



## Booming Off Season Vegetables Cultivation with Micro-Irrigation

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### INTRODUCTION



Aadhar No.  
673518861874

Particular	Detail	Particulars	Details
Name	Mrs. Lalrinpuii	Village	Durtlang
Age	46	Sub-Division/ Block	Saikhamaka wn Village,
Gender	Male	District	Aizawl
Education	9 <sup>th</sup> Std	State	Mizoram
Family Type & Size	Join family/4 members	Agricultural Land holding (ha)	0.6 ha
Main Crops/ Enterprise, Farm Animals	tomato, Capsicum, Broccoli, Pak-choy & Coriander	Mobile No.	7640060827

### Challenge

The Aizawl district of Mizoram state is characterized by steep hilly terrain, porous soils which make agricultural and allied activities in the region a great challenge. The poor road connectivity to the farms which are mostly located down the hill slopes far away from the road or inaccessible by vehicles doubles the work of the farmers to transport the inputs to their farms and bring up their harvest to the market. The problem is worsened during the lean season due to shortage of water resources for a long stretch of 5 – 6 months. Major vegetable crops viz. Tomato, Broccoli, capsicum & Pak-coy productions in Aizawl District ranges in 5280, 1220, 1090 & 50 tonnes respectively against cultivated area 601, 175, 112 ha projecting a productivity of 8.79, 6.97, 9.73 & 14.90 t/ha (Dept. of Hort., Govt. of Mizoram, 2017). In apart to the productivity sighted above, India's productivity of tomato, broccoli & capsicum ranges as 25.04, 19.13 & 13.58 t/ha. Contrarily to the existing production scenarios, development in agriculture is further hindered by lack of quality seeds & scientific knowledge, high incidence of pests, diseases & weeds, low temperature during winter season and difficulty in marketing of the farm produce. All these problems led to low yield of crops and marginal income of the farmers.

## Initiative

Considering all the problems and challenges, the team of KVK Aizawl being the front-line institution have undertaken the maximum possible initiatives in the form of scientific interventions to tackle the problems which included timely production and supply of healthy seedlings and planting materials under polyhouse/protected cultivation system, micro-irrigation system using water harvested in Jalkund (micro water harvesting structure). The crops cultivated in her farm during the off-season were tomato, Capsicum, Broccoli, Pak-choy & Coriander.

1. A polyhouse of 5x8m dimensions was constructed in her field as critical inputs and technical know-how from KVK, Aizawl which helped in timely and sufficient production of healthy seedlings.
2. A jalkund of 5x4x1.5 m dimension and a holding capacity of 27,000 litres was also constructed on the upper part of the field of filed. The rainwater harvested during monsoon is utilized for irrigation of crops during the winter season through gravity

fed micro-irrigation system (drip & sprinkler).

The farmer was also given scientific know and technical knowledge through trainings, demonstrations and diagnostic visits in her farm. Further in a step-up coordination with the State Agriculture Deptt., Gov. of Mizoram another Hi-Tech Polyhouse was constructed at the farm. KVK Aizawl, CAU (I) have given HYV tomato (Variety: Arka Rakshak & Arka Abhed) developed by IIHR Bengaluru, Broccoli (Variety: CLX 3512), Capsicum (Variety: Arka Atulya, CPMRH-1) to enhance the productivity since 2020.

## Key result/Insight/Interesting fact

During the normal cultivation period, the cropping period of tomato, broccoli, capsicum & pak-choy are Oct – Feb, March – June & June – Aug respectively, however, after the intervention, i.e. micro-irrigation by utilising the water from jalkund, off season cultivation of this crops are successfully done during 2<sup>nd</sup> fortnight March – 2<sup>nd</sup> fortnight Aug, Jan -1<sup>st</sup> fortnight March, Sept – Dec & Oct. – March respectively.

**Table 1:** Before & After intervention observations.

Crop	Before intervention (Avg. of two years)			Crop	After intervention (Avg. of two years)		
	Cropping period	Avg. Yield (Kg/acre)	Income (Rs.)		Cropping period	Avg. Yield (Kg/acre)	Income (Rs.)
Tomato	Oct – Feb	9400	1,13,000	Tomato	2 <sup>nd</sup> fortnight March- 2 <sup>nd</sup> fortnight Aug	14400	2,13,000
Leafy Mustard	March - June	1800	12,000	Pak-choy	Jan- 1 <sup>st</sup> fortnight March	9000	1,35,800
French bean	June – Aug	3141	45191	Broccoli	Sept - Dec	7560	1,50,100
				Capsicum (polyhouse 40 m <sup>2</sup> )	Oct-March	1336/ 40 m <sup>2</sup>	3880 (1 <sup>st</sup> Year)
<b>Total Income</b>		<b>14341</b>	170191	<b>Total Income</b>		<b>32296</b>	502780

## Impact

Before the intervention, only local leafy vegetables were cultivated during the summer season and the fields were left uncultivated during the winter season which

led to a low income of the farmer. However, after the interventions made in her field, an increase in yield of 32,296 kg from a mere 14,341 kg were achieved with spike benefit of 5.02 lakhs income. Also, there is 30-40 %

reduction in weed growth after adopting cropping system. She could also able to fetch higher price of the farm produce because of the off-season cultivation especially tomato which was fetching almost double the price than during the normal season. Her works and efforts made have been appreciated by fellow farmers and are ready to adopt the interventions in their field.

### Lessons Learned

The lesson learned through this initiative and her success is that the worst

situation and the challenges can be converted into an opportunity if the right knowledge and scientific know how are provided. This initiative can be taken for other high value crops which will give farmers additional income during the off season. In an interaction she acknowledged in quote “with right idea and technology every farmer in the region can succeed if he or she is willing. I would like to thank all the Departments of Mizoram, KVK Aizawl and IIHR for helping me in understanding such farming method.”

### Supporting Quotes and Images



**Figure 1:** Micro water harvesting pond, Jalkund at farmer's field



**Figure 2:** Cultivated tomato field view along with Experts of KVK Aizawl





**Figure 3:** Cultivated capsicum under gravity drip system in protected structure & its harvest



**Figure 4:** Harvested field produce during field day organized by KVK Aizawl.

### Additional Information

Her effort and commitments have sighted out amount the farming community and thus the Nation Doordarshan Aizawl has covered an interview of her work. Further when she was recommended by Krishi Vigyan Kendra

Aizawl for Best farmer of Mizoram state Award she was awarded the Best farmer Award of Mizoram by the Central Agricultural University, Imphal at the CAU Regional Agri Fair, at Imphal, 2021.





**Figure 5:** Doordarshan National, Aizawl, Mizoram telecasted her interview on national channel on her success.



**Figure 6:** Awarded Best farmer of Mizoram state during the CAU Regional Agri Fair, at Imphal, 2021