

Pusa Navrang grape: A Naga woman's Successful Story of Production and Value-Addition

Sub-tropical viticulture in the North Eastern India has picked up in the last few decades with the collective efforts of some enthusiastic and amateur growers. At present, Bangalore Blue cultivar is the major variety grown in Mizoram and adjoining states. Almost a decade back, Ms Sentiben, a tribal woman from Nagaland, out of curiosity planted a few rooted cuttings of a unique teinturier variety 'Pusa Navrang' at Dimapur from the ICAR-Indian Agricultural Research Institute, New Delhi. The coloured bunches inspired her to learn and perfect the art of making quality red wine. Later she made this her entrepreneurial venture and labelled her produce as LURO wine, which is today a total sellout in the town. With this taste of success, she is now venturing into it as a professional entrepreneur and plans to establish a nursery for area expansion with her women group of 10 members who are helping in pooling the produce for bulk production of Pusa Navrang. She and her group are planning big to produce certified 'Organic red wine'.

INDIAN viticulture is unique. Despite several adversities for the normal growth and productivity of vines under tropical climate, Maharashtra and Karnataka account for the majority of grape production in India with the region registering the world's highest productivity. Grape is grown on an area of 1.40 lakh ha with an annual production of 3.125 million MT. Out of this, about 34,000 ha is covered under wine grapes producing about 17 million L of wine per year. For an industry that thrives on celebratory occasions, the wine industry is coming of age in India with annual growth of 20-30% and export growth of 40% per year.

The expansion of viticulture in the non-traditional sub-tropical regions in the country is an important step in meeting regional and national demand. More so ever, the Northeastern states especially Mizoram, Nagaland and Arunachal Pradesh where sub-tropical viticulture have gained popularity in the last few decades. Processing is one of the most important means to reduce postharvest losses and add value to horticultural crops. Processed products are

shelf-stable, and can be stocked and marketed over time, thereby, providing valuable time and advantage to market the products according to demand. However, a misconception that limits a person from taking up processing is the notion that it requires a huge investment. While it is true that upscaling or setting up a processing plant would require substantial capital investment, the indispensable factor any aspiring processor must consider before deciding to invest in a product that sells and the know-how to prepare/manufacture that product. It is, therefore, important to start small, learn the basics and techniques, and test for consumer acceptability of the product. Only when the processor is convinced that



The first bud burst and fruiting in the spring of 2016



Ms Sentiben, the woman farmer displaying the plentiful harvest

the product would sell should she/ he decide to invest more. Otherwise, investing big would put any business in jeopardy and at risk of heavy losses.

This report details how an ICAR technology was adopted and improvised by a youth from Nagaland which has changed the total outlook of horticultural entrepreneurship through high-quality winery.

The Journey

In February 2014, Ms Sentiben, a tribal women from Nagaland, procured a few rooted cuttings of grapes cv. Pusa Navrang from ICAR-IARI, New Delhi. A gardening enthusiast, she planted them on her homestead. In 2016, the vines raised by her gave the first crop. With technical guidance from ICAR scientists, she learned to take proper care of the vines including training and pruning. With good management practices, she was able to obtain high-quality bunches, which was sufficient for trying her hand at wine-making. Learning the science and art behind quality wine-making, she spent the next few years conducting trials and by 2020, she was able to standardize the total process on a pilot scale. She invested the next couple of years during the COVID-19-imposed national lockdown and only did the mass multiplication using hardwood stem cuttings from the mother plant. The idea was to form a small women's group and go for an early expansion. She further obtained an FSSAI registration, designed her product label, and learned the complete trade. In December 2022, she launched her homemade and hand-crafted wine – LURO, meaning '*time of harvest*'. This is an account of her road to empowerment, a testament to the impact ICAR technologies and varieties make at an individual level in far-flung non-traditional regions for grape growing.

How it all began?

Ms Sentiben belongs to the Ao Naga tribe and resides in Dimapur, Nagaland. She has a graduate degree in Psychology. During her time in Delhi as a student, she came across the fruiting of 'Pusa Navrang' grape during a chance visit to ICAR-IARI, Pusa Campus, New Delhi. 'Pusa Navrang' is a hybrid variety (Madelienne Angevine × Rubired) of grape that was developed and released from ICAR-IARI, New Delhi in 1996-97. It is a teinturier

variety meaning both the skin and pulp are coloured and is suitable for both table juice and coloured wine preparation. A gardening enthusiast, the experience of the field visit stayed with her and encouraged her to try grape-growing back home in Nagaland.

In February 2014, Ms Sentiben procured a few rooted cuttings of 'Pusa Navrang' from ICAR-IARI, Delhi. She planted them around her homestead in Dimapur and took proper care of the growing vines. She remained in constant touch with the scientists (Authors) from ICAR-IARI, Assam, and ICAR-IIHR, Bengaluru, learning about good management practices to raise a healthy crop. She also referred to various technical bulletins and literature developed by ICAR as sources of information for different cultural practices, training, pruning, nutrient management, pest and disease management, etc. In 2016, two years after planting, she harvested the first crop. To ensure maximum utilization of available space and augment production, she trailed some vines onto her home's rooftop where she had erected a bower using locally available bamboo. The bunches were compact, the fruits were of good quality, the berries were dark bluish-black, had a juice recovery of more than 73%, and an average TSS of 16.4°Brix. Having learned the art of vine growing, the quality of the coloured bunches inspired Ms Sentiben to experiment with the idea of value-addition through wine-making.

Value-addition through wine-making

Her limited produce meant that Sentiben could only try wine-making on a home scale. However in doing so, she overcame an obstacle where most enthusiasts fail – investing big initially. Using a home-scale fermenter she learned the art of winemaking and then spent the next few years conducting trials. Achieving stability in the appearance and taste of the finished product in every batch is an indispensable factor for the success and consumer acceptance of any product. By 2020 she was able to standardize the method on a pilot scale.

Setback along the way

Feeling confident that she would be able to introduce the product to consumers, she decided to increase the production of grapes. With technical guidance from ICAR scientists, she learned the method of propagating



Rooted cuttings prepared from the mother plants and their planting along walls

grapes through cuttings from the mother plants. In 2020, she developed a small farm in her native village and planted the rooted cuttings. Unfortunately, the COVID-19 pandemic struck and the nationwide lockdown prevented her from taking care of the farm. The vines did not survive.

Brand LURO is launched

Despite the setback brought about by the pandemic, she stuck to her aim of introducing her product to the market. She went about sourcing inputs such as bottles and caps and spent time learning to design the product label on her own. She also learned about FSSAI guidelines for different food products including fermented beverages. In 2022, she obtained the FSSAI registration for her product and by December 2022, Sentiben launched her product – LURO which translates to ‘Harvest’. It is derived from the Ao Naga word *‘Alurowa’* meaning *‘the time of harvest’*. Aptly so, considering the success she has achieved while reaping the fruit of many years of passion, learning, skill development, and dedication. She describes her product as a small batch, homegrown, handpicked, and handcrafted. Each bottle of 750 ml fetched her a price of 1,200, which reinstated her belief in obtaining higher revenues and better income by integrating grape farming with processing in high-quality winemaking.

Looking to the future

Ms Sentiben looks back with pride to the day she procured the cuttings of Pusa Navrang from ICAR-IARI, Delhi. Her journey from planting through vine care to winemaking, and ultimately launching her product has been one of multi-disciplinary learning and skill development. Her agri-preneurial tryst has made her

feel empowered and confident. While the pandemic did bring about some setbacks, she is determined to follow her dreams. She intends to undergo training and skill development to further refine and improve her crop production and processing techniques. Product diversification to beverages and raisins is another area where she has set her mind on; while also considering other fruits and vegetables. Her immediate plan, however, is to go for a farm expansion to ramp up production. This is where she plans to bring more women folk on board whose cooperation would help the venture grow and also help each member progress. She also intends to seek assistance under the PMFME and MSME scheme of the government of India through which she hopes to upscale her venture. She also hopes to connect and build a network with similar small-scale processors.

SUMMARY

Technologies and varieties developed in research institutions are, at most times, promoted to bring about visible impact on a mass scale. However, the true value



Display of labelled bottled red wine – LURO

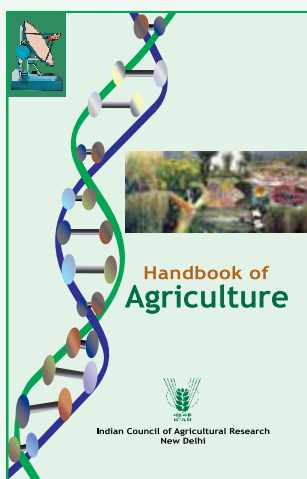
of a variety is often revealed at the level of individual farmers, where the variety/technology brings a noticeable improvement in an individual unintentionally. Ms Sentiben's success is a reminder of the impact that ICAR technologies, know-how, and varieties have not only on a mass scale but also, and importantly, in empowering individuals. It shows the potential of the Pusa Navrang cultivar of grapes in the subtropical regions of the Northeast India. It also demonstrates how combining fruit production with on-farm processing can be more remunerative for farmers. At a time when most crave instant success, her journey from vine to wine underscores the importance of blending passion and dedication with patience and getting the basics right. Her achievement, no matter how minute, is a testament to the potential of

entrepreneurship through processing and value-addition in horticulture, and, more importantly, how processing does not always require huge investment, but rather mastering the finer details and succeeding on a micro-scale before deciding to invest big. At a time when most youngsters do not prefer to take up agriculture as a profession, Ms Sentiben's success story can serve as an inspiration to attract youth to horticulture-based entrepreneurship.

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Handbook of Agriculture



The Handbook of Agriculture is one of the most popular publication of the ICAR with a wider readership. The present edition presents science-led developments in Indian agriculture, the ongoing research efforts at the national level and with some ideas on the shape of future agriculture. While information in some chapters such as Soil and water, Land utilization, field and forage crops has been updated with latest developments, many new topics such as the Environment, agrobiodiversity, Resource conservation technologies, IPM, Pesticides residues, Seed production technologies, Energy in agriculture, informatics, Biotechnology, Intellectual Property Rights, Agricultural marketing and trading and Indigenous Technical Knowledge have been included in the present edition. For those who take intelligent interest in agriculture – and their number is increasing fast – the present edition would serve as a useful book.

TECHNICAL SPECIFICATIONS

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