

Product wise action points

Lakadong Turmeric, West Jaintia Hills, Meghalaya

Cultivated in the Nongbah-Shangpung belt of West Jaintia Hills district with around 1000 cultivators of the crop spread over 2577 hectares. Most unique quality is the curcumin content. Lakadong average curcumin content is 7.5-9% (highest in the world) while most other turmeric varieties can boast of only 3% or less. With Lakadong you get more curcumin per gram. As for colour, Lakadong turmeric has a bright, golden yellow hue that can only come from the high curcumin content. This gives the food that rich and appealing deep yellow colour. Further, there is a clear earthy and subtly nutty taste & a pleasant aroma to it. It is highly potent - hence, you need less quantity for cooking. It has uses in cosmetics, food, value added products and medicine.

Problems

1. *The decline and non-availability of quality mother rhizomes is a growing cause for concern. It is understood that currently the lack of any proper seed bank or storage facility for rhizomes cause them to be stacked on top of each other in plastic or gunny bags causing them to get spoiled or lowering the quality of the turmeric.*

Proposed Interventions

- a. A community seeds bank is a locally governed and managed, mostly informal institution whose core function is to multiply and maintain seeds for the use of local farmers. This concept is in harmony with Lakadong turmeric production and conservation, since it is a location specific crop.
 - b. NESFAS (North East Slow Food & Agrobiodiversity Society), a regional NGO has been promoting low cost and very effective community seed preservation banks. Methods such as these can be looked into. (<http://www.nesfas.in/laitsohpliah-starts-community-seed-bank/>)
 - c. Turmeric needs to be stored in a cool and dry place as done in the underground storage pits such as “Peve” at Sangli (Maharashtra). Invest India can connect NESFAS & SURE with growers from the district to better understand their storage capacity and to get a way forward for improving the storage of rhizomes in Meghalaya.
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2. *As it is grown organically, cow manure proves to be the best manure in terms of the yield quantity and high quality of the turmeric. But, very few farmers have their own cows due restrictions in keeping cows in their villages, fears around illegal cow smuggling through Bangladesh and lack of herders to watch the cows on the hill slopes.*

Proposed Interventions

- a. Innovative options for fertilization should be supported and farmers should be trained to use blended composted cow manure so that a small amount of cow manure can be used with other forms of organic compost.
 - b. Capacity building and sharing knowledge with key stakeholders (farmers) about important agro-technique for enhanced production, insect pest and its management, diseases and its control measures & also, post-production & marketability.
3. *Pests are a common problem for turmeric growers. The leaf blotch disease which is also prevalent in other plants such as in the betel leaf is a common affliction.*

Proposed Interventions

- a. R&D institutes need to be contacted to examine organic methods of pest and disease control especially the prevalent leaf blotch disease (*jing pang tram*).
 - b. Turmeric grown on hill slopes is healthier and less prone to pests as compared to those rhizomes that are grown in large kitchen gardens near homes. The reasons for the same need to be researched so that effective pest control methods can be adopted.
4. *A major problem is the lack of testing centres in the state and region. Curcumin testing is currently being done with samples sent to Delhi or Hyderabad at very exorbitant rates.*

Proposed Interventions

- c. A testing laboratory needs to be established in Meghalaya so that curcumin testing can be done in an easier and more effective way. This can be aided and facilitated by Govt. But it needs to be established by a private player for it to be commercially sustainable. PPP models can be explored.
 - d. Traditional ecological knowledge on how to increase curcumin content is available. This needs to be scientifically researched and validated.
5. *Turmeric is sun dried in the open on cement or on mats for up to two weeks which makes it susceptible to impurities and contaminants. This lowers the value and quality.*

Proposed Interventions

- a. Small and low-electricity consuming processing machines for drying, grinding and slicing will need to be provided.
- b. Higher value machinery (curcumin extraction units, oleo resin extraction machinery, etc.) also need to be provided with proper training and execution plans.
 - i. The oil extraction unit (in Laskein) is not functioning due to lack of training as well as lack of use for many years. Its revival is a low hanging fruit that should be explored.

- c. Farmers need to be trained on how to use them.
6. *Large electric dryers provided under a previous Himalaya IFAD scheme remain unused due to erratic electricity connection as well as high electricity bills. It goes to show a dissonance between technology people need and can actually use and ones that are provided to them.*

Proposed Interventions

- a. The state Govt. is looking into alternative sources of energy to stabilise electricity in the West Jaintia Hills region through ways such as – hydro-turbines, generators, etc. Collaborative efforts to provide better energy sources should be examined by Invest India as a point of intervention as well.
 - b. Small solar dryers such as the ones provided under Mission Lakadong (few are there) are much more preferred than larger electricity consuming dryers.
7. *The farmers lack the financial capacity to stock their produce until the lean seasons, overhead and future costs.*

Proposed Interventions

- a. There is a need for producers to organise into associations or clusters. Most of the farmers are small or marginal farmers. They cannot produce in large quantities unless they are aggregated together. Facilitation of these farmers’ organisations is an intervention that is desired both by Govt. Officials as well as Lakadong growers themselves.
 - b. Establishment of a curcumin unit in Meghalaya will help pass on benefits of this huge margin among farmers and would help implement the concept of conscious capitalism. (Practiced by Tata Beverages where the profits are shared with the tea growers).
8. *Small entrepreneurs dealing with value added products of turmeric are often at an early stage in need of handholding and support in terms of banding, packaging and market linkages. Many are still yet to be onboarded onto e-commerce platforms as well.*

Proposed Interventions

- a. Invest India can support this by bringing in contacts with the Indian Institute of Packaging, Autonomous body under MOCI. Along with this, help is needed in bring standardization, barcode labelling, etc.
- b. Buyer-seller meets can be arranged.
- c. Invest India can support small entrepreneurs such as Le Organica by expediting their applications for approval from bodies such as AYUSH or in availing licenses for the value-added products such as the turmeric wine.

- d. Better marketing strategy using social media & other channels to emphasize especially on the benefits of the high curcumin content of Lakadong.
9. *The perception of Lakadong as ordinary turmeric is causing low sales and there is some duplication of the product from other places. Further, in the informal market, there is mixing of inferior qualities of turmeric and marketing them as Lakadong.*

Proposed Interventions

- a. The fact that Lakadong turmeric is still not protected by Intellectual Property Rights makes it vulnerable to duplication and mixing where there is no quality assurance mechanism. GI tagging needs to be completed and implemented.
- b. The lack of quality assurance most pertinent fact that stops Lakadong turmeric from being marketed as a premium product. An independent body is needed to ensure quality from production to post-harvesting process.
- i. The role of middlemen needs to be regulated and restricted with the direct involvement of Govt agencies.

Sr. No	Proposed solutions	Agency
1	Curcumin testing laboratory in Meghalaya – PPP model / Pvt. Player	Mission Lakadong, Directorate of Horticulture, Meghalaya/ ICAR/ Ministry of Commerce and Industry
2	Organise producers into associations / industry clusters	Mission Lakadong, Directorate of Horticulture, Meghalaya/ Ministry of Commerce and Industry
3	Alternative sources of energy	Ministry of Power / Mission Lakadong, Directorate of Horticulture, Meghalaya / Ministry of Food Processing Industries
4	Community Seed Bank	Ministry of Rural Development /Community & Rural Development Department, Meghalaya – partnership with NESFAS (non-govt organisation)
5	Establish small and usable sorting, grading, cleaning, slicing and drying units - solar powered	Mission Lakadong, Directorate of Horticulture, Meghalaya / Ministry of Food Processing Industries
6	Blended Composting Methods	Mission Lakadong, Directorate of Horticulture, Meghalaya
7	R&D for Pest & Disease Control	Indian Council of Agricultural Research (ICAR)
8	Skill development & capacity building for farmers	Indian Council of Agricultural Research (ICAR)

9	Establishment of a curcumin unit in Meghalaya	Mission Lakadong, Directorate of Horticulture, Meghalaya / Ministry of Food Processing Industries
10	Supporting small entrepreneurs through arranging buyer-seller meets, expediting applications, etc.	Ministry of Commerce & Industry
11	Better marketing strategy using social media & other channels to emphasize especially on the benefits of the high curcumin content of Lakadong	Ministry of Commerce & Industry
12	Branding & Packaging help: Connecting with Indian Institute of Packaging	Ministry of Commerce & Industry
13	Need for independent quality assurance body	Mission Lakadong, Directorate of Horticulture, Meghalaya / Ministry of Food Processing Industries