

Mountain Hazelnut continued..

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Mountain Hazelnuts

MHV, Mongar



Mountain Hazelnut plants trees only on fallow and degraded land as a source of supplementary income for farmers. Pictured is a hazelnut tree growing robustly on rocky fields where other crops may not fare so well.

Over the course of March and April, Mountain Hazelnuts is undertaking a major orchard improvement program, where carefully selected varieties, including both production trees and pollenizers, are being grafted to increase flowering and pollination for better nut production. In 2022, this orchard improvement program is being undertaken in 23 Gewogs under 7 Dzongkhags (i.e. Mongar, Lhuentse, Trashiyangtse, Tashigang, Pema Gatshel,

Bumthang & Trongsa), based on the maturity and vigor of the trees.

The Company plans to carry out this program in a stepwise manner, focussing on the above Gewogs initially, and then expanding as we progress with and demonstrate the success of the program. In the meantime, field staff will continue to provide necessary technical support to all hazelnut growers to take care of their orchards. The company will also purchase all nuts harvested by the growers.

Growers who are not currently involved in this year's orchard improvement program will have the opportunity to participate in the following years as our orchard improvement program is for four years (2022 to 2025). However, for growers who are able to undertake the grafting on their own, we can provide scion wood so that they can undertake the grafting this year. In this regard, growers are encouraged to register their interest with their local Field representative, call our toll-free number 1232, or register online [HERE](#).

All orchard improvement activities are being undertaken in line with prevailing RGoB Covid protocols, including appropriate mask-wearing, social distancing and small group sizes.

THE WAY FORWARD

1. ORCHARD CONVERSION IN LOWER ALTITUDES (<2,400m)

- With the Ennis variety not performing optimally well in lower altitude orchards due to climate-related factors, MH plans to adjust the mix of production

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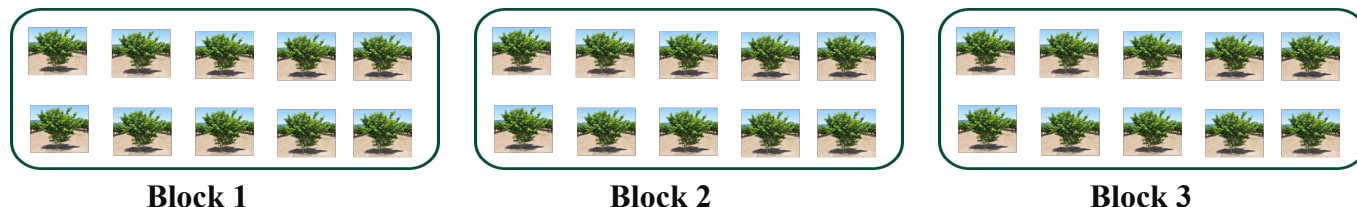
varieties in subject orchards to those that require lower chill hours/short period of dormancy.

- Prior to undertaking orchard conversion, each orchard will be visited by MH staff to obtain grower approval for the process.
- We are targeting 4,000 acres of prime lower altitude orchards (<2400 m), in which Ennis trees will be replaced with more climate-appropriate production varieties, through grafting, over the next 4 years.
- Below is the number of acres of orchards which will be grafted for the first time each year:

Year	Orchards to be grafted (acre)
2022	500
2023	1,000
2024	1,250
2025	1,250
2026	To be determined
Total	4,000

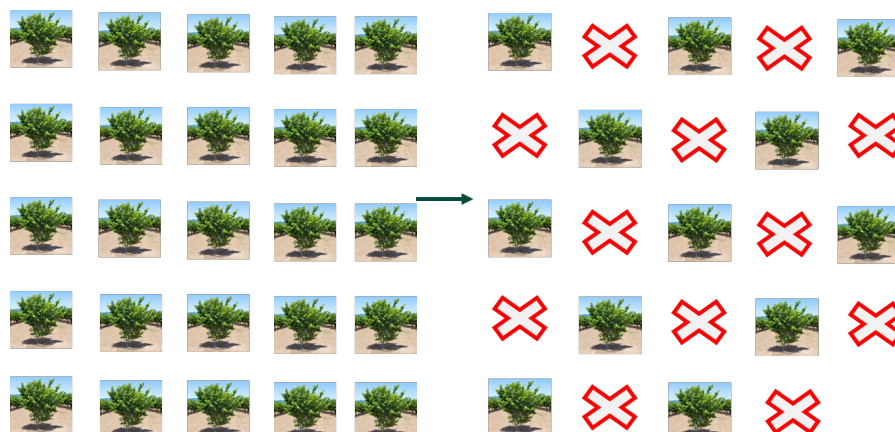
The orchard conversion will be carried out in the following way:

I. Dividing the Orchards into blocks



- The orchards will be divided into three Blocks. An orchard will be grafted over a period of three years, $\frac{1}{3}$ of the orchard would be grafted in the first year followed by another $\frac{1}{3}$ in the 2nd year and the remaining in the 3rd year.
- Prior to grafting, the orchard thinning will be done to maintain a tree to tree spacing of 4x4 m from 4x2 m spacing

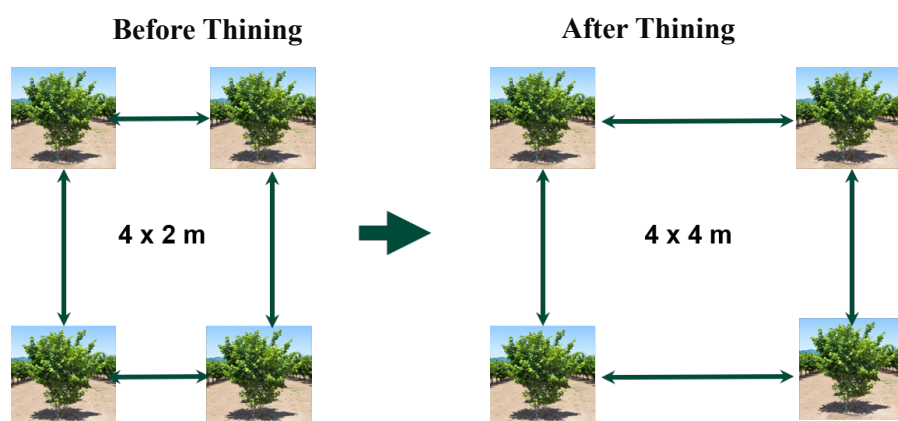
II. Thinning



The trees marked X will be removed. Removing trees creates more space between the trees. More spaces means more sunlight and airflow in the trees (reduces fungal disease incidences) and reduce competition for soil nutrients and water, thus, leading to increased flowering and nut production.

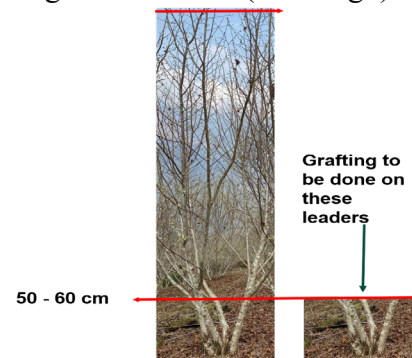
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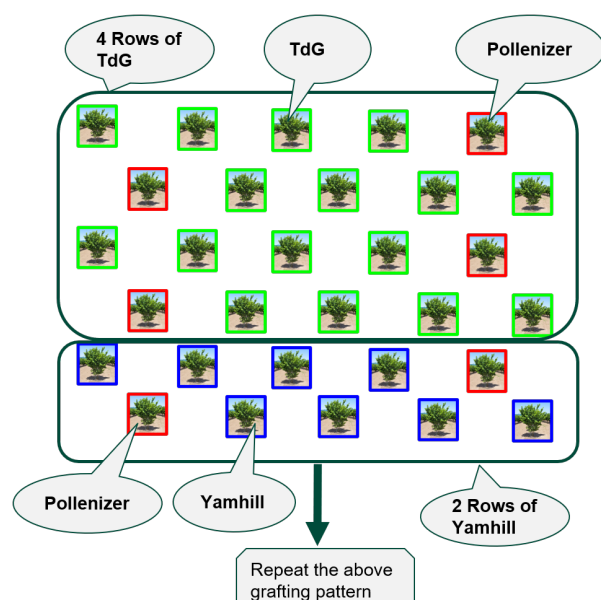


III. Pruning

After thinning, the trees will be pruned to at least 50-60 cm from the ground surface (knee high)



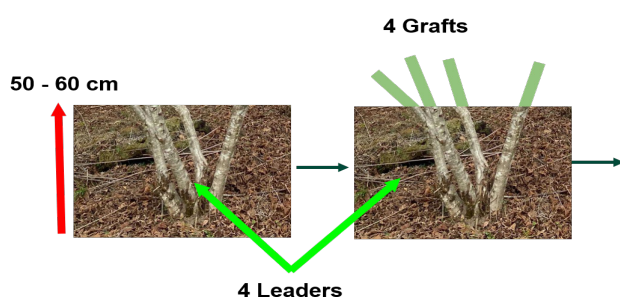
IV. Grafting



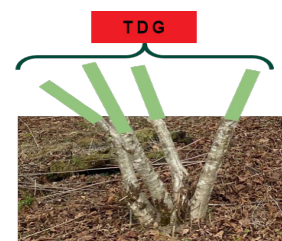
- In each Block, 4 Rows of trees will be grafted with Tonda Di Giffoni (main production variety with low dormancy requirement).
- This will be followed by 2 Rows of Yamhill, which is the second production variety with less dormancy requirement.
- A good mix of compatible pollenizers will be grafted on every 5th tree of the row.
- This grafting pattern will be repeated for the entire Block.

Grafting on Leaders

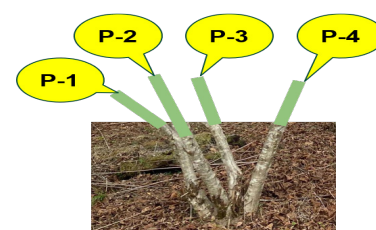
Each Tree has 3-4 leaders.



Grafting of Production and Pollenizers



Grafting of production variety



Grafting of different Pollenizer on each leader

2. ORCHARD OPTIMISATION IN HIGH ALTITUDES (>2,400m)

- The orchard optimization will be done in higher elevation orchards above 2400 masl
- A total of 250 ac orchards will be optimized in 2022

Cont...on Pg 4



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- Above 2,400m the planted production varieties do receive enough chill hours and exhibit normal flowering. So unlike orchard conversion, only pollenizers will be either grafted or planted for the orchard optimization program.
- Concerned farmers would be involved in orchard thinning, grafting, and planting activities.
- The system-generated orchard maps will be handed out to the field staff to serve as a reference
- A few pollenizer varieties will be added on top of the 2019 to 2021 pollenizer grafts to increase the number of pollenizers in the orchard. No blocking of rows will be done like in orchard conversion.
- The pollenizers will be either grafted or planted on every 5th tree of the row and the variety will be a mix of varieties (i.e. Jefferson, Jemtegaard #5, Hall's Giant, Theta). The pollenizer varieties are selected based on the pollen shed timing and compatibility with existing plantings.
- For grafting, the same teams from orchard conversion will be engaged in these areas.
- The orchard thinning and

grafting of pollenizers will start from 2nd Week of April 2022.

- The plantation of pollenizers will be started from May 2022
- A final spacing of 4x4 m shall be maintained to avoid overcrowding of trees.

To ensure the success of the above two programs we will focus on Post-Grafting Care.

Proper Post-grafting care can not only increase the grafting success rate but also reduce wastage of time and resources. Following are some of the post-grafting measures that will be taken up:

i. Fencing - Orchard fencing (e.g. electric fencing & agronet fencing) and individual tree fencing using bamboos and tree branches

ii. Providing support to the grafts

This is necessary when the grafts have vigorous growth and are not able to withstand the strong wind.

iii. Moderate pinching

Moderate pinching below the grafting union is required to enable the grafts to grow better. However, few growths need to be retained to enable photosynthesis.

iv. Proper orchard management - irrigation, fertilization & orchard clearing

Timely irrigation, fertilization, and orchard clearing are important for the overall growth, flowering, and nutting.



v. Timely removal of grafting tape

Grafting tape should be removed, after the grafting union becomes strong enough, to avoid constriction. We will circulate technical videos on Post-Grafting care to growers via WeChat and Field Teams



Finally we have Grower Economic Participation (GEP)

Mountain Hazelnuts is:

- Increasing the purchase price, paid to growers per kilogram of hazelnuts, three times between 2022 and 2026.
- Initiating a profit-sharing pool for qualifying growers, providing the opportunity for significant additional long-term income to growers.



Leisure

Remarkable characteristics of chili

Chili growers should remember some remarkable characteristics of chili before starting the cultivation.

1. Chili seeds require high temperature for the germination. The best is between 25-30 ° C. Mulching (plastic sheet/biochar) is very useful and effective technique for warming up soil of a seed bed.
2. chili plant likes high temperature condition. The best temperature range is 20-32 ° C.
3. The growth becomes sluggish below 16 ° C
4. The plant continually produce fruits. So, frequent top dressing is recommended (every month after the first harvest)
5. Irrigation is important, but do not flood the field.
6. Do not plant continuously on the same field to prevent "crop injury". The details are on the back side.

JOKES



A farmer and his wife worked with his son and daughter-in law to develop a business plan that would allow the couple to move back to the family farm. The young couple developed an agritourism business with U-pick fruits and vegetables for the summer, a corn maze in the fall, and a country store for year round income. After more than a year of work and planning the time came for the grand opening of the "Farm Fresh Country Store."

To celebrate this occasion, the farmer's wife ordered a spray of flowers from the local florist. The florist asked, "Do you want a banner added to the spray to mark the occasion?" The wife replied, "Yes something suitable for a business opening."

Two days later, just before the official grand opening the flowers arrived with a banner that read, In Loving Memory. The farmer's wife was very angry and immediately called the florist to complain.

After she had told the florist of the obvious mistake and how angry she was, the florist replied, "Mam, I'm really sorry about the mistake." After apologizing multiple times about the mistake, the florist began to giggle, and then finally busted out laughing. The wife said, "I don't see how this is funny, why are you laughing?" The florist replied, "It just hit me that somewhere there is a funeral taking place today with flowers that say, Good Luck with Your New Venture!"

Did you know?

To get the same amount of calcium provided by one 8-ounce glass of milk, you would have to eat 4.5 servings of broccoli, 16 servings of spinach or 5.8 servings of whole wheat bread.

Please submit your articles for RNR-Newsletter at

communication@moaf.gov.bt



The Ministry's week

JICA hands over 400 farm machinery worth Nu.300 M to Ministry



The government of Japan handed over farm machines worth approximately Nu. 300 M to the Ministry of Agriculture and Forests. A total of 400 grant aid machines were handed over by the Chief Representative, Mr. Watanabe Kozo, JICA Bhutan office to the Ministry at Agriculture Machinery Centre. The grant machines include 200 power tillers, 150 mini tillers, 30 tractors and 20 mini combine

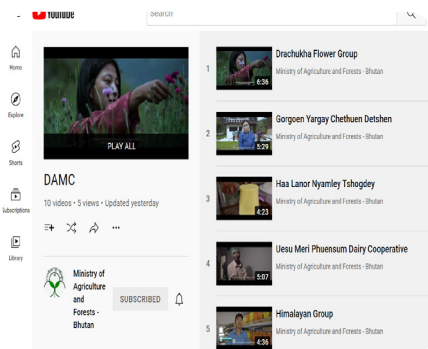
harvesters, their implements, repair tools, washing equipment and spare parts. Mr. Shingo Miyamoto, the Minister, Embassy of Japan, Delhi attended the event through a video conference.

The Hon'ble Sanam Lyonpo on behalf of the Government of Bhutan and Lyonchhen thank the Government of Japan and the people of Japan for the grant aid machines.

DAMC awareness videos on farmer groups and cooperatives

The Department of Agricultural Marketing and Cooperatives has developed various videos to create awareness on the successful activities of farmer groups and cooperatives including their value-added products.

View the list of videos online



on the Ministry's YouTube channel at https://www.youtube.com/?list=PLphfrv8JortoTlxav2t_CElMf7fQJPLI

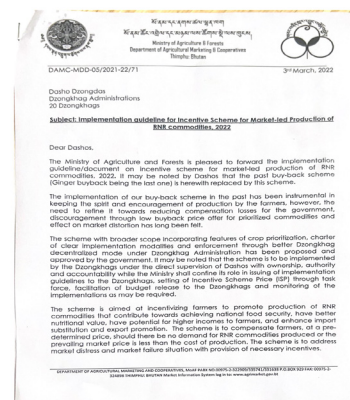
Please subscribe to <https://www.youtube.com/c/MoafGovBt>, the Ministry's YouTube channel for more livelihood-related videos.

Incentive Scheme for Market-led Production of RNR commodities

The Ministry of Agriculture and Forests announced that the Buy-Back Scheme of the Ministry was replaced with the Incentive Scheme for Market-led Production. The Scheme with broader scope incorporating features of crop prioritizations, charter of clear implementation modalities and enforcement through better Dzongkhag decentralized mode under

Dzongkhag Administration which was proposed and approved by the government.

The scheme is aimed at incentivizing farmers to promote production of RNR commodities that contribute towards achieving national food security, have better nutritional value, have potential for higher incomes to farmers, and enhance import substitution and export promotion.



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