

Information pertaining to successful Front Line Demonstration (FLD) conducted by KVK, West Khasi Hills

Sl. No	Discipline	Crop/enterprise	Technology Demonstrated	Thematic area	Technology details	Year of demonstration and results
1.	Animal Science	Poultry	Improved breed of poultry bird - Vanaraja	Breed introduction	Vanaraja a improved variety of bird is integrated with fish farming providing minimal concentrated feed @20-50 g / day / bird and the birds are allowed to scavenge or fed with kitchen/farm waste. Timely vaccination and deworming is practised. Parameters taken were Average age at 1 st lay (days), Average annual egg production (Nos.), Egg wt (gm), Average body weight at 6 month (kg). Percentage of incidence of diseases, mortality rate (%)	2015-2020 2020- ongoing Average age at 1 st lay(days) = 165 (vanaraja) Average body weight at 1 st lay (kg) = 2.4, Average annual egg production (Nos.) = 142 nos Average Egg weight (g) = 48, Gross cost = Rs 4748 , Gross return = Rs 12480, net return= Rs 7732/- , B:C ratio = 12480/4748= 2.6 (per unit)
2	Animal science	Housing	Deep litter Climate resilient pig pen housing		Deep litter housing system developed by ICAR is designed for high altitude temperate region to Counter the extreme climatic conditions. Comparisons were made with the indigenous housing system in terms of, incidence of diseases, micro environment, productive potential etc. (Low cost climate resilient environment-affinitive pig pen model. Parameters taken were body weight (kg) = 3 rd , 6 th & 9 th month Disease conditions (%) Leg problem: Skin disease: Diarrhoea Respiratory problem	2016-2019 (OFT) 2020- onwards (FLD) Body weight gain (Kg) 3 months = 12.5 6 months = 34.3 9 months = 58.5 Leg problems: Nil Skin disease: Nil Diarrhoea: Nil Respiratory: Nil Mortality: Nil Net return: Rs 13986/unit B:C Ratio: 3

3.	Horticulture	High value vegetable crops	Low cost plastic shelter for high value organic vegetable production	Organic production	Production of vegetables under low cost shelters provides the best way to get better return per unit area throughout the year. This technology provides crop diversification opportunities and supports production of high quality and clean organic produce. Minimum area should be 100 sq. m and length of the unit can be made as per availability of land. The plastic shelters are erected with bamboo or wooden poles of about 1 to 2 inch diameter. UV stabilized polyethylene film (200micron) as roof and 75% shade net as side walls. Manure like cow dung can be applied at 10 t/ha or enriched compost at 5 t/ha.	2015-2017 (OFT) 2018-2020 (FLD) Gross cost: Rs 10200/- Gross return= Rs 28200/- Net return = Rs 18000/- B:C ratio = 2.7
4.	Horticulture	Tomato	Megha Tomato-3	Varietal evaluation	Developed by hybridization and selection of Pusa Sheetal x Lima. Fruit is medium size , round, smooth, attractive at maturity; tolerant to low temperature and bacterial growth The critical inputs utilized while constructing the low cost polyhouses were locally available bamboo, metallic wires for frame development, UV stabilized polyethylene film (200micron)as roof and 75% shade net as side walls. Crop :Tomato, Variety: Megha Tomato3, Spacing:60cm x 45cm, FYM @25 t/ha.	2014-2016 (OFT) 2017-2019 (FLD) Yield potential /ha = 500-550 q. Gross cost= Rs 10200/- Gross return = Rs 28200/- Net return= Rs 18000/- B:C ratio= 2.7

5.	Fisheries	Fish species: Catla, rohu, mrigal, silver carp, grass carp and common carp (gonius can also be incorporated)	Production and Management (Scientific approach in fish farming)	Composite Fish Culture	<p>The main principle of composite fish culture is to increase the growth of fish through full utilization of natural food organisms in all the niches present in the pond, supplemented by artificial feeding. The different compatible fish species which are of mutual benefit to each other have different feeding habit and habitat, therefore there is no competition for food and space.</p> <ul style="list-style-type: none"> • Fish species: Catla, rohu, mrigal, silver carp, grass carp, common carp, gonius • Stocking density: 10,000 nos/ha • Species ratio: 30-40 % surface feeder, 15-20 % column feeder, 40-50 % bottom feeder and 5-15 % macro vegetation feeder • Supplementary feeding- rice bran and oil cake (1:1) @ 2-3 % of the fish body weight. • Regular Liming of fish pond is necessary. 	2014-15, 2015-16, 2016-17, 2017-18 Fish Production = 2500 kg/ha Gross cost =Rs208,120 Gross return = Rs 550000 Net Return = Rs 341880 B:C Ratio = 2.6
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6	Fisheries and Animal Science	<p>Fish species: Catla, rohu, mrigal, silver carp, grass carp and common carp (gonius can also be incorporated)</p> <p>Pigs: Crossbred pigs (Large black and khasi local)</p>	IFS	Pig-cum-fish farming (with horticulture crops)	<ul style="list-style-type: none"> • Pig cum fish farming is a technology that aims at improving the farming system to maximise the production capacity and minimize the expenditure in fish rearing through the addition of fresh pig manure into the pond. • The fish utilize the food spilled by pigs and their excreta acts as organic manure for fish culture and helps in the generation of fish food organisms (planktons) which form the primary feed for fishes. Hence, the cost of fish production is greatly reduced. • Crossbred pigs (Large black and khasi local) can be reared and the housing unit is constructed on the pond embankments so that the farm yard waste is available in close proximity. • The fish combination are catla, rohu, mrigal, grass carp, silver carp, common carp and gonius. Stocking density was maintained at the rate 6000-10,000 fingerlings/ha and 30 piglets/ha of pond area. • Fish Species ratio: 30-40 % surface feeder, 15-20 % column feeder, 40-50 % bottom feeder and 5-15 % macro vegetation feeder depending upon the depth and productivity status of the pond and can even vary with the altitudes. • Vegetables/fruit trees can be planted on the pond embankments or in and around 	<p>2016-17, 2017-18, 2018-19, 2019-20</p> <p>yield of fish = 2758 Kg/ha/yr (with pig integration)</p> <p>Wt of pig (slaughter weight at 9 months old) = 65 kg (30 pigs/ha of pond area)</p> <p>Gross cost = Rs3,08,910</p> <p>Gross return = Rs9,60,525</p> <p>Net Return = Rs7,01,775</p> <p>B:C Ratio = 3.1</p>
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					<p>the pond area.</p> <ul style="list-style-type: none">• Feeding:<ul style="list-style-type: none">a) No feeding required for fish or only minimal feeding with rice brand and oil cake (1:1 ratio) to enhance the growth of fish.b) Feeding cost of pig to be reduced by replacing 70% of the concentrate feed with locally available feeds, kitchen waste and the pig manure can be used for growing of fodder crops/vegetables which serves as feed for pigs.• Regular Liming of fish pond is necessary.• Fish culture is generally practiced at least for 12 months while pigs are reared for a period of 6 to 8 months in the integrated pig-fish system.	
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7	Fisheries	Fish Species: common carp (main species), catla, rohu, mrigal, silver carp, gonius	IFS	Rice-Fish Culture	<ul style="list-style-type: none"> • In rice-fish system, rice and fish complement each other, utilize different ecological niches and function together. Fish lives in between the dense paddy which helps as a hideout against birds, in return fish provides fertilizer with their droppings, eat insect pests and help to circulate oxygen around the paddy field resulting in the improvement in paddy yields. • Modifications in the paddy field involved digging canals or trenches in various forms at least 0.5 - 0.6 m deep and 1 m wide which serve as refuge for fishes. The dykes have to be elevated with gentle slope which can retain or withstand if water level rises and should be installed with inlet and outlet protected with fine screening. • Depending on the location, fencing with netting material can be done to prevent fish from escaping during heavy rains. • Transplantation of paddy (Local or improved variety) are done when the field is ready. • After two weeks of transplantation, fingerlings of common carp (main species), catla, rohu, mrigal, silver carp, gonius are stocked @ 5000-8000 nos / ha 	2016-17, 2017-18, 2018-19, 2019-20 yield of paddy/ ha (integration with fish) 28 Qt/ha yield of fish/ ha (4 months period) = 500 kg/ha Gross cost =1,03,922 Gross return = Rs 252000 Net Return = Rs 1,48,078 B:C Ratio = 2.42
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					<p>of paddy area.</p> <ul style="list-style-type: none">• The fish can be fed minimally with rice bran and mustard oil cake in the ratio of 1:1. Liming and manuring should be done regularly.• Paddy and fish can be harvested at the same time or depending on the availability of water, fish can be further reared after the harvest of paddy where the field can be filled with water which allows the fish to move around and graze in the harvested field.	
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