Success story on increased production in field pea during Rabi season for doubling farmer's income.

Challenge:Rabi farming is a remunerative and sustainable farming during the winter season. However, the farmers rarely cultivate during the Rabi season due to the prevailing dry season. In the District, the cultivable land is kept fallow during the entire Rabi season. However, with the increase demand for food grains, some farmers cultivate field pea, cole crops and mustard, toria etc during the rabi season which is very negligible. After the harvest of paddy, the paddy field soils are stilldamp and usually highly fertile hence, instead of just leaving the fields fallow during therabi season, the farmers can use the moisture left in the soil to grow field pea. In general, pulses, or legumes are known to have deep roots and can be grown without irrigation. Field pea is an important pulse crop that contains a good amount of digestive protein(22.5%), carbohydrate (61.1%), fat (1.8%) minerals (calcium and iron) and vitamins (riboflavin,thiamine). Cultivation of field pea after rice provides better crop rotation andutilizes all the natural resources available. Therefore, the productivity of field pea can be enhanced by adopting the improved production techniques.

Initiative:The farmers of Gidemi village, Phek District, Nagaland, approached KVK-Phek for improved package and practices on Rabi seasoned crop cultivation. Capacities building programme on complete package and practices on field pea, hands on demonstrations in farmers field, conducted diagnostic visits, field days etc. were done for improving the pea production during rabi season. Improved seeds of field pea viz., Aman, Rachna and Prakash varieties were distributed to the farmers for higher production and economic returns

Key result/insight/interesting facts: Production in field pea during Rabi season was successfully introduced and adopted as a viable and sustainable economic activity in Gidemi Village. The average incomes of the farmers were increased during the process due to adoption of improved packages of practices and different technologies disseminated by KVK, Phek.

Impact:The farmers before any intervention used to get an annual income of Rs. 23843.33 from hectare area of field pea production. However, with interventions like soil moisture conservation through locally available mulch materials, Zero till methods and use of improved varieties, etc., the farmers are getting an annual income of Rs. 46096.66 annually from hectare area. The average income of the villagers increased due to adoption of improved packages of practices and different technologies disseminated by KVK, Phek. However, the farmers feel that although their income had increased, it would still take another 1 or 2 years to double their income. Since the intervention of the enterprise, approximately 40% of the Farmers were involved in Horizontal spread of the technologies through farmer-farmer approach. Further, the technology was spread from these farmers to their friends, relatives, and neighbors and resulted in expansion of area under cultivation.

Technology demonstrated	Av. Yield (q/ha)	Av. Gross cost (Rs/ha)	Av. Gross return (Rs/ha)	Av. Net Return (Rs/ha)
Recommended POP in field pea variety Aman	Seed rate: 70 kg/ha Spacing: 8	Seed rate: 70 kg/ha Spacing: 8	Seed rate: 70 kg/ha Spacing: 8	Seed rate: 100 kg/ha Spacing:

	cm (RxR) MOS: October	cm (RxR) MOS: October	cm (RxR) MOS: October	Haphazard MOS: October
Farmer 1	18.75	32000.00	56250.00	24250.00
Control 1	15.61	32000.00	46830.00	14830.00
Farmer 2	14.49	34000.00	87000.00	53000.00
Control 2	9.73	29000.00	58380.00	29380.00
Farmer 3	14.43	54400.00	115440.00	61040.00
Control 3	8.54	41000.00	68320.00	27320.00

1. **Lesson learned:** With proper adoption of intervention like soil moisture conservation through locally available mulch materials, improved methods like Zero till methods and use of improved varieties, etc. the annual income of farmers can be increased.

Seed distribution of field pea under DFI at Gidemi village

Methods demonstration on

Methods demonstration on field pea at farmer's field

Diagnostic visit to farmer's field

II) SUCCESS STORY OF VERMICOMPOST APPLICATION IN WINTER VEGETABLE CROP

Status before intervention:

Chizami is a village in the Phek district of Nagaland. It lies approximately between 25.5918° N Latitude and 94.3825° E Longtitude. The climate of the area is temperate permitting cultivation of large varieties of horticultural crops. The important vegetables grown include cabbage, garden pea and potato. However, the farmers leave their land fallow after the harvest of paddy and there is no outcome during the rabi season. Before the intervention of KVK Phek, the SHGs were engaged in traditional farming practices. Farmers of Phek district do not use any chemical fertilizers or pesticides. So, use of organic source of fertilizers like vermicompost could be an effective solution to maintain soil fertility status, conserve soil moisture especially for winter crops as well as to increase the crop yield. Hence, to overcome this, KVK Phek distributed low-cost vermicomposting bed, Earthworm spp*Eiseniafetida* and also some vegetable seeds.

How farmers approached KVK: The SHGs of Chizami village approached KVK-Phek to conduct training and demonstration on vermicompost and vegetable crops in 2021.

KVK Intervention-Methodology:

The SHG members were trained by KVK Phek through comprehensive training programmes related to vermicomposting and improved production technology of vegetables. Demonstration on vermicompost making was shown to the members of SHG and illustrated on the importance of vermicomposting application in crops as a solution for soil health management and also as an income generation enterprise. They were provided with the need-based knowledge and skills. The SHG members were satisfied with the technology of vermicompost application in vegetable crops and adopted the technology in their field in large area.

Outcome:

With intervention of KVK Phek, the impact of technology adoption in productivity has been observed as it increased the yield of both cabbage and broccoli crops. After knowing the importance of low-cost vermicomposting technology and application of vermicompost in vegetable crops, they started cultivating vegetable crops like cabbage, broccoli etc using vermicompost. As a result of the good production of broccoli and cabbage using vermicompost in the village in the initial stages, the farmers have started growing the crops regularly. The number of farmers growing broccoli especially have grown and neighbouring villagers are also adopting the technology as it increases the crop yield besides fetching good price.

Crops	Technology Demonstrated	Av. Yield (q/ha)	Av. Gross cost (Rs/ha)	Av. Gross return (Rs/ha)	Av. Net Return (Rs/ha)
Cabbage	With vermicompost	271.33	111325	271330	160005
	Without vermicompost (Control)	201.27	101325	211270	94275
Broccoli	With vermicompost	120.65	204000	399250	399250
	Without vermicompost (Control)	79.12	199000	395600	196600

Vermicompost application in cabbage

Vermicompost application in Broccoli