# Apple Revolution in the Non-Traditional Tropical Areas of Himachal Pradesh

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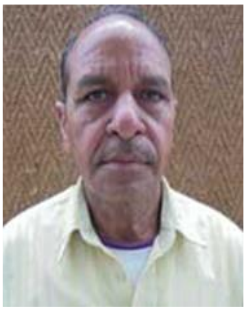
**ABSTRACT**

Himachal Pradesh is known as the Apple State of India due to its high production. About 70% of the farmers are engaged in apple production here. Being a temperate fruit, it was always considered to grow only in snowy hills with low chilling hours but just a little innovation created history making people of Himachal Pradesh astonished. The variety HRMN-99 developed by Shri. Hariman Sharma can grow in non-traditional subtropical and tropical areas of Himachal Pradesh.

## INTRODUCTION



**Name:**
**Hariman Sharma**
**Age: 68 years**

**Address:**
**Village Gllasin, Post Office Dabhla, Tehsil Ghumarwin, District Bilaspur, Himachal Pradesh**

**Qualification:**
**Under Matric**

To increase effectiveness, competitiveness, resilience to shocks, or environmental sustainability and thereby contribute to food security and nutrition, economic development, or sustainable natural resource management, individuals or organizations that innovate in agriculture introduce new or existing products, processes, or organizational methods into a particular context (FAO, 2019). According to

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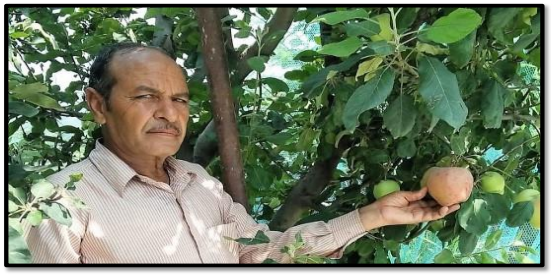
UN Innovation Network (2019), innovation is defined as "doing something new and different," which can include approaching a new challenge with a tested solution, coming up with a novel solution for an existing problem, or solving an old problem in a novel way.

Since the apple was originally grown in Thanedar hamlet in the Shimla area, Himachal Pradesh has gained the nickname "Apple State." The state's principal cash crop is apples as well. The ability to grow apples for cash has allowed the people of Himachal Pradesh to improve their economic situation. It is quite amazing to learn about the tremendous endeavors of a brilliant and kind person like Late. We will always be grateful to Satyanand Stokes for his assistance in bringing the "Delicious" quality of apples to this region of the world. All throughout the hill state, apples are farmed. Nonetheless, Jubbal Kotkhai and other upper Shimla district areas produce 70% of all apples grown in Himachal Pradesh.

Not even in the year 2005 did anyone expect that apple plants could be cultivated successfully on the snowy hills with mango and pomegranate in lower Himachal Pradesh, which is only 700 meters above sea level and experiences summer temperatures ranging from 40 to 450C. Even yet, in 1965 the Himachal Pradesh government established a research center in the Bagthan area of the district Sirmour, at a height of just 800 meters, with the purpose of cultivating apples in lower Himachal Pradesh. Scientists were failing to achieve results despite investing billions of rupees. As a result, the project was abandoned in 1975.




**Importance:**

Being a temperate fruit crop whose chilling requirements are high its unimaginable to grow apple in the area having a temperature as high as 44º C. But the variety developed by the innovative farmer Mr. Hariman Sharma can grow in this warm climate. The variety is named after his name as “HRMN-99” which can sustain in plain, tropical and subtropical areas. The chilling hours for flower development and fruit setting is not required by this variety. It was a great achievement for the subtropical and tropical areas of Himachal Pradesh who never thought of apple being grown in their areas. Thus, the demand for this variety increased evenly year after year due to its availability in off season period which also helped to fetch good market value. In other words, we can say that this has brought “Apple Revolution” in the non-traditional tropical and subtropical areas.

**The Man behind the Innovation:**

- Hariman Sharma, a creative farmer from Paniala village in the Bilaspur district of Himachal Pradesh, is the one who brought about this innovation.

- His unique apple variety, HRMN 99, has inspired horticulturists in Bilaspur and other lower hill districts in the State, as well as thousands of other farmers in the area.

- Hariman was adopted and raised by his uncle after he was orphaned at a young age, and after finishing Class X, he chose to pursue farming.

- His natural interest in horticulture led him to grow a variety of fruits, including apple, mango, pomegranate, kiwi, plum, apricot, peach, and even coffee. An intriguing aspect of his farming practice is that he can grow both apples and mangoes in the same

**Newness:**

During the years 2015–2017, the National Innovation Foundation–India (NIF) transplanted around 10,000 saplings to 1190 farmers' fields and 25 organizations in 29 states and 5 union territories in order to study the compatibility and adaptation of the HRMN–99 in varied agro-climatic conditions of the country. Farmers across the nation demanded more saplings as a result of reports of successful fruiting in Manipur, Madhya Pradesh, Uttar Pradesh, Maharashtra, Gujarat, Dadra and Nagar Haveli, Karnataka, Haryana, Rajasthan, Jammu, Kerala, Uttrakhand, Telangana, Himachal, and Delhi.

The fruit quality of 'HRMN-99' with good nutritional content is confirmed by the analysis conducted by IARI, New Delhi. Its advantage over other low chilling varieties like as 'Anna' and 'Dorsett Golden' is confirmed by morphological and SSR DNA finger printing conducted by NIF from Gujarat State Biotechnology Mission. NIF has submitted the PPV & FR Act registration application for the 'HRMN-99' variety on behalf of Mr. Sharma.

**What led to innovation?**

In 1999, a fruit-bearing apple sapling was noticed by Shri Hariman Sharma in his courtyard. He disposed of the seeds in the courtyard in 1998 after buying them from the Gumarvi hamlet in the region of Bilaspur. As a creative farmer, he recognized that the apple tree producing fruit in a warm location like Paniyala, 1800 feet above sea level, was unusual and unprecedented. He thereby kept the plant alive up to next year. Because there were no apple trees available, he took some branches the following year and grafted them on a plum tree. Fruit quality was good and the grafting process was successful. He got some crab apple saplings from Shimla in 2004–05, and he grafted them. He planted apple trees in a miniature orchard, and they are still producing fruit.

He planted his own 'HRMN-99' apple cultivar and it is producing fruit on a regular basis. He now raises the grafts on crab apple seedlings that he receives from Kashmir each year. Apples are often produced in the Himalayan range, which receives 1000–1500 hours of cooling each year. However, Hariman's heat-tolerant cultivar may be grown in low-lying hill/plain regions that are only 550 meters above mean sea level.

**Scaling out the innovation:**

In Himachal Pradesh's Bilaspur, Hamirpur, Kangra, Una, Mandi, and Solan districts—districts where apple cultivation was previously unfeasible—Mr. Sharma sold 1,90,000 apple trees to 6000 farmers. In addition, he has given 5000 plants to NGOs in HP and 6000 plants to research stations and the Department of Horticulture. Dr. P.L. Gautam a renowned scientist and former

chairperson Plant Protection and Farmer Rights Authority introduced him with the National Innovation Foundation. Between 2014 and 2017, he provided 10790 plants to 29 states around the nation with the aid of NIF. 2.25 lakh plants have been dispersed across the nation as of this writing. 8,000 farmers and scientists from over the nation have visited his farm to yet, and they have expressed their appreciation for the work done there, as noted in the visitor's book.

At Rashtrapati Bhawan in New Delhi, the 'HRMN-99' variety is already bearing fruit; Navada (Bihar); Bangalore and Belgaon (Karnataka); Bangalore and Hisar (Haryana); Pilibhit (UP); Haldwani and Kotbag (UK); Scihoor and Hawalpur (MP); Manipur (Chhattisgarh); Kerala; Maharashtra; Rajasthan; Dadar Nagar Haweli; Ahmadabad and Navsari (Gujarat); and six districts of Jammu region (J&K). The process of spreading this idea out is still ongoing, though. Upon his own initiative, farmers from the seven districts of Himachal Pradesh planted one million apple seedlings, all of which are now successfully bearing fruit.

He was appointed by the Himachal Pradesh government to the Dr. Y.S. Parmar University of Horticulture and Forestry Board of Management. He is currently a member of the State Level Executive Committee for the Government of Himachal Pradesh's Mission of Integrated Development of Horticulture (MIDH) Project, as well as the Research Council of the Dr. Y. S. Parmar University of Horticulture and Forestry, Nauni, Solan. Researchers at NIF have studied the HRMN-99 variety and planted saplings in all 29 Indian states; of those, 23 have seen the HRMN-99 type begin to bear fruit. Furthermore, plants in Bangladesh, Nepal, Germany, and Jamaica are productively bearing fruit.

## CONCLUSION:

Agri innovation like this can boost all the small and marginal farmers to expand their practical knowledge. Shri Hariman Sharma is 62 years innovative farmer from Bilaspur district of Himachal Pradesh who is a great source of inspiration to not only farmers but also to the researchers, scientist and all the research institute that with a strong will power everything can be achieved. Mr. Sharma with his innovative skills have achieved a huge success and also helped with fellow farmers to boost their income. This is a great grassroot innovation enhancing rural entrepreneurship. Through his nursery he is also generating employment and also this variety HRMN-99 have boosted the interest of farmers in agriculture field allowing rural youth to start agri entrepreneurship.

## AWARDS AND HONOURS:

Shri Hariman Sharma, who the media has dubbed the "Apple man" of the Bilaspur district, has won numerous honors at the local, state, and federal levels. The Honorable President of India, Shri Pranab Mukherjee, recently presented him with a national honor at Rashtrapati Bhawan. Both the current chief minister, Shri Virbhadra Singh, and the former chief minister of HP, Shri Prem Kumar Dhumal, have honored him as "Prerna shrot." He just got an award from PUSA, New Delhi, and IFFCO as well. Numerous organizations have given Mr. Sharma widespread recognition for his inventiveness on both a state and national level. A few notable ones are the Innovative Farm Award given by the Union Minister for Agriculture and Farmers Welfare on March 21, 2016 and the Proud of Punjab, Haryana and Himachal Pradesh Award given by the Hon'ble Governor of HP on April 9, 2017. There are approximately twelve major awards and recognitions.

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