On Farm Testing (Discipline-Wise Summary) 2020

Discipline	Crop / Enterprise	Number of technology/ Social Concept		No. of trials		% of achievement	Reasons for shortfall, if any
		Assessed	Refined	Target	Achievement		
Agronomy	Rice – Lentil/ chick pea	1	-	6	6	100	
	Lentil	1	-	5	5	100	
Plant Protection	Potato	1	-	5	5	100	
	Cabbage	1	-	5	5	100	
PBG	Rice (Kharif rice)	1	-	5	-	-	Due to COVID 19 Pandemic and also due to the favorable rainfall, all the propose field were filled up by normal varieties
	Maize	1	-	5	-	-	Due to COVID 19 Pandemic Seeds couldn't be procured from VPKAS, Almora
Fisheries	*Puntius gonionotus*	1	-	5	5	100	
	Ornamental fish	1	-	5	5	100	
Home Science	Chow chow	1	-	5	5	100	
	Amla	1	-	5	5	100	
Total (of KVK)		10	-	51	41		

Discipline – Agronomy OFT- 1.

Title: Performance evaluation on Rice based cropping system (Rice-Lentil/ Rice-Chickpea) (2nd Year)

Cropping system	Rice-Lentil/Chickpea	**Source of technology:** RARS, Shillongani, AAU 2015
Major Problem diagnosed	Usually rice field being kept fallow Rice alone cannot increase farmers income **Severity:** 80 %	

Area – 1.5 ha No. of trial -6

Details of technology

Rice: Var. CAU R1
Seed rate: 60 kg/ha
Spacing: 15x15 cm
Date of transplanting: July 1st week
Fertilizer dose: 60:40:30 kg NPK/ha

Lentil: Var. HUL 57
Seed rate: 40 kg/ha
Spacing-30 cm between rows
Date of planting: 2nd fortnight of November
Fertilizer dose: 15:35:15 Kg NPK/ha

Chickpea: Var. JG-16
Seed rate : 60kg/ha
Spacing 30 x 10 cm
Date of planting-: 2nd fortnight of Nov.
Fertilizer dose: 15:35:15 kg NPK/ha

Location:
Ingourok, Waikhong, Hijam Khunou, Thawai, Wangjing

Parameters of Assessment (Rice)

Parameter	Treatment	Farmers Practice
Plant ht. (cm)	135	135
No. of grains/panicles	268	260
No. of tillers/plant	12	10
Yield (q)	54.00	52.00
B:C ratio	1.8	1.6

Ingourok 24° 38' 52.3" N
94 05' 30.3"E

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Parameters of Assessment

Parameter	Chickpea	Lentil
Plant height	35-40 cm	30-35cm
Plant stand/sq.m	35-40	80-90
No. of branches per plant	7-10	8-12
No. of pods per plant	35-40	100 -110
No. of seed per pod	1-3	2
Yield q/ha	7.6	7.8
BC Ratio	1.83	1.95

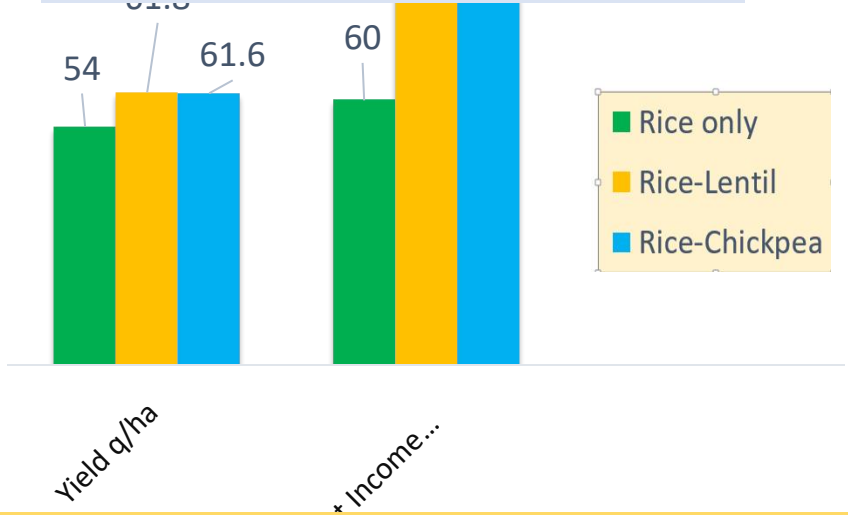
Economics of Rice – Lentil/ Rice – Chick pea

Crop	Grain yield (q/ha)	Net Return (Rs.)
Rice	54	60,000
Lentil	61.8 (Rice + Lentil)	86,000 (Rice-Lentil)
Chickpea	61.6 (Rice + Chickpea)	84,200 (Rice-Chickpea)

Feedback of farmers :

1. Late sowing of lentil/Chickpea under conventional system due to late harvesting of rice.
2. Offers better total annual use of land than a single crop system.
3. Lesser nutrient management in lentil under Rice-lentil/Chickpea cultivation.
4. Uncertainties of rainfall and terminal drought hampers lentil/Chickpea cultivation.
5. Seedling mortality and rust are common problem in lentil/Chickpea.

Comparison of Different Types of Cultivation
Rice only, Rice-Lentil, Rice-Chickpea



Important problems & Researchable Issues

1. Rainfall at rice harvesting time is a common phenomena in the district which delays rice harvesting & Lentil/Chickpea planting in time
2. Lack of irrigation facilities in many Rabi crop cultivable areas
3. Poor nodulation of pulse crops due to poor microbial activity because of acidic soil
4. Wild lentil an associated weed of lentil, is a problem in lentil cultivation which compete with Lentil crops and reduces the Yield and the quality of Lentil seed if mixed with this weed seed
5. Poor marketing channel for selling lentil/chickpea grain

Discipline –Agronomy	OFT-2

Title : Seed priming of Lentil **(1st Year)**

Crop	Major Problem Diagnosed
Lentil Var. HUL-57 Area: 1.25 ha	Poor germination and establishment under normal sowing condition

Severity of Problem : 40%

No. of trial :	5	**Source of Tech:**	RARS Shillongani, AAU, 2015

Details of technology

Seed soaking for 6 hours in water & then bringing down to almost original weight by drying under shade before sowing.

- Seed rate: 40 Kg/ha
- Spacing : 30 cm between rows
- Sowing time: Mid Oct – Mid Nov
- Fertilizer dose: 20:40:15 Kg NPK/ha

Location: Wangjing, Serou, Heirok, Heitupokpi, Bengi

Contd…

Parameters	Technology	Farmer Practice: (Haphazard planting)
Plant height (cm)	30-35	30-35
Plant stand (no./sq.m)	90-100	80-90
Pod/plant(nos)	110-120	110-120
Seed/pod	2	2
Seed yield (q/ha)	8.2	7.4
BC Ratio	2.01	1.85

Farmers Feedback

1. Seed germination and seedling establishment was good compared to non-priming seed
2. Optimum soil moisture is required for proper germination of seeds
3. There was slight increase in yield
4. No extra input/effort is required except water and drying in shade

Important problem & Researchable issues

•Optimum soil moisture is required for timely germination & faster establishment in seed primed sown crop for which either pre-sowing irrigation or availability of optimum soil moisture is required.

•For timely planting,relay cropping under zero tillage condition is necessary.

Discipline –Plant Protection	OFT 1.	Title: Management of frost bite and viral diseases of potato (1st year)

Crop	Major Problem Diagnosed with severity	Details of Technology
Potato Var. Lady Rosetta	Frost bites – 70% Viral diseases- 55%	➢ Management of frost bites & viral diseases with Dimethyl sulfloxide 38.4% & Imidachloprid 17.8% @ 400 ml/ha two sprays at 20 days interval ➢ First spray at first earthing up (25-30DAS)

No. of trials - 5	Area – 1.25 ha	Source: CSAUA & T, 2017

Location: Wabagai, Wangbal, Sabaltongba, Kakching

Parameters	Technology (Dimethyl sulfloxide 38.4% + Imidachloprid 17.8%)	Farmer Practice (Imidachloprid 17.8%)
No. of infected plants (Nos./sq m)	9	9
a) Yellow mosaic	0.32%	0.23%
b) Crinkle	3.57%	4.01%
c) Stem necrosis	7.4	6.8
d)Frost affected plants (%)	72%	38%
e) Yield q/ha	87	72
f) B:C ratio	2.6	2.3

Remark:

Pesticide with dimethyl Sulfoxide can save the crop from frost, other parameters at par.

Discipline –Plant Protection **OFT 2.**

TITLE: Performance evaluation of Metarhizium anisoplea (a Bio pesticide) in management of aphid in cabbage **(1st Year)**

Crop	Major Problem diagnosed & severity	Details of technology	Source
Cabbage	Management of sucking insects in cabbage which is consumed as raw, is usually controlled by using chemicals which results in health hazards if consumed before waiting period of the insecticide. **Severity**: 70%	Management of aphids with Metarhizium anisoplea (a Bio pesticide) @ 30ml/ 15 litre water First spray : 20 DAT Second: 20 Days after the 1st Spray	Mahatama Phule Krishi Vidyapeeth, Rahuri, 2015

No. of trials: 5 **Area ha: 1.25** Location: Wabagai, Wangjing, Kakching, Leiphrakpam, Wangkhem

Parameters of Assessment	Technology (Metarhizium anisoplea 30ml/15 lit water)	Farmers Practice (Spraying Diamethoate 30% 10ml/15 lit. water)
Population of aphid at 20 days interval		
Just Before spraying	72/plant	77/plant
1st Two days after spraying	68/plant	24/plant
20th day after 1st spraying	63/plant	32/plant
Two days after 2nd spray	42/plant	19/plant
20 days after 2nd spray	8/plant	36/plant
Yield q/ha	165	167
Net return(Rs./ha)	140000	146000
BC Ratio	2.7	2.9

Farmers Feedback

- ✓ Biopesticide, an alternative of Chemical pesticide
- ✓ Biopesticide is for quality product whereas Chemical pesticide is for increase productivity
- ✓ Biopesticide agents are safe for human health, environment and sustainable

Discipline: Fisheries OFT- 1

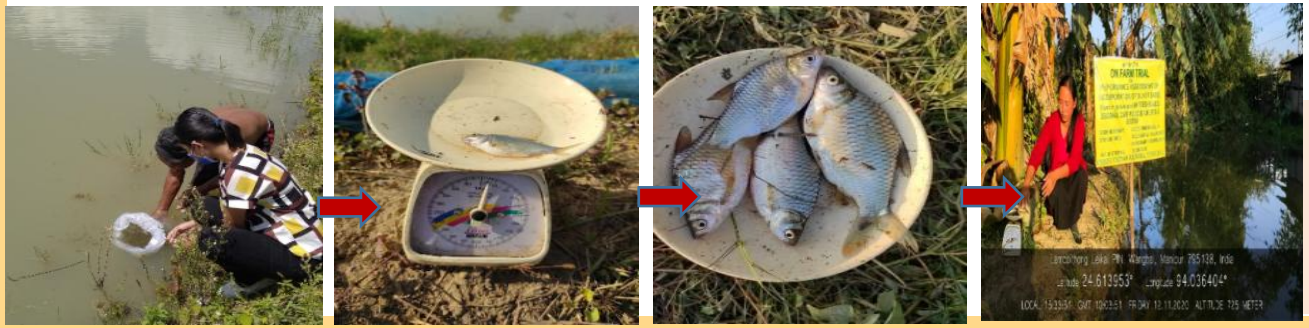
Title : Performance assessment on Incorporation of Silver barb (*Puntius gonionotus*) in feed based seasonal carp polyculture pond system **(1st Year)**

Livestock	Silver barb (*Puntius gonionotus*)	**Area (ha)**	**0.1**
Major Problem diagnosed	Culture of major carps alone fetches limited income and farmers are not aware of diversified aquaculture. **Severity: 60%**		

Source : CoF, CAU (I), Lembucherra, 2014

No. of trials 5

Parameters of Assessment	Technology	Farmers Practice: (Culture of major carps only)
Avg. wt. gain of Catla Avg. wt gain of grass carp Avg.wt gain of Common carp Avg wt gain of Silver barb	640g 700g 650g 460g	630g 780g 640g -
Survivility	90%	85%
Productivity	358kg/0.1ha	296kg/0.1ha
BC Ratio	2.8	2.0



Details of Technology :

- Stocking density: 10000 fingerlings/ha
- Stocking ratio: Catla: Silver barb : grass carp: common carp @ 3:3:2:2
- Feeding @3% body weight
- Culture period: 6 months

Location: Ningombam, Tentha, Kshetrileikai, Khangabok,Wangbal

Farmers Feedback:

- Incorporation of silver barb in carp polyculture system fetches good price & market demand as the species can be sold in smaller size i.e., 150-200g .
- Faster Net Return.
- Profitable & economically feasible in carp polyculture

Important Problem & Researchable Issue:

The productivity may be further enhance with inclusion of Rohu through species ratio optimization through polyculture system.

Discipline: Fisheries OFT- 2

Title :Introduction to Low cost backyard ornamental fish farming for income generation of rural youths using polyline thermocol box (1st Year)

Livestock	Ornamental fish

Source : ICAR –CIFA, 2016

Major Problem diagnosed	Breeding and rearing of ornamental fishes had not been practiced by farmers of Thoubal district

Details of Technology :

No. of trials 5

- Species: Guppy (*Poecila raticulata*), Platy (*Xiphophorus maculatus*)
- Use of polyline thermocol fish box, as rearing unit.
- Submerged plant such as Hydrilla is used as hiding place for fry.
- Stocking density /box = 50 nos.
- **Feeding-** Diet with 35-40% crude protein and live feed such as zooplankton, blood worms
- **Water depth-** 30- 60 cm for one month for fry rearing
- Culture period: 7 months

Location : khangabok, Athokpam, Lourembam,Sapam, Thoubal Khunou




Parameters of Assessment	Technology
Survival %	87%
Productivity	3219 fry/50 brooder
Net return (Rs./50 brooder)	Rs. 12,595/-
BC Ratio	3.5

Farmers Feedback:

- Reduce management & cost of production
- After 3-4 months rearing, income can be generated
- Can be taken up as an income generating enterprise of rural youth.

Discipline – Home Science **OFT 1.**

Title : Production of Chow Chow Bori during peak and lean production period (2nd Year)

Enterprises	Major Problem diagnosed	Severity of the problem (%)	Details of technology	Source	No. of Trials
Chow-Chow Bori	High Cost of production for Blackgram bori	60%	Development of bori from squash (40 % squash mixed with KMS @ 1.5 g/kg with blackgram paste 60%)	College of Home Science, Tura, Meghalaya, 2014	5

Parameters	Product recovery/kg	Cost/Unit (10 kg) in Rs.	Net return/ Unit (Rs.)	B.C Ratio	Shelf life (Month)	Nutritional content /100gm (ICAR –NEH, Imphal Centre)
Peak season (T1 40:60 squash:Blackgram)	**370nos**	**1155**	**1435**	**2.2**	**6**	**Carbohydrate –18.73gm**
Lean season (T2 40:60 squash:Blackgram)	**370nos**	**1315**	**1275**	**1.9**	**6**	**Fat- 0.8 gm**
Farmers Practice (T3 using Blackgram only)	**350nos**	**1475**	**1325**	**1.8**	**4**	**Protein- 55.3 gm**

Important issues and researchable area

- ❖Taste in chow chow bori is comparatively less hence the ratio need to be rectified either at the ratio of 70:30 or 50:50
- ❖Market led extension need to be taken for popularisation of the product
- ❖To reduce the cost of production other pulse crop can be blended in the paste

Feed Back

- ➢ reduces cost of production
- ➢Increases net

Discipline -Home Sc. **OFT - 2**

Title : Osmotic Dehydration of Amla 2nd Year

Enterprises	Major Problem diagnosed	Severity of the problem (%)	Details of technology		Source	No. of Trials
			Technology	Farmer practices		
Amla	Due to its perishable nature during peak season it is difficult to store.	70	Washing, blanching, segment making, dipping in sugar syrup 60°brix for 24 hours	Washing, segment making, dipping in sugar syrup 50°brix for 3-4 days	IIHR, Bangalore, 2017	5

Parameters	Technology	Farmer Practices
Product recovery/kg:	700g/kg	500g/kg
Shelf life (months)	3	3
Net return	Rs.3920 from 20kg	Rs.2800 from 20kg
B.C Ratio	2.5	2.0

Location: Athokpam , Kakching Khunou, Laiphrakpam , Khangabok

Farmers feedback:

- Retention of fresh fruit flavor
- No chance of contamination
- Quality improvement in terms of colour and texture