हर कदम, हर डगर
किसानों का हमसफर
भारतीय कृषि अनुसंधान परिषद

Agrisearch with a human touch

Annual Action Plan

(2020-21)

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On Farm Testing (Discipline–Wise Summary)

Discipline	Crop	Trials
Agronomy	Linseed-chickpea	3
	Blackgram	3
	Toria	3
Horticulture	Tomato	4
	Strawberry	3
Soil Science	Rice	9
	Toria	3
Plant Protection	Indian beans	5
	cucurbits	5
Animal Science	Poultry	6
	Piggery	3
Total		

On Farm Trial – Agronomy

Title		Intercropping of linseed and Chickpea	Weed management in Kharif Blackgram
Thematic area		Crop Management	Weed Management
Problem diagnosed		Low income due to single crop production	Low production due to weed infestation
Technology	T_1	Intercropping of linseed with chickpea (4:2)with variety Shekhar and chickpea variety BG-256 Seed rate: Linseed : 20kg/ha Chick pea : 60 kg/ha	Pre-emergence application of pendimethalin @1 kg/ha
	T_2	Farmer practice	Farmer practice
Source of technology		AAU (RARS, Shillongani)	AAU (RARS, Shillongani)
No. of trial (Area)		3 (1.0 ha)	3 (1.0 ha)
Parameter for assessment		1. Seed yield (q/ha) 2. B:C	Weed population and dry matter accumulation, weed control efficiency, Date of sowing and harvest, plant height, plant stand, seed yield and B:C

On Farm Trial – Agronomy

Title		**Varietal performance of late sown Toria variety Jeuti (JT-90-1)**
Thematic area		Varietal performance
Problem diagnosed		Low production due to late sowing
Technology	**T_1**	Toria variety Jeuti (JT-90-1)
	T_2	Local variety
Source of technology		AAU, Jorhat
No. of trial (Area)		3 (1.0 ha)
Parameter for assessment		1. Seed yield (q/ha) 2. B:C

On Farm Trial – Horticulture

Title	**Varietal performance of Tomato variety Arka Abhed and Arka Samrat**	**Varietal performance of tissue culture strawberry variety Sweet Charlie and Winter Dawn**
Problem Diagnosed	Low yield of local available variety	Low yield of runner propagated plants susceptible to *botrytris* and anthracnose fruit rot
Thematic area	Varietal evaluation	Varietal evaluation
Technology	**T_1** =Arka Abhed **T_2** = Arka Samrat **T_3** = Arka Rakshak **T_4**= Farmers variety	**T_1** = Tissue culture strawberry variety Sweet Charlie and Winter Dawn **T_2** = Runners propagated strawberry variety Sweet Charlie and Winter Dawn
Source of Technology	ICAR-IIHR, Bengaluru, 2018	TERI, New Delhi
No. of Trial (Area)	4 (0.26 ha)	3 (0.06 ha)
Parameters of assessment/ refinement	Plant height, No. of fruits/plant, Av. Fruit weight, Yield/plant, Yield/ha, Pest & disease incidence, B:C ,Farmers reaction,	Plant spread , Av. Fruit weight, No. of fruits/plant, Yield/plant, Yield/ha, B:C ratio, Pest & disease incidence

On Farm Trial – Soil Science

Title		**Response of Rice to Zn solubilizing bacteria Zn nutrition (Var.- Ranjit Sub 1)**	**Response of K solubilizing bacteria in reduction of potassic fertilizer in Sali rice (Var.- Ranjit Sub 1)**
Thematic area		Nutrient management	Nutrient management
Problem diagnosed		Low yield due to Zn deficit in soil and unaware about ZSB	Unaware about the use of KSB to reduce the chemical fertilizer
Technology	T_1	RD of NPK @ 40:20:20 kg/ha + consortia of ZSB as seedling root dip treatment @ 3.5 kg/ha	RD of NPK @ 40:20:10 kg/ha + consortia of KSB as seedling root dip treatment @ 3.5 kg/ha
	T_2	RD of NPK @ 40:20:20 kg/ha + $ZnSO_4$. $7H_2O$ @ 25 kg/ha	RD of NPK @ 40:20:20 kg/ha
	T_3	Farmers practices	Farmers practices
Source of technology		AAU, Jorhat	AAU, Jorhat
No. of trial	**Area**	0.6 ha	0.6 ha
	Trial	3	3
Parameter for assessment		1. Initial and final NPK& Zn status 2. Plant height 3. Total tillers, effective tillers 4. Yield 5. B:C	1. Initial and final NPK status 2. Plant height 3. Total tillers, effective tillers 4. Yield 5. B:C

On Farm Trial – Soil Science

Title		**Combined effect of S and B on toria**
Thematic area		Soil management
Problem diagnosed		Imbalance application of fertilizer
Technology	**T_1**	State recommendation
	T_2	S @ 20 kg/ha + B @ 1.5 kg/ha + RD of NPK
	T_3	Farmers practices
Source of technology		AAU, Jorhat
No. of trial	**Area**	0.6 ha
	Trial	3
Parameter for assessment		1. Initial and final NPK ,S& B status 2. Plant height 3. Seed per siliqua 4. Seed and stover yield 5. B:C

On Farm Trial – Plant Protection

Title		**Management of *Helicoverpa armigera* in Indian bean by non chemical means.**	**Assessment of low cost bottle trap for management of fruit fly in cucurbits.**
Thematic area		Integrated pest Management	Product Evaluation (Efficacy)
Problem diagnosed		Farmers are frequently applying high doses of insecticides to manage *H. armigera*,	Irrational use of pesticides is the tool to farmers which results in increase of expenditure besides being harmful
Technology	**T_1**	Bio intensive module : (i) Monitoring through the pheromone traps, (ii)Spraying of Neem based pesticides (iii) Hand picking of bigger larvae (iv) Spraying of *Ha*NPV	Use of Bottle trap with lure (Cue lure) + BAT (50g jaggery+10g Fipronil 5% SC in 5 L water) spray at an interval of 15 days
	T_2	Farmers practice – Spraying of wide range of insecticides.	Farmers practice – Repeated spraying of overdose wide range of insecticides.
Source of technology		NAU, Navsari	IIHR, Bangalore
No. of trial	**Area**	0.2 ha	0.3 ha
	Trial	5	5
Parameter for assessment		• No of marketable fruits/plant • No of damaged fruits/plant •Yield/unit area •Benefit Cost Ratio •Net return	• No of marketable fruits/plant • No of damaged fruits/plant • % reduction in fruit fly infestation Yield/unit area • Benefit Cost Ratio • Net return

On Farm Trial –Animal Science

Title		**Scientific feeding of local chicken (Daothaigir) to increase growth and egg production**	**Introduction of HD-K75 breed of pig under intensive system**
Thematic area		Feeding management	Breed introduction
Problem diagnosed		Low productivity of indigenous chicken due to improper feeding	Low productivity of the indigenous pigs
Technology	**Control**	Scavenging /foraging	9 nos HD-K75 piglets (3 Male + 6 Female)
	T_1 **T2** **T3**	Scavenging/ Foraging + supplementary concentrate feeding	Farmers' practice- performance of indigenous pig
Source of technology		College of Veterinary Science, AAU, Khanapara, Assam	College of Veterinary Science, AAU, Khanapara, Assam
No. of trial		**3**	3
Parameter for assessment		1. Weight gain by the birds 2. Age at 1st lay 3. Hen day egg production 4. Hens house egg production 5. B:C	1. Growth performances 2. Age at first heat 3. Nos. of piglets born per farrowing 4. Occurrence of diseases

On Farm Trial –Animal Science

Title		**Red Spectrum of light to improves egg production in chicken**
Thematic area		Housing management
Problem diagnosed		Less egg production of chicken due to less exposure to day light length
Technology	**Control**	Farmers practice
		T 1: Exposure to White light T 2: Exposure to Red spectrum light
Source of technology		NAINP, 2012
No. of trial		**3**
Parameter for assessment		1. Egg production 2. Weight of egg 3. % of increase production

FLD (Discipline–Wise Summary)

Discipline	Crop	No. of demos proposed
Agronomy	Mesta	10
	Mustard	5
	Salirice	10
Horticulture	Pumpkin	6
	Tapioca	4
	Ginger	4
Soil Science	Lentil	5
	Rice	7
	Foxtail millet	8
Plant Protection	Stored grains	5
	Oyster mushroom	8
	Cole crops	8
Animal Science	Poultry	5
	Dairy	6
	Quail farming	5
	Duckery	5
Fishery Science	Composite Fish culture	2
	IFS	2

Front Line Demonstration– Agronomy

Title		**Enhancement of retting process and fibre quality of Mesta through application of Microbial Consortia**	**Varietal performance of Mustard variety NRCHB101**
Thematic area		Microbial management	Varietal performance
Problem diagnosed		Low quality of fibre due to faulty retting process	Low production due to pre monsoon shower during maturity stage
Technology	**T_1**	Application of Microbial Consortia @ 2 kg /0.26 ha of Mesta	Mustard variety NRCHB101
	T_2	Farmer's practice	Local variety
Source of technology		CRIJAF , ICAR ,Barrackpur	AAU (RARS, Shillongani)
No of Demo (Area)		10 (2.0 ha)	5 (1.0 ha)
Parameter for assessment		1. Fibre quality 2. B.C.	1. Seed yield (q/ha) 2. B:C

Front Line Demonstration– Agronomy

Title		**INM in Sali rice**
Thematic area		Nutrient management
Problem diagnosed		Irrational use of chemical fertilizer
Technology	**T_1**	Organic manure @ 1 t/ha (on dry weight basis) mixed inocula of *Azospirillium amazonense* A-10 and *Bacillus megaterium P-5 @ 4 kg/ha (0.4 to 0.5 kg/* bigha), rock phosphate @ 10 kg P_2O_5 (56 kg/ha or 7.5 kg/ bigha), MOP @ 40 kg K_2O/ha (67 kg Potash/ha or 9 kg/bigha)
	T_2	Farmer's practice
Source of technology		AAU, Jorhat
No of Demo (Area)		10 (2.0 ha)
Parameter for assessment		1. Initial and final nutrient status in soil 2. Plant height, plant population, No. of panicle/hill, No. of seed/panicle 3. Grain Yield (q/ha) 4. B:C

Front Line Demonstration– Horticulture

Title	**Commercial cultivation of Pumpkin F1 Hybrid variety Arjuna**	**Popularization of Tapioca cultivation and its value added product in the district**
Thematic area	Varietal performance	Varietal performance
Technology	**Demo** Arjuna F1 **Check** var. Other hybrid	**Demo** Sree Jaya **Check** var. Other available variety
Source of technology	East West Seeds, 2014: POP, AAU, Jorhat	POP, AAU, Jorhat
Demo (Area)	6 0.4 ha	4 0.26 ha
Parameter for assessment	yield/ha, B: C ratio	yield/ha, B: C ratio

Front Line Demonstration– Horticulture

Title	**Organic cultivation of Ginger**
Thematic area	Organic cultivation
Technology	*Rhizome dip treatment with pseudomonas*@20g/L for 30min FYM/compost@ 25t as basal and 3t/ha each at 60DAP and 120DAP FYM, *Trichoderma*, neem cake mixture @ 100g/pit Aospirillum @ 2.5kg/ha as basal and 2.5kg at 120 DAP. **Check:** Farmer's Practice
Source of technology	POP, AAU, Jorhat
Demo (Area)	4 0.26 ha
Parameter for assessment	yield/ha, B: C ratio

Front Line Demonstration– Soil Science

Title	Foliar nutrition of lentil	Combined application of zinc and boron on rice (Var.: Ranjit Sub 1)
Thematic area	Nutrient management	Soil management
Problem diagnosed	Poor availability of nutrient and low yield	Soil mining due to no application of micronutrient.
Technology	Two sprays of 2% urea at branching (35 DAS) and pod initiation (75 DAS) stage	1.5 Kg B/ha + 5 kg Zn/ha +RD of NPK
Source of technology	RARS, Shillongani	AAU, Jorhat
Demo (Area)	5 (2.0 ha)	7 (1.5 ha)
Parameter for assessment	1.Initial and final status in soil (NPK) 2. Growth parameters of crop (Plant height, No of branch, No of por/plant, No of seed /pod) 3. Yield 4. B:C	1.Initial and final status in soil (NPK,Zn,B) 2. Growth parameters of crop (Plant height, Leaf no) 3. Yield attributing character(Fruit no/Plant) 4.B: C

Front Line Demonstration– Soil Science

Title	**Nutrient management in Foxtail millet**
Thematic area	Soil health
Problem diagnosed	Non judicious application of fertilizer
Technology	Crop: Foxtail millets N:P:K @ 20:10:10 kg/ha as basal dose
Source of technology	RARS, Gossaigaon, AAU
Demo (Area)	8 (1.5 ha)
Parameter for assessment	1. Initial &final soil NKP status 2. Growth parameters 3. Yield 4. B:C

Front Line Demonstration– Plant Protection

Title	**Safe storage of grains using hermetic storage bags**	Management of panama disease in banana.
Thematic area	Integrated Pest Management	Integrated Disease Management.
Problem diagnosed	Damage to the grains & seeds by stored grains pest	High damage to banana plantation at all stages.
Technology	T_1- Multilayered air tight bags. T_2-Farmers practice	•T1- 1. Diseases free suckers from disease free field, 2. Dipping of suckers in carbendazim (0.2%) for 30 minutes, 3. Application of neem cake @ 250 grams/plant, 4. Carbendazim drenching with 0.2% solution (2nd , 4th and 6th months after planting) 5. Carbendazim injection @ 3ml of 0.2% solution (3rd, 5th, 7th months after planting) T2-Farmers practice
Source of technology	Pest Control India, Mumbai	AAU, Jorhat, 2016
Demo (Area)	10 (10 places)	10 (10 units)
Parameter for assessment	• % Insect Infestation after 6 months,	•Yellowing of leaves, •Wilting

Front Line Demonstration– Plant Protection

Title	**Biointensive IPM package for the pests of cole crops**
Thematic area	Biological control
Problem diagnosed	DBM/cabbage butterfly are least responsive to chemical control methods which resulted in undefined spraying of wide ranges of insecticides
Technology	1. Border plantation of mustard crops against *Plutella xyllostella* (DBM) as trap crop, 2. Release of *Trichogramma chilonis, T.brassicae* at different stages of crop and at different intervals, 3. Mechanical collection of larvae, 4. Spraying of BT and NSKE at different intervals
Source of technology	NBAII, Bangalore
Demo (Area)	3(0.2 ha)
Parameter for assessment	1. Population of natural predators, 2. Mummified larvae, 3. Yield 4. B:C ratio

Front Line Demonstration– Animal Science

Title	**Assessment of productive performance of "Kamrupa" bird under backyard system of rearing.**	**Demonstration on effect of deworming and feeding of area specific mineral mixture in indigenous cattle on growth and reproductive performance**
Problem diagnosed	Low productivity of the indigenous chicken	Low growth and Delayed puberty in indigenous cattle
Thematic area	Breed introduction	Healthcare
Technology	Kamrupa chicken as quality chick inputs	Commercially available anthelminthic fenbandazole and area specific mineral mixture; AAUVETMIN
Source of technology	College of Veterinary Science, AAU, Khanapara, Assam	College of Veterinary Science, AAU, Khanapara.
No of Demo	5	6
Parameter for assessment	1. Weight gain at 30 days intervals 2. Hen day egg laying 3. Hens house egg layings 4. Occurrence of diseases 5. B:C	1. Faecal test before & after treatment 2. Growth performance 3. Age of puberty

Front Line Demonstration– Animal Science

Title	Popularization of rearing of Japanese Quail bird	Demonstration on productive performance of Vigova Super M broiler duck
Problem diagnosed	Lack of knowledge about Quail farming	Low productivity of the indigenous ducks
Thematic area	Breed introduction	Breed introduction
Technology	Quail bird as quality chick inputs	Rearing of broiler duck Vigova Super-M
Source of technology	CARI, Izatnagar	Central Poultry Development Organisation, Hessarghat, Bangalore
No of Demo	5	5
Parameter for assessment	1. Weight gain by the birds at 15 days intervals 2. Hen day egg laying 3. Hens house egg layings 4. Occurrence of diseases 5. B:C	1. Weight gain by the birds at 30 days intervals 2. Occurrence of diseases

Front Line Demonstration– Fishery Science

Title	**Short duration/ Hotel size carp culture**
Thematic area	Composite Fish Culture
Problem diagnosed	Loss of fish during flood
Technology	Fish culture with yearlings, Application of Cow dung, MOC and SSP to promote plankton production, Frequent liming to neutralize the ammonia level.
Source of technology	POP on Fisheries and Aquaculture in Assam, AAU, Jorhat
Demo (Area)	2 (0.26 ha)
Parameter for assessment	1. Yield per Ha 2. Feed conversion ratio 3. Fish health parameters 4. BCR

Front Line Demonstration– Fishery & Animal Science

Title	**Integrated fish cum duck culture**
Thematic area	IFS Module
Problem diagnosed	High cost of fish feed, Oxygen depletion of fish pond
Technology	Raising of duck in pond periphery, Negligible to zero feeding to fish,
Source of technology	POP on Fisheries and Aquaculture in Assam, AAU, Jorhat
Demo (Area)	2 (0.26 ha)
Parameter for assessment	1. Yield per Ha 2. Average weight gain of duck & Egg production. 3. BCR

Training Programmes (Farmers)

Discipline		Farmer Beneficiaries (Nos.)			
	Course (No.)	On	Off	Vocational	Total
Agronomy	9	-	200	25	225
Horticulture	7	-	125	50	175
Soil Science	9	-	225	-	225
Plant protection	7	-	175	-	175
Animal science	7	25	150	-	175
Community Science	5	75	50	-	125
Fishery Science	8	50	150	-	200
Total	**52**	**150**	**1050**	**75**	**1275**

Training Programmes (Rural Youth)

Discipline		Rural Youth Beneficiaries (Nos.)			
	Course (No.)	On	Off	Voc.	Total
Agronomy	2	-	50	-	50
Horticulture	4	75	-	20	95
Soil Science	2	-	25	15	40
Plant protection	3	-	50	25	75
Animal science	4	50	25	10	85
Community Science	5	25	50	30	105
Fishery Science	2	-	50	-	50
Total	**22**	**150**	**275**	**125**	**550**

Training Programmes (Extension Personnel)

Discipline		Extension Functionaries (Nos.)		
	Course (No.)	On	Off	Total
Agronomy	1	25	-	25
Horticulture	1	-	20	20
Soil Science	1	-	25	25
Plant protection	2	-	50	50
Animal Science	1	25	-	25
Community Science	2		50	50
Total	**8**	**50**	**145**	**195**

Extension Activities

Extension Activity	Nos. Proposed	Beneficiaries (No.)			Total
		Farmers	Extn. Personnel	Rural Youth	
Diagnostic visit	110	200	-	100	300
Advisory service	400	250	-	150	400
Training Manual	9	125	25	75	225
Celebration of Important days	6	200	30	70	300
Exhibition	4	250	50	100	400
Exposure visit	8	100	-	50	150
Extension / technical bulletin	16	-	-	-	-
News letter	1	-	-	-	-
News paper coverage	26	-	-	-	-
Research publications	9	-	-	-	-
Success stories	12	-	-	-	-
Farm Science Clubs' Convenors meet	4	150	-	50	200
Farmers' Seminar	4	100	-	100	-
Ex-trainees' meet	2	200	-	50	250
Field day	22	600	40	200	840

Extension Activities

Extension Activity	Nos. Proposed	Beneficiaries (No.)			Total
		Farmers	Extn. Personnel	Rural Youth	
Film show	4	250	-	150	400
Radio Talk	24	-	-	-	-
TV talk	3	-	-	-	-
Kishan Goshthi	4	200	-	100	300
Group Meeting	15	275	-	100	375
Kishan Mela	3	250	25	100	375
Soil Health Camps	1	75	5	20	100
Awareness camp	10	150	20	50	220
Method demonstration	25	400	-	200	600
Scientists' visit to farmers' field	175	100	-	75	175
Workshop/ Seminar	8	200	-	50	250
Soil Testing	500	500	-	-	500
Water Testing	50	25	-	25	50
Plant Testing	50	25	-	25	50
Manure Testing	50	25	-	25	50
SMS Service	110	1000	-	400	1400
Farmers' Scientist Interaction	15	175	25	75	275

SEED MATERIALS

Item	Crop	Variety	Proposed quantity
Cereals	Paddy	Ranjit Sub-1	180.0 q
		Bahadur Sub 1	3.0 q
		TTB 404	5.0 q
	Buckwheat	Local	12.0 q
	Finger Millet	Local	6.0 q
Oilseed	Sesame	Koliabor Til	1.0 q
	Niger	NG-1	5.0 q
	Toria	TS-67	10.0 q
	Linseed	Sekhar	8.0 q
Oilseed (CFLD)	Rapeseed	TS-67/ TS-36	480.0 q
	Linseed	Sekhar	80.0q
	Sesamum	Koliabor Til	70.0 q
Pulse (CFLD)	Blackgram	PU-31	160.0 q
	Lentil	HUL-57	90.0 q
Spices	Turmeric	Megha Turmeric-1	15 q
Fibre crops	Mesta	HC-583	Seed- 0.50 q
Total			**1125.5 q**

PLANTING MATERIALS

Item	Crop	Variety	Proposed quantity (Nos.)
Fruits	Citrus	Assam lemon	2000
	Banana	G Naine	100
	Coconut	Kamrupa	30
Vegetables	Cabbage	-	5000
	Cauliflower	-	5000
	Brinjal	-	5000
	Chili	-	3000
	Brocolli	-	2000
Others -	Gerbera	Red gem	500
	Gladiolus	Many var	200
	Mussenda	-	200
Total			**23030**

BIO-PRODUCTS

Item	Product Name	Species	Proposed quantity	
			No.	Kg.
Bio-agents	-	-	-	-
Bio-fertilizers	Azolla	*A Nilatica*	-	3000
Livestock strains	Pig Goat		12 8	
Others	Vermicompost	-	-	1000
Total			**20**	**4000**

Soil & Water Sample Analysis / Soil Health Cards (SHCs)

Sl. No.	Samples	Nos. of samples targeted	Target of Farmer beneficiaries	Village to be covered	SHCs to be issued to farmers (Nos.)
1.	Soil sample	500	500	25	500
2.	Water sample	50	50	5	50
3.	Plant sample	50	50	10	50
	Total	**600**	**600**	**40**	**600**

Mobile Advisory for 2020-21

Message type sent	Crop		Livestock		Weather		Marketing		Awareness		Other Enterprise		Total	
	No. of Message	No. of Beneficiary	No. of Message	No. of Beneficiary	No. of Message	No. of Beneficiary	No. of Message	No. of Beneficiary	No. of Message	No. of Beneficiary	No. of Message	No. of Beneficiary	No. of Message	No. of Beneficiary
Text only	90	108630	20	24140	20	24140	5	6035	5	6035	10	12070	150	181050
Voice only	20	24140	5	6035	5	6035	-	-	-	-	10	12070	40	48280
Voice and Text both	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**110**	**132770**	**25**	**30175**	**25**	**30175**	**5**	**6035**	**5**	**6035**	**20**	**24140**	**190**	**229330**

Thank you…
for patience listening