN NO. 1

DATE: 20-05-2020 TIME OF ISSUE: 0630 HRS IST

DATE/TIME (IST) OF OBSERVATION	0530 HRS IST OF 20-05-2020 / 0000 UTC OF 20.05.2020
CURRENT LOCATION LATITUDE/LONGITUDE	SUPER CYCLONE AMPHAN CENTRED AT 0530 HRS IST OF TODAY, THE 20TH MAY 2020, AS AN EXTREMELY SEVERE CYCLONIC STORM OVER NORTHWEST BAY OF BENGAL NEAR LAT. 19.1°N AND LONG. 87.5°E, ABOUT: <ul style="list-style-type: none"> 155 KM NEARLY SOUTH OF PARADIP. 280 KM SOUTH-SOUTHWEST OF DIGHA. 425 KM SOUTH-SOUTHWEST OF KHEPUPARA (BANGLADESH)
CURRENT INTENSITY NEAR CENTER	170-180 KMPH GUSTING TO 200 KMPH.
OBSERVATIONS FROM THE COAST	WINDSPEED: PARADIP-96, CHANDBALI-65, BHUBANESHWAR-41, BALASORE-41, PURI-39 AND GOPALPUR-30 KMPH. RAINFALL: PARADIP-144, CHANDBALI-56, BHUBANESHWAR-35, BALASORE-39, PURI-58 AND GOPALPUR-08 MM SINCE 08:30 IST OF 19 MAY 2020.
PAST MOVEMENT	MOVED NORTH-NORTHEASTWARDS WITH A SPEED OF 14 KMPH DURING PAST 6 HOURS.
FORECAST MOVEMENT, INTENSITY AND LANDFALL	TO MOVE NORTH-NORTHEASTWARDS AND CROSS WEST-BENGAL-BANGLADESH COAST BETWEEN DIGHA AND HATIYA CLOSE TO SUNDEBANS DURING AFTERNOON TO EVENING OF TODAY WITH A WIND SPEED OF 155-165 KMPH GUSTING TO 185 KMPH.

4G 0K/s 9:27 AM 60%

MSSRF AGROADVISOR...
Abhinash, Crri.mohapatra, Deba...

8:34 PM

JUNE 7, 2020

Sacal.Rabindra
Okk thank you sir 8:06 AM

JDE prasanjitsir. Dee
Forwarded

DIRECTORATE OF EXTENSION EDUCATION
ସମ୍ପର୍କର ବିକାଶ ବିଭାଗ
ODISHA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY
Bhubaneswar, Pin - 751003
ଉତ୍ପାଦନ କରିବା ପାଇଁ ଯୋଗ୍ୟ ଫାଇଲର ପାଇଁ ଠିକଣା
ଓ.ପ.ଏ.ଏ.ଏ.ଏ.ଏ.

PDF Crop Advisory_ 06.06.2020....
2 pages • PDF 9:30 AM

Tapasbabu Field Officer IFFCO
Forwarded

4G 1K/s 9:28 AM 60%

Rabindra Norway
June 3, 2:33 PM
DIRECTORATE OF EXTENSION EDUCATION
ସମ୍ପର୍କର ବିକାଶ ବିଭାଗ
ODISHA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY
Bhubaneswar, Pin - 751003

ରାଷ୍ଟ୍ରୀୟ ପାଇଁ ସର୍ବତ୍ର ସୂଚନା

ଓ.ପ.ଏ.ଏ.ଏ.ଏ.ଏ.

ବର୍ତ୍ତମାନ ପରିସ୍ଥିତିର ସମାବେଶ ପଢ଼ିବା ପାଇଁ ଏବଂ ଝିଟିକାକୁ ପଢ଼ିବା ପାଇଁ ନିମ୍ନ ସୂଚନା ।

- ପଢ଼ିବାପାଇଁ ସର୍ବତ୍ର ବନ୍ଦୁକ ଭାବେ ଉଦ୍ଦିଷ୍ଟ ଅଟେ । କିନ୍ତୁ ଝିଟିକା ବନ୍ଦୁକ ଆସି ନାହିଁ କିମ୍ବା ଉଦ୍ଦିଷ୍ଟ ନାହିଁ ।
- ପଢ଼ିବାପାଇଁ ଝାଟାକୁ ୧୬-୧୯ କି.ମି. ଦୂରରେ ଉଦ୍ଦିଷ୍ଟ ଏବଂ ଦିନକୁ ୧୫୦-୨୦୦ କି.ମି. ଉଦ୍ଦିଷ୍ଟ କିନ୍ତୁ ଝିଟିକା ବନ୍ଦୁକ ଅଳ୍ପ ଦୂର ଡେଇଁ ଡେଇଁ ପାରିବ ।
- ପଢ଼ିବାପାଇଁ ପୂର୍ଣ୍ଣ ଅଧିକାର ପରେ ବନ୍ଦୁକ ଭାବେ ଏକ ନିର୍ଦ୍ଦିଷ୍ଟ ପ୍ଲାନରେ (ପଢ଼ିବାପାଇଁ) ପୂର୍ଣ୍ଣ ଉଦ୍ଦିଷ୍ଟ କରିବାକୁ ଅନୁରୋଧ ।
- ପଢ଼ିବାପାଇଁ ଝିଟିକା ଉଦ୍ଦିଷ୍ଟରେ ଝିଟିକାକୁ ଉଦ୍ଦିଷ୍ଟ କରିବାକୁ ଏବଂ ବନ୍ଦୁକ ଏବଂ ଝିଟିକା ସାଧାରଣତଃ ଝିଟିକା ସବୁଜ କିମ୍ବା ଧୂସର ରଙ୍ଗର । ଝିଟିକା ସବୁ ଝିଟିକା ପଢ଼ିବାକୁ ଦୁର୍ଲ୍ଲଭ । ସେଥିପାଇଁ ରାଷ୍ଟ୍ରୀୟ ଅନୁରୋଧ କରାଯାଉଛି, ସେମାନେ ଝିଟିକା କାଟିବା କାଳରେ ବନ୍ଦୁକ ନ ଝାଳି ନିକଟସ୍ଥ କୃଷି ବିଭାଗ ଦେଇ କିମ୍ବା କୃଷି ବିଭାଗର ଅଧିକାରୀଙ୍କୁ ଯୋଗାଯୋଗ କରନ୍ତୁ ।

ବି.ପ୍ର.: ଅଧିକ କାର୍ଯ୍ୟ ପାଇଁ ନିକଟସ୍ଥ କୃଷି ବିଭାଗ ଦେଇ, କୃଷି ଅଧିକାରୀଙ୍କ ସହ ଯୋଗାଯୋଗ କରନ୍ତୁ ।

କୃଷି ଓ ଖାଦ୍ୟ ଉତ୍ପାଦନ ନିର୍ଦ୍ଦେଶାଳୟ, ଓଡ଼ିଶା ଏବଂ ସମ୍ପର୍କର ବିକାଶ ବିଭାଗ, ଓଡ଼ିଶା

Work-plan for Kharif 2020

A. Demonstration of CSA Technologies

Crop demonstrations with different management practices.

B. Capacity Building & Knowledge Sharing

Trainings & Exposure Visits for Farmers , Farm Women & Rural Youths

Organizing Agri input Dealers & Farmers' Interface

Field days & Farmers' Fair

C. Dissemination Strategies & Policy Framework

Organizing Visits of Govt. Line Department Officials to Project sites

D. Documentation and data recording

Regularly data is being recorded by field support staff



Achievement Kharif, 2019 & 2020 Ganjam-I

Sl. No.	Demonstration	Details of Technology	Kharif 2019 achievement	Kharif 2020		Remarks
			Ha/No	Target Ha./no.	Achievement Ha./no.	Change in intervention due to COVID-19 impact
1	Crop diversification from Rice to Maize + Cowpea & Ragi in upland	Crop diversification to Maize, Maize+ Cowpea, Sweet corn & Ragi	02/08	05/15	05/17	Increase in area to involve more man days. Group discussion & door to door contact will be done. More emphasis will be given to Whatsap video call.
2	Varietal evaluation of Rice	Climate Resilient Rice var. Swarna Shreya, Hasanta, Swarna Sub-1, Prativa, Maudamani	4.5/11	12/30	12/30	Increase in area to involve more man days. Input will be provided to door step of farmers
3	Integrated pest management	IPM with emphasis to Blast disease, Stem borer & BPH management Integrated Pest Management in Rice- Nursery treatment with Cartap Hydrochloride @ 20kg/ha, Tricyclazole @ 500gram/ha. for Blast disease, Neem (1500 ppm) @ 1.5 lt./ha at 40 DAT & Bt. @ 1lt./ha at 55 DAT ,Trichocard @ 30/ha, Pheromone trap @ 10/ha for Stem borer & other major pest .Need based application of Imidacloprid +ethioprole @ 150gram/ha for BPH management.	06/15	12/30	12/30	Increase in area to involve more man days. For popularization of IPM model. Method demonstration in small group of 05 people with social distancing. Distribution of Masks to beneficiaries.
4	Integrated Nutrient	Integrated Nutrient Management in Rice-	05/12	12/30	12/30	Method demonstration in small group of 05

Achievement Kharif, 2019 & 2020 Ganjam-1

Sl. No.	Demonstration	Details of Technology	Kharif 2019 Achievement Ha/No	Kharif 2020		Remarks
				Target Ha./no.	Achievement Ha./no.	
5	Integrated weed management	Integrated Weed Management in Rice- Application of Pre-emergence herbicide Pretilachlor @ 1.5lt/ha. with in 3-5 DAT followed by post emergence weedicide-Bispyribac sodium @ 200ml/ha. at 25 DAT	10/25	16/40	16/40	To reduce cost of weeding. Method demonstration in small group of 05 people with social distancing
6	Kitchen gardening	Kitchen gardening with seasonal vegetables with lemon, papaya, banana etc.	0.2/1	15nos	0.2/10	To provide nutritional security. To engage more man days
7	Mushroom cultivation	Paddy straw mushroom	-	20 nos		To increase income of land less farmers. To attract rural youth for self employment
8	Backyard poultry rearing	Vanaraja, Hansili, Chhabro, Kadaknath breeds of poultry	-	40 nos		To increase income of land less farmers. To attract rural youth for self employment
9	Mechanized Transplanting of Rice	Mat nursery and mechanical transplanting	-	1/3	0.2/1	New introduction in the project village
10	Off season Cauliflower	Suitable var. will be introduced	-	0.6/03	0.6/03	New introduction for

Achievement Kharif 2019 & 2020, GANJAM-II

Sl. No.	Demonstration	Details of Technology	Kharif 2019	Kharif 2020		Remarks
			Achievement Ha/No	Target Ha/No	Achevement Ha/No	
1	Varietal Evaluation of Rice	Rice var. Swarna Sub-1, Hasant, Kalachampa , Pradhan & MTU 1061	3.32/13	02/10	06/19	<ul style="list-style-type: none"> • Increase in area to involve more man days • Group Discussion& Input will provided to door to door steps of farmers
2	Integrated Pest Management	Integrated Pest management I which emphasis in Blast diseases, Stem Borer & BPH management	9.16/30	08/25	18/35	<ul style="list-style-type: none"> • Increase in area to involve more man days • Popularization of IPM model • Method of demonstration in small group • Distribution of mask & Gloves to beneficiaries
3	Integrated Nutrient Management	Integrated Nutrient Management in Rice- Green manuring, application of ZnSo4@ 25kg/ha, Soil test based fertilizer application & with Leaf colour chart at critical stages	6.32/17	06/15	8/25	<ul style="list-style-type: none"> • Method of demonstration in small group of 05 people with social distancing • Distribution of mask & Gloves to beneficiaries
4	Integrated weed Management	Integrated Weed Management in Rice- Application of Pre-emergence herbicide Pretilachlor @ 1.5lt/ha. with in 3-5 DAT followed by post emergence weedicide-	7.12/19	04/15	6/21	<ul style="list-style-type: none"> • To reduce cost of weeding • Method of demonstration in small group of 05 people with social distancing

Achievement Kharif 2019 & 2020, GANJAM-II

Sl. No.	Demonstration	Details of Technology	Kharif 2019	Kharif 2020		Remarks
			Achievement Ha/No	Target Ha./no.	Achievement Ha./no.	
5	Mechanical Transplanting of Rice	Mat nursery and mechanical transplanting		0.4/05	1.6/4	<ul style="list-style-type: none"> • New introduction for timely plantation of rice • To reduce cost of cultivation • To ensure timely transplanting • All operation will be done as per COVID-19 precautionary measures
6	Kitchen garden	Kitchen gardening with seasonal vegetables with lemon, papaya, banana etc.	05	15		<ul style="list-style-type: none"> • To provide nutritional security • To engage more man days • Engagement of farm womens
7	Backyard Poultry rearing	Vanaraja, Hansili, Chhabro, Kadaknath breeds of poultry		100 nos		<ul style="list-style-type: none"> • To increase income of landless farmers • Self employment of Rural youth

Distribution of Seed and Fertiliser at Chikarada, Ganjam maintaining COVID-19 SOP



IWM: Application of Pretilachlor as Pre-emergence application in Chikarada Village of Ganjam district

INTERNATIONAL COLLABORATIVE PROJECT
RESILIENCE
INTEGRATED WEED MANAGEMENT

Area of Demonstration 10 ha Variety : SWARNA SUB-1

VILLAGE: CHIKARADA BLOCK: RANGEILUNDA DIST: GANJAM

FUNDED BY: MINISTRY OF FOREIGN AFFAIRS, NORWAY.
IMPLEMENTED BY: ODISHA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY, BHUBANESWAR



INM: Transplanting of Rice after incorporation of Sesbania as green manuring in Chikarada Village of Ganjam district



Demonstration of Mechanical Transplanting of Rice, Sasanpadar, Ganjam



VARIETAL DEMONSTRATION OF RICE



**Village: CHIKARDA ,
Variety: MTU-1061**



**Village: SASANPADAR ,
Variety: HASANT**



**Village: SASANPADAR
Variety: PRADHAN**



Distribution of Seed and Fertiliser at Sorisabili, Ganjam maintaining COVID-19 SOP



Demonstration of drought tolerant Rice Var. Swarna Shreya



Demonstration of Mechanical Transplanting of Rice, Surada, Ganjam



Demonstration on Crop Diversification to Maize, Maize+ Vegetables, Sweet corn at Lathipada, Surada, Ganjam



INM: Transplanting of Rice after incorporation of Sesbania as green manuring in Lathipada, Surada of Ganjam district



IWM: Application of Pretilachlor as Pre-emergence application in Sorisabili Village, Surada of Ganjam district





Covid-19 Lockdown



Covid-19 Lockdown



Phone in Programme conducted during Covid-19 Lockdown



Organising Plant Clinic at Chikarada VKC, identifying Pest & Disease & Spraying of Pesticides at Chikarada Village



IMPACTS OF GANJAM-II

Sl. No.	Demonstration	Details of Technology	Kharif 2019	Kharif 2020	Remarks
			Ha/No	Ha/No	
1	Varietal Evaluation of Rice	Rice var. Swarna Sub-1, Hasant, Kalachampa , Pradhan & MTU 1061	3.32/13	06/19	Increase in area 13ha /28 farmers
2	Integrated Pest Management	Integrated Pest management in which emphasis in Blast diseases, Stem Borer & BPH management	9.16/30	18/35	IPM Area increased 06 ha including 10 nos of farmers
3	Integrated Nutrient Management	Integrated Nutrient Management in Rice-Green manuring, application of ZnSo4@ 25kg/ha, Soil test based fertilizer application & with Leaf colour chart at critical stages	6.32/17	8/25	INM area increased 05 ha including 12 nos of farmers
4	Integrated weed Management	Integrated Weed Management in Rice- Application of Pre-emergence herbicide Pretilachlor @ 1 lt/ha. with in 3-5 DAT followed by post emergence weedicide-Bispyribac sodium @ 200ml/ha. at 25 DAT	7.12/19	6/21	Increased area 03 ha including 08 nos of farmers



Thank You : Stay Safe, Stay Indoor

