On Farm Testing (Discipline-Wise Summary) 2023

Discipline	Crop / Enterprise	Number of technology/ Social Concept		No. of trials		% of achievement	Reasons for shortfall, if any
		Assessed	Refined	Target	Achievement		
Horticulture	Pea	1		5		100	
	Cucumber	1		5			
Plant Protection	Rice	1	-	5		100	
	Onion	1		5			
PBG	Rice	1	-	5		100	
	Millet	1		5			
Fisheries	IMC	1	-	5		100	
	Climbing Perch	1	-	5		100	
Home Science	Multigrain cookies	1	-	5		100	
	Pomelo Jam	1	-	5		100	
Agronomy	Blackgram	1	-	5		100	
	Maize	1	-	5		100	
Agri. Extension	Millets	1	-	120 farmers		100	
Total		13					

Horticulture Common OFT

Title: Performance of Garden Pea Var. Kashi Ageti (1st Year)

Crop	Garden Pea var. Kashi Ageti	Source of technology and year of release	ICAR IIVR Varanasi, 2015

Problem with severity: **Reduction and fluctuation in yield due to prolong use of locally available and lack of improved high yielding garden pea variety. Severity:20%**

Technology to be assessed

Variety- Kashi Ageti

- Seed rate - 80kg/ha
- Spacing- 30 x 10cm
- Planting time – November
- Seed treatment – Trichoderma @ 2g/kg of seed.
- Nutrient requirement: NPK: 20: 60: 40kg/ha. As basal dose.

No. of trials proposed/Area (ha)	5 trial and 0.5 ha

Location :- Salungpham, Yairipok, Heirok, Wangjing and Papal

Parameters	T1 (Kashi Ageti)	T0 : (var. Arkel)
Date of sowing	16-11-2023	20-11-2023
Days to 1st germination	3-6	3-6
Temperature (max & min)	26°C &11°C	26°C &11°C
Relative Humidity %	79.5	79.5
No. of branches at 30 DAP	6 -7	5 -6
Plant height at 30 DAP	21 -23 (cm)	20 -22 (cm)
Plant height at harvesting		
Days to 1st Harvesting		
No. of Picking		
No. of pods at harvest		
Crop duration(days)		
Yield (q/ha)		
Cost of Cultivation		
Gross Return		
Net Return & BCR		

Continuing…

Horticulture OFT 2

Title: Performance evaluation of Cucumber Var.DC-83 (2nd Year)

Crop	Cucumber var. DC-83
Problem with severity:	Lesser availability of locally suitable improved Variety **Severity:** 20%
No. of trials proposed/Area (ha)	**5 trial and 0.5 ha**

Source of technology and year of release	ICAR -IARI, Pusa New Delhi, 2014

Technology to be assessed

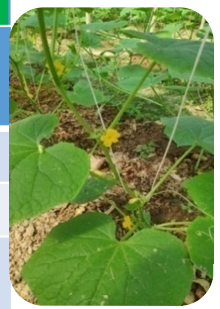
T_1	T_0
DC-83	LOCAL (kalen thabi)

- Seed rate - 2kg/ha
- Spacing- 60 x 30 cm
- Planting time –June
- Seed treatment -Trichoderma viride@ 2g/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.

Location :-
Khongjom, Hijam khunou,Lourembam , Wangjing and khangabok

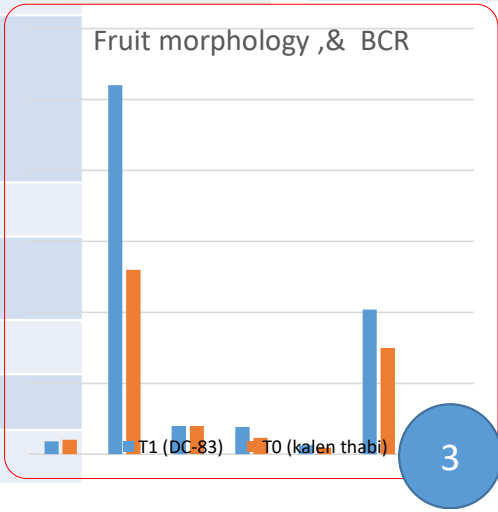
Parameters for assessment

Parameters	T_1 (Var DC-83)	T_0 (var Kalen thabi)
Spacing	60x30cm	60x20cm
No. of fruit/plant	8-10	10-12
Average weight of fruit(g)	260	130
Days to first female flower	20-25 DAS	20-25 DAS
Fruit morphological parameters Length (cm) Diameter (cm)	 16.3 6-8	 11.5 5-6
Yield(q/ha)	102	75
Cost of cultivation (Rs/ha)	110000	95000
Gross Return (Rs/ha)	360000	225000
Net Return (Rs/ha)	250000	130000
BCR	3.27	2.37



Flower initiation

Started fruiting



Plant Breeding & Genetics OFT- 1

Title: Assessment of bio-fortified Pearl millet Var. ABV-04

Crop	Pearl millet Var. ABV-04 (Biofortified with Zn & Fe)

Source of technology: ANGRAU, Ananthapuram, 2018

Major Problem diagnosed

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

No. of trials proposed /Area (ha)	5 /1.5 ha

Location:

Umathel, Khangabok, Salungpham, Keirak & Pallel

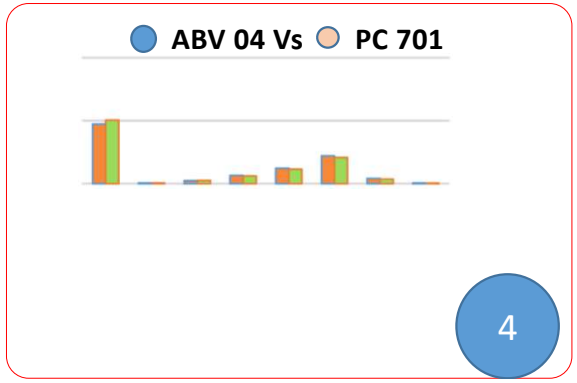
Technology to be assessed

T_1	T_0
ABV-04	Pusa Composite -701

- Seed rate : 5Kg/ha (Drilling method)
- Seed treatment: *Trichoderma harzianum* @ 4gm/kg seed
- Field Preparation: One deep ploughing with MB plough,followed by 2-3 cultivator ploughing/harrowing and planking
- Fertilizer: NPK (60 : 40: 30) Kg/ha; Full P and K and ½ dose of N at the time of sowing in furrow and rest of N through top dressing at 20-25 DAS and panicle formation stage
- Spacing : (40x 10) cm
- Sowing time: Mid-June to 3rd week of July

Parameters of Assessment

Parameter	T_1 ABV-04	T_0 Pusa Composite -701 Farmers Practice
Plant height (cm)	189.23	201.37
Tillers/Plant	2	2
Number of leaves per plant	9.33	9.91
Panicle length/ Plant (cm)	26.23	24.08
Days to 50 % flowering	49	46
Days to 80 % maturity	88	83
Test weight (gm)	16.23	14.27
Yield (kg/ha)	1356	1132
PDI	Smut	Smut
Cost of cultivation	35000	35000
Gross return	67800	56600
Net return	32800	21600
B:C ratio	1.93	1.61



Plant Breeding & Genetics (Common for all the valley districts of Manipur) OFT- 2

Title: Performance assessment of rice varieties Var. RC Maniphou 15 & RC Maniphou 16

Crop	Rice Var. RC Maniphou 15 & RC Maniphou 16

Source of technology: ICAR, Manipur Center, 2021

Major Problem diagnosed

Low seed replacement rate of HYV and low yield of existing variety **Severity** -20%

Details of technology

T_1	T_2	T_0 (Farmer Practice)
RC Maniphou 15	RC Maniphou 16	RC Maniphou 13

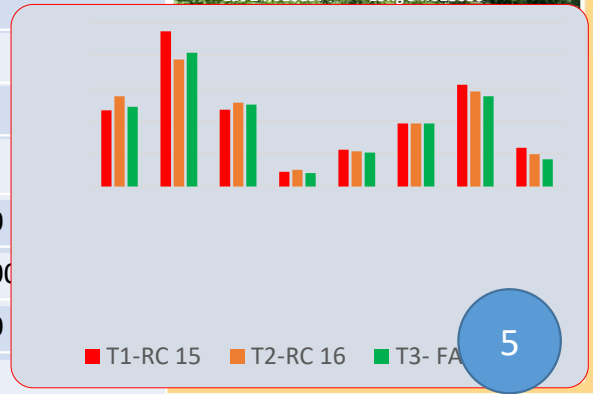
- Seed rate: 60 Kg /ha
- Seed treatment: Carbendazim @ 4gm/kg seed
- Plant Geometry (Row X Plant): 20 cm X 15 cm
- Fertilizers recommendations: 60:40:30 Kg/ha (N:P:K); ½ N, full P & 2/3 K as basal; ¼ N at 25-30 DAT & ¼ N + 1/3 K at P.I stage
- Transplanting: 2 seedlings per hill
- Transplanting age: 21-25 DAS

No. of trials proposed /Area (ha)	5 /5 ha

Location: Khangabok, Kakching Nongpok Sekmai & Khongjom

Parameters of Assessment

Parameter	T_1 RC Maniphou 15	T_2 RC Maniphou 16	T_0 RC Maniphou 13 (Farmers Practice)
Sowing time	22/07/23	22/07/23	22/07/23
Planting time	15/08/23	15/08/23	15/08/23
Plant height (cm)	116.34	137.45	121.36
No. of effective tillers /m²	237	194	204
Days to 80% maturity	117	128	125
Panicle length (cm)	22.32	25.02	20.29
Yield (Kg/m²)	0.62	0.60	0.59
Straw Yield (Q/Ha)	56.02	53.56	51.8
PDI	Brown Spot	Smut	Blast
Cost of cultivation	96000	96000	96000
Gross return	155000	144960	137500
Net return	59000	48960	41500
BCR	1.61	1.51	1.43



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

Crop	RC Maniphou-15
No. of trials proposed /Area (ha)	5 /1.5 ha

Source of technology and year of release	ICAR NOFRI Sikkim, 2016

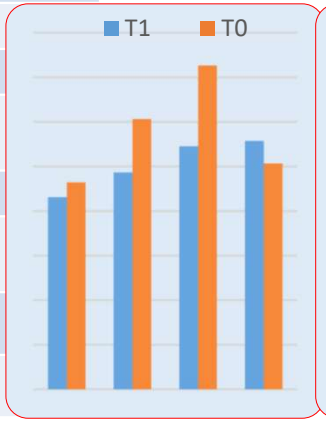
Problem with severity:	Stem rot is an emerging disease of paddy in Thoubal district **Severity**- 60%

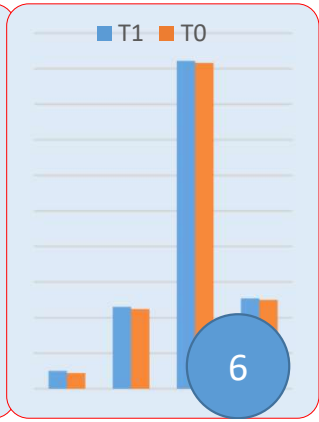
Technology to be assessed

T_1 (Technology)	T_0 (Farmers practice)
➢ Field sanitation (Summer ploughing , removal of fungal sclerotia) ➢ Balance application of recommended dose of fertilizer(N:P:K 60:40:30 Kg/Ha)	➢Spraying Propiconazole 25 % EC @2ml/lt at 10, 20 days after incidence (500-750ml/ha).

Location:
Khangabok, Kiyamsiphai, Lamding, Wangbal, Wangjing

Parameters of Assessment		
1. (% of infected plants)	**T_1 (Technology)**	**T_0 (Farmers Practice)**
a.(Tillering)	20.98%	23.89%
b. (Panicle initiation)	21.79%	26.87%
c. (Flowering)	21.88%	18.91%
Avg.	**21.55%**	**23.22%**
2. Crop damage %	**24.32%**	**30.33%**
3. Time of disease occurrence	Mid tillering(36DAT) to grain hardening stage(110DAT)	Mid tillering(36DAT) to grain hardening stage(110DAT)
4.. Disease incidence	**27.27**	**36.36**
5. Mean plant population	**27.88**	**25.34**
5. Average disease control %	**25%(over T0)**	
6. Net Return (Rs/ha)	25000(0.25 lakhs)	22500(0.22 lakhs)
7. Gross return(Rs/ ha)	1,15,000(1.15 lakhs)	1,12,500(1.12 lakhs)
8. Yield (q/ha)	46.14(4.61 t/ha)	45.89(4.58 t/ha)
9. B:C ratio	1.27	1.25





Discipline: Plant Protection OFT-2 (Common for all valley districts of Manipur)

Title: Management of purple blotch in onion (1st year)

Crop	Onion var. Nashik Red	Source of technology and year of release	DOGR and Junagadh Agricultural University, 2018
Problem with severity %	Purple blotch is a serious disease in onion reducing yield drastically with 70 % severity	**No. of trials proposed /Area (ha)**	**5 /0.3 ha**

Technology to be assessed	
T_1 (Technology)	T_0 (Farmers practice)
➢ Spraying of Mancozeb @ 0.25% + Propiconazole @ 0.1% thrice at 10 days intervals from 30 DAT	➢ Spraying of ➢Tebuconazole @0.1%, (3 times spraying is done after infestation at weekly interval)

Location:
Wangjing, Wangbal, Ukhongsang , Khangabok,

Parameters for assessment		
	T_1 (Technology)	T_0 (Farmer Practice)
1.Disease incidence	Continuing…..	
2.No of infested plants		
3.% infestation		
4.Average disease controlled		
5.Crop damage %		
6.Mean population		
7.Time of disease occurrence		
8. Yield		
9.Economics		
10. B:C ratio		
Date of transplanting	**2-12-2023**	

DISCIPLINE - FISHERIES (Common for all the districts of Manipur) – OFT 1

Title: Periphyton based fish farming (1st Year)

Enterprise: Fish

Problem with severity: Low growth rate of fish in extensive culture system with 70% Severity

No. of trials proposed | 5

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

Technology to be Assessed

Stocking density – 8000 fingerlings/ha.
Fish species – (IMC)- Catla, Rohu, Mrigal (30:40:30)
Culture period- 6 months

T_1:
Feeding- RB : MOC (1:1) @ 2% bw once a day
Substrate for periphyton- Bamboo pole (Split into 4)
Spacing for bamboo pole – 3X3 ft
Spreading of bamboo poles - 1/3 of pond surface
No. of bamboo required for 0.25 ha – 180 nos.

T_0:
Feeding- RB : MOC (1:1) @ 2% bw once a day
No substrate

Parameters of Assessment :

Parameters	Technology	Farmer Practice
i. Survival %	Continuing…..	
ii. Yield (Kg/ha)	Final harvest will be done during January, 2024	
iii. Absolute growth (g)		
iv. Economics		

Khangabok
Lat: 24.61366°N" Long: 94.02116° E"

Lilong
Lat: 24.67272°N" Long: 93.94817° E"

Lilong
Lat: 24.67272°N" Long: 93.94817° E"

Location:
Lilong, Khangabok, Chandrakhong, Tentha

DISCIPLINE - FISHERIES OFT 2.

Title: Performance assessment of monoculture of air breathing fish (*Anabas testudineus*) (1st Year)

Enterprise: Fish

No. of trials proposed	5

Problem with severity: Less availability of seed as well as low fish growth in extensive culture system . **Severity** -60%

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

Technology to be Assessed

Stocking density- 8500 fry per 0.1 ha
Species – *Anabas testudineus*
Culture period - 4 months

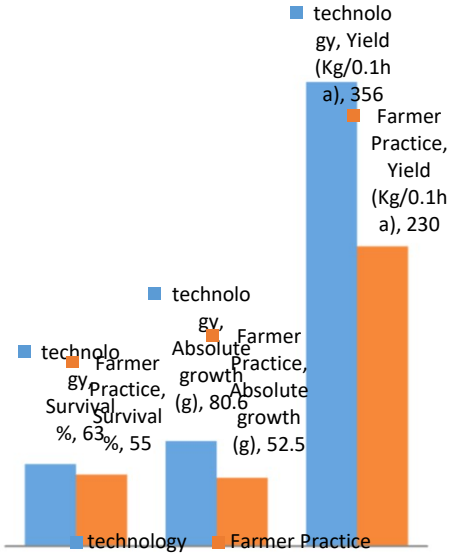
T_1:
Feeding- RB : MOC (1:1) @ 3% bw once a day

T_0:
Feeding- RB : MOC (1:1) @ 3% bw once a day

Location:
Nongangkhong,Khangabok,Hiyanglam, Wabagai, Tentha

Parameters of Assessment :

Parameters	Technology	Farmer Practice
i. Survival %	63%	55%
Ii. Absolute growth (g)	60.6 g	52.5 g
ii. Yield (Kg per 0.1ha)	356 kg	230kg
iii. Net return (Rs./ha)	Rs.54320/-	Rs.27600/-



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Discipline -Home Sc. OFT - 1

Title : Assessment on Preparation of Pomelo Jam (1st year)

Enterprise: Pomelo jam

Problem with severity: Low shelf life of fresh fruit & un-utilization of pomelo fruit in value addition
Severity-80%

Source and Year of Release :
University of Agricultural Sciences, Bangalore,2015

Nutritional content per 100gm
Samples sent for testing at College of Food Tech, CAU Imphal

Location: Khangabok, Wangjing, Sapam

No. of trials proposed	5

T_1 100% pomelo Technology	T_0 50%pomelo 50% papaya
▪ Peel the pomelo and papaya separately ▪ Chop into small pieces& put in a saucepan with the sugar (500g), mash and then bring it to boil and add citric acid @3g per kg pulp. ▪ Continue boiling, stirring constantly & make a gelling test, after 5 minutes pour into glass jar	▪ Peel the pomelo and remove the fruit ▪ Add the pomelo & sugar (500g) in saucepan and then bring it to boil. Stir frequently and add citric acid @3g per kg pulp. ▪ Continue boiling, stirring constantly & make a gelling test, after 5 minutes pour into glass jar

Parameters	T_1 100% pomelo	T_0 50%pomelo 50% papaya
Product Recovery/kg	1.2	1.6
Cost of Production	352	538
Gross Income	720	960
Net Income	368	538
BC Ratio	2	2.27
Taste	Intense tartness	Slightly tartness

Discipline -Home Sc. Common OFT

Title : Assessment of multi grain millet cookies (1styear)

Enterprise: Pomelo jam

No. of Trials proposed : 5

Problem with severity: Non availability of diversified millet value added products Severity -80%

Source and Year of Release : IIMR Hyderbad 2018

Details of Technology
Preparation of multi grain millet cookies

- Beat 50g butter & Sugar powder (30gm) till fluffy
- Add millet flour 100g (Ragi: Sorghum: Bajara @ 30:40:30) till soft dough
- Spread out dough on butter paper & roll it.
- Cut into shapes
- Bake it for 15 min at 180 degree in pre heated oven

Nutritional content per 100gm

Samples sent for testing at College of Food Tech C A U Imphal

Location:
Khangabok, Kouraopokpi
Charangpat, Kakching

Parameters			
Product recovery/kg:	2	Gross income	735
Shelf life (months)	3mths	Taste	Good
Net return (from 1 kg)	290	Colour	Brown
BC Ratio	1.6	Texture	Crispy

Discipline – Agronomy OFT- 1.

Title: Weed management in kharif Blackgram Var. PU-31 (2nd Year)

Crop	Blackgram	Source of technology: RARS, Shillongani, Nagaon, AAU (2015)	No. of trials proposed /Area (ha)	5 /1.25 ha

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

Pre-emergence application of herbicide

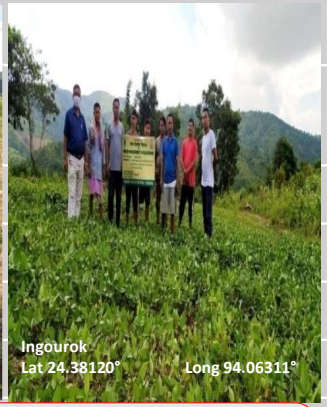
- T_1-Pendimethalin @ 3 litre/ha at 1 DAS + 1 HW at 20-25 DAS
- T_0 – Dense planting (30 kg/ha) + 1 HW at 20-25 DAS

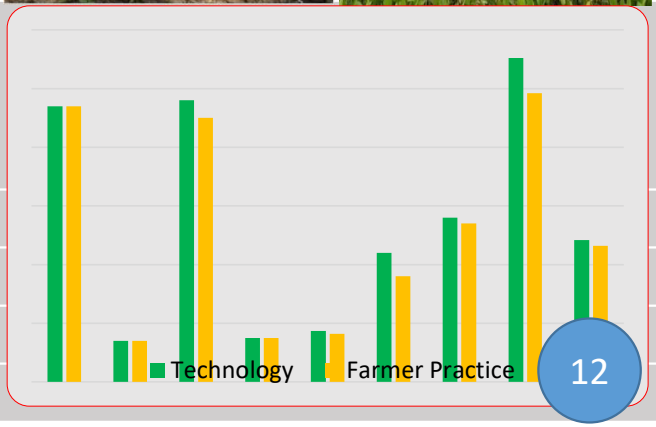
- Seed treatment: Trichoderma viride @4 g/kg seed.
- Seed rate: 22.5 kg/ha; Spacing: 30x 10cm
- Sowing time: Mid Aug- mid Sept
- Fertilizer: 20:40:15 kg NPK/ha as Basal
- Land preparation: 3-4

Location:
Hijam Khunou, Kakmayai, Heirok, Nongpok Sekmai, Lourembam

Parameters of Assessment

Parameters	T_1	T_0
Plant height(cm)	47	47
Branches /plant	6-8	6-8
Pods/plant	46-49	44-46
Seeds/plant	7-8	7-8
100 seed weight (g)	18	18
Seed yield (q/ha)	8.7	8.2
Weed population DAS /sqm		
16 days	10	10
30 days	22	18
45 days	20	21
Cost of cultivation (Rs/ha)	28000	27000
Gross Return (Rs/ha)	52200	49200
Net Return (Rs/ha)	24200	23200
BCR	1.86	1.82





Agronomy OFT-2

Title: Rice based cropping system of rice followed by rapeseed Rice var. RC Maniphou-15, Rapeseed var. TS-38 (2nd year)

Crop: Rice Var. RC Maniphou 15
Rapeseed var TS-38

No. of trials proposed /Area (ha)	5 /1.25 ha

Source of Tech: ICAR, Manipur,2017

Major Problem Diagnosed with Severity %- Rice field usually kept fallow and alone cannot increased the cropping intensity and economic benefit of farmers Severity: 60%

Details of technology

- Variety – RC Maniphou-15
- Seed rate- 60kg/ha
- Sowing time- June last week
- Transplanting time – 1st forthnight of July
- Spacing – 15x15 cm
- Fertilizer dose – 80:40: 30 kg NPK/ha.
- Followed by Zero tillage mustard cultivation using variety TS-38

Location: Hijam Khunou, Kiyam Siphai, Cherapur, Kakching khunou

Parameters of Assessment

Parameters	T_1 (Rice)	T_0	Rapeseed
Sowing time	June 22	No farmer practice	Crops are at initial stage that is vegetative stage.
Planting time	July 12		
Spacing (cm)	15x15		
Plant height (cm)	110		
No. of spikelet's/panicle	135-140		
Maturity (days)	134		
Test weight (g)	30.42		
Grain yield (q/ha)	58		
Straw yield (q/ha)	52		
Harvest Index	0.53		
Cost of Cultivation	96000		
Gross Income	145000		
Net Return	49000		
BCR	1.51		

Kiyam Siphai Thoubal

Latitude24.5986^{0}N Longitude 94.0359^0 E

Lamding Cherapur, TBL

Latitude 24.5998^{0}N, Longitude 94.0400^0 E

Discipline –Agricultural Extension (Common for all the districts of Manipur) OFT

Title : Assessment on Knowledge, Attitude and Perception of Millets

Crop: Millet

Problem: Lack of awareness on health and nutritional aspects of the consumer and few growers/cultivars

No. of Trials : 120 Farmers

Social Concept: Assessment on Knowledge, Attitude and Perception of Millets
Study Period: January 2023 to December 2023

Source: Knowledge, Attitude and Perception (KAP) of Farmers for using Information and Communication Technology in Agriculture in Punjab, India. *IJCSEITR*,5(6) :7-12 & 2015

Methodology: Stratified Purposive Sampling (Both Questionnaires and Schedule)

Parameters	
1. Knowledge: ✓ 54.16% of the respondents knows millets ✓18.20 % Knows millet as climate resilient crop and its health benefit	**4. Technology index:** 48.00%
2. Attitude: ✓ 76.00 % of the respondents are willing to grow millets ✓ Only 12.15% of the respondents grows millets	**5. Extension gap:** 1.90 q **6. Technology gap**: 9.60 q
3. Perception: ✓ 92.15 % of the farmers wants to promote millet ✓43.44 % respondents preferred to grow millet in future ✓86.00% of the respondents preferred Sorghum ✓92.00 % of the farmers faces Bird's problem	**7. Yield: 10.4 q** **8. B:C Ratio: 1.80**