On Farm Testing (Discipline-Wise Summary) 2022

Discipline	Crop / Enterprise	Number of technology/ Social Concept		No. of trials		% of achievement	Reasons for shortfall, if any
		Assessed	Refined	Target	Achievement		
Agronomy	Blackgram	1	-	5		100	
	Rice	1	-	5		100	
Horticulture	Cucumber	1		5		100	
	Cauliflower	1		5			
Plant Protection	Mustard	1	-	5		100	
	Rice	1		5			
PBG	Lentil	1	-	5		100	
	Maize	1		5			
Fisheries	*Clarias magur*	1	-	5		100	
	Anabas testudineus	1	-	5		100	
Home Science	Guava	1	-	5		100	
	Nutri Garden	1	-	5		100	
Total		12	-	60			

Discipline – Agronomy OFT- 1.

Title: Weed management in kharif Blackgram Var. PU-31 (1st Year)

Crop	Blackgram	**Source of technology: RARS, Shillongani, Nagaon, AAU (2015)**	Area – 1.25 ha **No. of trial -5**

Major Problem diagnosed	Usually farmers manage weeds without using herbicide instead practice dense planting and hand weeding. **Severity:** 80 %

Pre-emergence application of herbicide

- T1-Pendimethalin @ 3 litre/ha at 1 DAS + 1 HW at 20-25 DAS
- T0 – Dense planting (30 kg/ha) + 1 HW at 20-25 DAS

- Seed treatment: Trichoderma viride @4 g/kg seed.
- Seed rate: 22.5 kg/ha; Spacing: 30x 10cm
- Sowing time: Mid Aug- mid Sept
- Fertilizer: 20:40:15 kg NPK/ha as Basal
- Land preparation: 3-4

Location: Sikhong, Lourembam, Umathel, Kakmayai

Parameters of Assessment

Parameter	T1	T0
Plant ht. (cm)	47	50
Weed population at (DAS)		
15	5	12
30	14	18
45	16	19
No. of Pod/plant	45-48	38-40
No. of branches/plant	5-6	3-4
Yield (q/ha)	6.2	5.4
Net Return(Rs./ha)	15400	11800
B:C ratio	1.55	1.45

Agronomy OFT-2

Title: Zinc Management in low land Pre-kharif rice (1st Year)

Crop: Rice Var. RC maniphou 12	**Major Problem Diagnosed with Severity %**
Area: 1.25 ha	Usually in rice field Zinc is not applied even though there is problem in Zinc deficiency. Severity %: 15 % (Prolong untreated of Zinc may significantly reduce in yield)

Details of technology

T1 -$ZnSO_4$@20 kg/ha (basal)

T0- Without $ZnSO_4$

- Seed treatment: Mancozeb @ 2.5 g/kg seed.
- Spacing : 15 x 15 cm
- Fertilizer : NPK @ 60:40:30 kg/ha. ½ N, full P & 2/3 K as basal; ¼ N at 25-30 DAT & ¼ N + 1/3 K at P.I stage

Location:
Sekmaijin, Sabaltongba, Khekman, Leishangthem, Langmeidong

No. of trial : 5

Parameters of Assessment

Parameter	Treatment 1	Treatment 0
No. of tillers/plant	728	728
No. of grains/panicles	138	135
No. of filled grain/panicle	122	112
Length of panicle	20	20
Seed yield (q/ha)	38	34
Net Return(Rs./ha)	15500	7500
B:C ratio	1.19	1.09
Farmer reaction	Deficiency symptoms of zinc couldn't be seen in the treatment plots & also increase yield though not significant compare to without zinc management	

Source of Tech: RARS, Shillongani, Nagaon, AAU (2015)

Horticulture OFT-1

Title: Performance evaluation of kharif Cauliflower Var. DC 31 (1st Year)

Major Problem diagnosed : Dearth of varietal choice **Severity: 20%**

Details of Technology

Performance of Kharif Cauliflower Var.DC31

- T1 - DC31
- T0- White treasure
- Seed rate :450g/ha
- Spacing: 60 x 45 cm
- Sowing time : June, 2022
- Time of Transplanting : July, 2022
- Seed treatment : Trichoderma viride @ 4g/kg of seed.
- Nutrient requirement: NPK: 120: 60: 100kg/ha. N in 3 splits , ½ N + full P & K as basal dose. ¼ N at 15 DAT and ¼ N at flowering stage.

Locations: Langmeithet, Uyal, Lourembam, Tentha and Wangjing

Source of Technology: ICAR-IARI, Pusa, New Delhi- 2014

Area : 0.37 ha

No. of Trial 5

Parameters of Assessment

Parameter	T1	T0(White treasure)
1.Curd size (kg)	0.42	0.55
2.Duration	65	74
3.Yield (q)	47	54
4.B.C Ratio	1.88	2.16
Consumer prefe rence	Preferred because of off season type and short duration	

Horticulture OFT-2

Title: Performance evaluation of Cucumber Var. DC-83 (1st Year)

Major Problem diagnosed : Lesser availability of locally suitable improved Variety **Severity: 70%**

Details of Technology

Source of Technology: ICAR-IARI, Pusa, New Delhi- 2018

Performance of Cucumber Var.DC-83
Seed rate - 2kg/ha
Spacing- 60 x 30 cm
Planting time – March
Seed treatment –*Trichoderma viridae* @ 4g/kg of seed.
Nutrient requirement - NPK: 100: 60: 50kg/ha. N in 3 split doses, ½ N + full P and K as basal dose. ¼ N after two weeks of planting , ¼ N at flowering stage.

Locations: Khongjom, Hijam khunou, Salungpham, Wangjing and Ukhongsang

Area : 0.31 ha

No. of Trial 5

Parameters of Assessment

Parameter	**T1 (**DC-83**)**	**T0 (Local** Chinjin Thabi)
Fruit weight (g)	140	120
Duration	40-45	65-70
Number of fruit/ plant (kg)	4	3.2
Yield (q)	130	122
B.C Ratio	4.10	3.85
Consumer preference	Suitable for sowing in spring-summer & Kharif season	

Plant Protection OFT- 1.

Title: Organic management of painted bug, aphid and sawfly in mustard (2nd Year)

Crop	Mustard Var.NRCHB-101	**Source of technology:** ICAR- NOFRI, Tadong, Sikkim 2014	Area – 1.5 ha No. of trial -5

Major Problem diagnosed	**Insect pest infestation** **Severity:** Aphid - 45 % ,Painted bug- 30 %; Sawfly- 20 %

Details of technology

1. T1- *Bacillus thuringiensis* @2ml/ lt. of water. (750 ml/ha) Spraying at 1, 3, 7, 10 days interval.

2. T0 - Farmers practice
   Chlorantraniliprole 18.5 % SC application @ 50ml/ ha (single spray)

LOCATION:
Wangjing,
Thoubal Okram, Ingourok

Parameters of Assessment (Mustard)

Parameter		T1 (*Bacillus thuringiensis)*	T0 (Chlorantraniliprole 18.5 % SC) Farmers Practice
1. Aphid/10 cm of central twig	Before spray	40.11	57.21
	After spray	30.32	14.25
2. Painted bug per plant	Before Spray	3.1	3.2
	After spray	2.43	1.55
3. Sawfly larvae per plant	Before Spray	2.51	3.12
	After spray	1.54	1.54
4. Net Return (Rs/ha)		24950	31450
5. Yield (q/ha)		7.30	8.29
6. B:C ratio		2.11	2.40

Plant Protection OFT 2.
Title: Management of stem rot disease in rice (1st year)

Crop	Rice Var. CAU R1	**Source of technology and year of release**	ICAR NOFRI Sikkim, 2016
No. of trials /Area (ha)	5 /1.5 ha	**Problem with severity:**	Stem rot is an emerging disease of paddy in Thoubal district **Severity**- 15%

Technology to be assessed	
T1	**T0**
➢ Field sanitation (Summer ploughing , removal of fungal sclerotia) ➢ Balance application of recommended dose of fertiliser(N:P:K 60:40:30 Kg/Ha)	➢Spraying Propiconazole 25 % EC @2ml/lt at 10, 20 days after incidence (500-750ml/ha).

Location:
Lourembam, Ukhongsang, Hijam Khunou, Thoubal Okram, Kiyam Siphai

Parameters of Assessment		
Parameter (% of infected plants)	**T1 (Cultural Practice)**	**T0 (Propiconazole 25 EC %) (Farmers Practice)**
1 .(Tillering)	20%	25%
2 (Panicle initiation)	25%	28%
3 (Flowering)	21%	19%
Avg.	**22%**	**24%**
4. Net Return (Rs/ha)	25000	22500
5. Yield (q/ha)	460	450
6. B:C ratio	1.27	1.25
Farmers reaction	Farmers have good response. Technology recommended (T1) have been found to cause less infestation of stem rot disease .	

Plant Breeding & Genetics OFT- 1

Title: Performance of biofortified Lentil Var. IPL 220 (2nd Year)

Crop	Lentil Var. IPL-220	Source of technology: IIPR, Kanpur, 2018	Area – **1.5 ha** No. of trial -5

Major Problem diagnosed

Poor varietal Diversification. **Severity** -20%

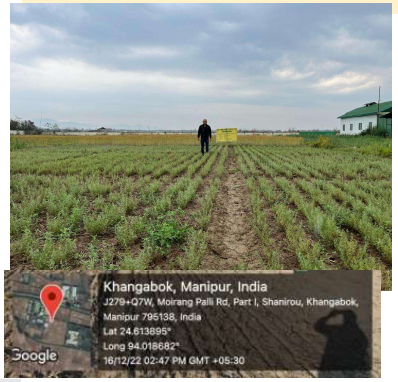
Details of technology

Parameter	T1 (IPL-220)	T0 (HUL-57) Farmers Practice
Seed Rate	40 kg/ha ; Spacing- 30 X 10 cm	
Seed treatment	*Trichoderma viridae* 4g/kg seed	
Fertilizer dose	NPK @ 18:46:20 kg/ha (½ N, full P & K at basal and ½ N at flowering/Pod formation)	

Parameters of Assessment

Parameter	T1 (IPL-220)	T0 (HUL-57) Farmers Practice
1. Plant height (cm)	33.5	31.33
2. Days to 50 % Flowering	62.32	62.45
3. Days to 80 % maturity	118.57	115.22
4. No. of Pods/Plant	52.66	51.17
5. No. of Seeds/ Pod	2.46	2.13
6. Yield(q/ha)	9.13	8.02
7.Net Return(Rs./ha)	48170	41180
8. B:C ratio	2.42	2.32

2nd year sowing at KVK in RBD



Location: **Hijam Khunou, Salungpham,Thoubal Ningombam, Nongpok Sekmai, Khangabok**

Plant Breeding & Genetics OFT- 2

Title: Performance of Hybrid Maize Var. DMRH-1308 (1st year)

Crop	Maize Var.DMRH-1308

Major Problem diagnosed

Poor varietal Diversification. **Severity** -20%

Source of technology: Indian Institute of Maize Research, Punjab, 2018

Area – 0.375 **ha** No. of trial -5

Location:

Heinganglok, Heirok, Thoubal Wangmataba, Umathel

Details of technology

T1 -DMRH-1308	**T0-** Maize Var. 9544 (Farmers Practice)
Seed Rate	20 kg/ha
Plant Geometry (Row X Plant):	Trichoderma viride 4g/kg seed
Fertilizer dose	120:60:60 Kg/ha (N:P:K)
Weed management:	Atrazine (1.5kg a.i/ha) as pre emergence followed by 2,4-D Amine 0.4 kg a.i/ha at 25 DAS as post emergence.

Parameters of Assessment

Parameter	T1 DMRH-1308	T2 Maize Var. 9544 (Farmers Practice)
Plant height (cm)	185.4	208.1
No. of Cobs per Plant	2.4	2.0
Days to 50 % Taselling	80.2	78.4
Ear Height (cm)	104.6	110.3
No of kernels per cob	14.0	14.0
Cob length (cm)	15.5	15.0
Yield (Q/ha)	28.50	24.50
BCR	2.21	1.90

FISHERIES OFT-1.

Title:Seed production of walking cat fish (*Clarias magur*) using BRICS (Barrier Removal In Catfish for Voluntary Captive Spawning) method (2nd Year)

Enterprise: Fish (walking cat fish)

No. of Trial : 5

Source and Year of Release : CoF, CAU, Lembucherra, 2020

Problem with severity: Sacrificing male brooder for seed production, Non availability of sufficient quantity of quality seed : **Severity-80%**

Technology to be Assessed

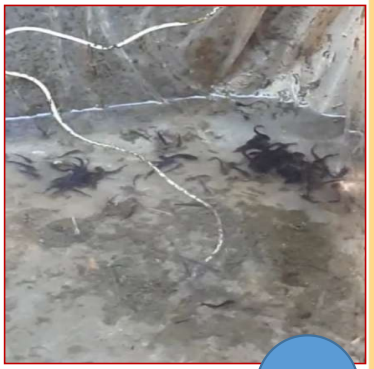
- Selection of brooder-

Hormone administration:

- 1st dose: Ovatide @ 0.5ml per Kg body weight in both Male & Female;
- 2nd dose: Oxytocin @40 milli IU after 12 hrs of ovatide injection in both Male & Female
- Removal of brooders after 24 hrs of injection;
- Incubation of eggs in the tank with water flow @ 0.3-0.5 litre/min;
- Incubation period: 24-30 hours.

Parameters of Assessment

Technology (BRICS method)	Farmers Practice: (sacrificing male brooder)
Hatchability : 79%	Hatchability : 43 %
Growth rate : 1 g/month	Growth rate : 1 g/month
Survivability % :60 %	Survivability % : 33 %
Net return/unit 48730	Net return/unit : 32820
BC Ratio : 2.64	BC Ratio : 1.9



Location: Salungpham, Hijam khunou, Lourembam

FISHERIES OFT-2.

Title: Seed production of Climbing perch *(Anabas testudineus)* (2nd Year)

Enterprise: Fish (Climbing perch)

No. of Trial : 5

Source and Year of Release : : ICAR –CIFA Bhubaneswar, 2016

Problem with severity: Scarcity of quality seeds of local Climbing perch. **Severity-60%**

Technology to be Assessed

- Selection of brooder.
- Injecting with ovatide hormone-
- Male- 0.25-0.5 µl/g bw;
- Female- 0.5-1.0 µl/g bw;
- Releasing of brooder in breeding pool
- Spawning time- 7- 8 hours after hormone injection. Incubation of fertilized egg in stagnant water in plastic tubs;
- Incubation period: 12-15 hrs.

Parameters of Assessment

Technology (Local *Anabas testudineus*)	**Farmers Practice: (Vietnam Koi)**
Hatchability : 92 %	Hatchability : 95 %
Growth rate : 1.5g/month	Growth rate : 2.0g / month
Survivability % : 70%	Survivability % : 75%
Net return/unit : 61360	Net return/unit : 86215
BC Ratio : 2.36	BC Ratio : 2.9
Consumers preference : Highly accepted by the consumer because of its taste	Consumer preference : Less consumer acceptance due to its appearance and taste (reduce in chewiness & Springiness)

Location: Wabagai, Hiyanglam, Khnangabok, Tentha

Discipline -Home Sc. OFT - 1

Title : Assessment on preparation of guava cheese (2nd year)

Enterprise: Guava cheese

Problem with severity: Due to its perishable nature during peak season it is difficult to store. **Severity** -80%

Source and Year of Release :
Horticulture Division ICAR, Barapani, 2014

No. of Trials : 5

Details of Technology
Preparation of guava cheese

Ingredients	T1	T2
Pulp :Sugar (kg)	1:1.25	1:1.5
Citric acid(gm)	3	5
Butter(gm)	60	80

Parameters	T2	T3
Product recovery/kg:	1.5	1.75
Shelf life (months)	3 months	
Net return (from 1 kg)	Rs.520	Rs.645
BC Ratio	2.3	2.5

Nutritional content per 100gm

Energy (Kcal/100g)	: 128.2
Protein (g)	: 1.57
Fats (g)	: 2.32
Carbohydrate (g)	: 25.26
Vitain C (mg)	: 72.42

Tested at College of Food Tech., CAU [I]

Location:

Heirok,

Keirak,

Khangabok

Discipline -Home Sc. **OFT – 2**

Title : Introduction to year round Nutri rich crops in NARI village (2nd Year)

Enterprises	Nutrition gardening	Severity of the problem (%)	70	No. of Trials	5	Source	ATARI, Jabalpur 2019

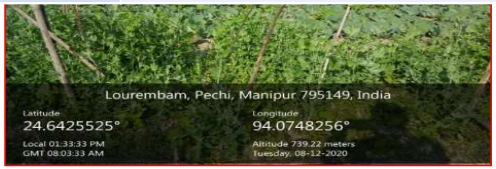
Major Problem diagnosed: Non availability of diversified nutrient rich crops

Area: 200 sqm

Location: Ingourok, Khangabok, Lourembam, Ukhongsang

Sl.No.	Crop	Production (Kg)			Nutrient availability (gm)			
		Kharif	Rabi	Zaid	Nutrients	Kharif	Rabi	Zaid
1.	Roots & tubers	15	77.50	25	Protein	4797.06	7956.11	4375.86
2.	Leafy vegetables	36	28.00	33	Fat	6914.63	1143.53	6307.4
3.	Other vegetables	142	174.00	109	Fibre	2030.55	3367.75	1852.26
4.	Pulses	-	20.00	-	Carbohydrate	13636.40	22616.56	12439.10
5.	Diversified crops	-	10.50	-				
6.	Fruits (Papaya, Watermelon)	25	30.00	20				

Reference: Nutritive value of Indian foods – ICMR- National Institute of Nutrition Hyderabad, 2020



Year round production of vegetables in Nutri Garden (200 sq.m)						
Rabi		**Kharif**		**Zaid**		**Remark**
Crop & area (sq.m.)	**Production (Kg)**	**Crop & area (sq.m)**	**Production (kg)**	**Crop & area**	**Production (kg)**	Quantity of crop produced from a field of200sqm will serve nutrient requirement of a family of 5-7 members depending on the age group throughout the year
Cabbage (9.5)	100	Tomato (9.5)	14	Sponge guard(9.5)	6	
Cauliflower(9.5)	30	Alocasia (9.5)	20	Bottle guard(9.5)	18	
Brocolli(9.5)	30	Colocasia (9.5)	15	Bitter Guard(9.5)	6	
Carrot (4.75)	9	Rajma (9.5)	13	Ash Guard(9.5)	18	
Raddish (4.75)	5	Cucumber(19)	35	Pumpkin(9.5)	20	
Beet Root (4.75)	13	Coriander (9.5)	14	Coriander(9.5)	15	
Lettuce (4.75)	4.5	Spinach (9.5)	15	Lettuce(9.5)	5	
Onion (9.5)	30	Chilli(9.5)	18	Spinach(9.5)	13	
Coriander (9.5)	6	Okra (19)	30	French bean(9.5)	11	
Potato (19)	20	Frenchbean (9.5)	10	Beet Root (9.5)	25	
Pea (9.5)	6	Lettuce(9.5)	6	Okra (9.5)	15	
Lentil (19)	7	Brinjal (9.5)	15	Cucumber (9.5)	15	
Frenchbean (9.5)	9			Watermelon(19)	20	
Spinach(4.75)	14					
Chia(4.75)	.500					
Quinoa (4.75)	1					
Broadbean(9.5)	14					
Total	340.500 kg		205kg		187kg	