Embedding Sustainable Pollination Management into Nepalese Agricultural Systems

THE STORIES OF SUCCESS

HERD International

BISHNU KANYA UPADHYAY: SPREADING INSPIRATION IN FARMING COMMUNITY

Bishnukanya Upadhyay, a 54-year-old lead farmer from Simkhada, Chandannath Municipality-3, Jumla, has become an inspiring figure in the farmer's community. Despite limited education (up to class 4) and a small landholding of 2 to 3 halls (1018 square meters), she brings the story of resilience, adaptation and success by adopting new farming techniques learned from the farmer field school under the Darwin Initiative Project.

Bishnukanya sheds light on her journey as a participant in the Farmer Field School, which focuses on pollination management and agroecological farming techniques. It became an exciting experience for her to learn these new sustainable farming skills.

Bishnukanya incorporated new farming techniques in her field and shared her valuable experiences and learning. She utilized polythene bags for watering apple trees, experimented with bio-pesticides made from cow urine, chilli, plum leaves, and walnut leaves, and adopted Prinsepia utilis (dhatelo) as fencing for her garden, benefiting honeybees and other pollinator insects. She said that the shift to thin seeding and proper care of Jumli beans, the use of wild flowering plants for fencing and pollination, and planting multiple crops have led to better production and reduced weed growth. Application of manure to apple plants and personal involvement in pruning resulted in improved apple quality, larger size, and appealing colors. This has increased her confidence to gain an increasing income.

She felt that shifting from a traditional way to a new agricultural practice took time to demonstrate and convince other family members. For instance, her husband had different views earlier, especially regarding the pollination of pumpkins and the broadcasting of legumes. However, she was able to demonstrate that the new techniques were effective than the traditional methods , showcasing the benefits of new techniques.

Bishnukanya said, “We used to cut dhutalo, but now we use it as fencing material. We used to plant only one crop in the field, but this year we planted two crops and reaped benefits from both. As a result, there is less space for weeds. Moreover, we did not use to apply manure to apple plants, but now we do so. This year, I pruned the apple trees myself, and the results have been good.”

Reflecting on the benefits of the Farmer Field School, she expressed a willingness to share her knowledge with other farmers in her community.

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RAMVA UPADHYAY: TRANSLATING SKILLS TO PRACTICE

Ramva Upadhyay, 50, lives in the remote village of Simkhada, nestled in the heart of Jumla. She is one of the participants of the Farmer Field School under the Darwin Initiative Project. With primary education, she has been cultivating land divided between mountain and plain areas. Farming has been her lifelong occupation, and the introduction of apple orchards added a new avenues to her agricultural practices.

Attending the Farmer Field School sessions on pollination management and agroecological farming techniques became a turning point for Ramva. Particularly the knowledge and skills on farmyard manure management and application, crop pruning techniques, and making green manure were very useful for her.

Previously Ramva was uncertain about the impact of male and female flowers on pumpkins, but now has learned the importance of pollination. She found that the male flower pollen was crucial for pollination, leading to increased pumpkin yield. For apples, she prepared the Bordeaux mixture herself and adopted the ring method for manure application, resulting in increased apple production.

She said, “I used to think that some flowers of the pumpkin are sterile, but we now know that those flowers are male flowers and that the male flower pollen is essential for pollination. Initially, I was worried about damaging the pumpkin when I went around for hand pollination, but after applying the male pollen to three female flowers, I was surprised by the results.”
She shared that thinning apples and timely pruning significantly improved apple quality, contributing to a sufficient income for her family.

She also planted dhatelo around the field, which acts as fencing and attracts bees and other insects that aid in pollination.

She said, “Due to the decrease in legume production, we used to sow the seeds thickly. However, this year we sowed them thinly to see what would happen, following other management techniques learnt. After the germination, growth, and development of the legume crop, it turned out well. Therefore, I plan to follow the same method next year for legumes.”

She has been responding to other farmers’ concerns who were not able to participate in the Farmer Field School sharing the knowledge and skills she gained.

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AMAR BAHADUR BISTA: ASPIRING TO IMPROVE PRODUCTION

In the beautiful hills of Urthu, Patarasi Rural Municipality, Jumla, Amar Bahadur Bista, a 43-year-old farmer, stands as a source of inspiration for the community. Talking to Amaraj Bohora, the Agriculture technician of HERD International, , Amar Bahadur shared about his farming practices and recent improvements he was making in crop management and production.

Amar Bahadur, having completed up to grade five in education, found his true calling in the fields. Over the past 23 years, he has dedicated himself to agriculture, cultivating approximately 20 halls (6783 square meters) of land. His village, Urthu, is a major apple production area in the Jumla district. Recently he has learned about the adoption of sustainable- agroecological practices from Farmers Field School. With around 400 apple trees on his land, he emphasizes the importance of proper pollination management, specifically mentioning a technique of plantation of golden delicious apple variety in red delicious apple orchard to enhance better pollination and apple production.

He said, “After attending the sessions, we learned that planting and cross-pollinating the golden delicious variety with the red delicious plant and branches results in a higher yield than before.”

Now he understands the difference between male and female pumpkin flowers and pollination more closely including the significance of cross-pollination in apple orchards.

He mentioned, “We have gained new knowledge and skills, such as understanding the difference between male and female pumpkin flowers and how to pollinate them. This knowledge will help us increase our pumpkin production.”

He further shared that the application of learned techniques such as correct planting distances and timely pruning, has led to enhanced crop management. He acknowledges that the changes are vital for increasing production and meeting market demands. However, challenges emerge, particularly in managing pests like woolly aphids in the vast apple orchards. He viewed that the organic nature of agriculture in Jumla and government restrictions on insecticide use pose a challenge in increasing production. He also notes the shift from chemical fertilizers to organic manure benefits crop quality and also positively influences the health of consumers.

Amar Bahadur also reflected on the importance of sharing knowledge within the farming community. He emphasizes the need for collaboration, suggesting that farmers want to stay connected to the Farmer Field School facilitators through modern means such as the internet and phones, seeking advice on challenges encountered during the farming season later.

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BHAKTA BAHADUR BUDHA: EXPANDING VARIETIES OF CROPS AND OFF-SEASON VEGETABLE

In the village of Ghodasain, in Patarasi Rural Municipality of Jumla, Bhakta Bahadur Budha, 52, is recognized as an established farmer in the community. Bhakta, having cultivated 5 halls (1696 square meters) of land for 15 to 20 years is an experienced farmer in the region. He has 70 apple trees and 20 walnut trees.

The Farmer Field School captured Bhakta's attention as he wanted to enhance his farming practices. He wanted to explore off-season vegetable cultivation for increased income. His participation in the Farmer Field School sessions helped him to gain further knowledge on pollination, mulching, and spraying bio-pesticide.

Now he thinks that these techniques were helpful in maximizing apple growth. He said, “If we plant apples, potatoes, and legumes it makes our livelihood easier. I also started off-season vegetable farming during the off-season. I planted the leafy vegetable in a plastic tunnel house which gave good benefits.”

He highlights the threat of woolly aphids and pests damaging the roots of apple trees. He describes the thorough post-harvest sprayings by bio-pesticides are required to control pests effectively, pointing out the practical challenges farmers encounter in implementing their newfound knowledge.

Bhakta has experimented with crop spacing, crop rotation and intercropping, along with the emphasis on proper pruning and mulching of apple trees has not only improved crop quality but also impacted apple and walnut production positively. He has been sharing knowledge with fellow farmers as he takes pride in transferring skills on pruning, and mulching techniques to others, contributing to the collective learning of the community.

He highlighted the challenges faced in an organic district like Jumla, where chemicals are restricted, posing obstacles to pest control. He also underlines the significance of irrigation, which is essential for bountiful harvests, but the lack of the proper infrastructure is making the situation more vulnerable.

"The Nepal government declared that Jumla is an organic district, so we cannot spray any chemicals like pesticide, herbicide, or insecticide on our farm, and there are no better organic alternatives, now how to manage that woolly aphid in apple trees? There is no irrigation, and the land is dry resulting in less germination and production," he said seeking support for irrigation infrastructure and expressing the desire for advanced training.

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