

## **We are now carefree that our child eats raw vegetables, CSV, Kavre**

It would sound like a fairy tale when someone in village tells about use of bio-pesticides as an alternative to chemical pesticides in vegetable cultivation in Kalchhe village located in Patleket ward no. 8 in Kavre district. About twenty months back farmers in Kalchhe had to apply volumes of chemical pesticides in their farms even if it was suffocating for them while working there. But the lead farmers like Bimala Bajgain explains they have largely reduced the use of chemical pesticides and adopted the practice of bio-pesticides that is prepared in their own households by themselves.

Initially demonstrations were organized from one of the projects of ICIMOD aiming to build affordable and replicable adaptation practices named Climate Smart Village that was implemented by CEAPRED in the village. In first season the results were encouraging, besides the increased production of vegetables even without use of chemical pesticides, farmers found the new practice of using Jholmal had many other benefits. It was soon adopted by farmers and in no time every household had started to prepare and use the Jholmal.

### **a. Jholmal as an alternative to hazardous pesticide**

*“We used to go in agro-vets to ask for so called medicine (pesticide) whenever we had pest problems but now we apply Jholmal to get rid of the pests because we have plenty of Jholmal prepared ourselves to spray”*

Ms. Nani maiya Dhungana explains how they are slowly changing their practices towards non-chemical agriculture. She has prepared Jholmal in her house. She collects urine in a tank which fills up every day. The urine she uses in crops and bio-gas also.

Jholmal is a bio-fertilizer and bio-pesticide prepared from the mixtures of farm yard manure, animal urine, plant leaves having repellent or killing properties for insects and jeevatu<sup>1</sup>. There are three different types of Jholmal with various compositions and use in plants. Jholmal-1 prepared with farm yard manure, animal urine, water and Jeevatu is used as liquid manure and applied in plant basal parts. Jholmal-2 prepared with animal urine, water and Jeevatu is used as bio-pesticides and sprayed in plant parts to repel/kill insects pests. While Jholmal-3 is prepared with various plants leaves that have repellent or killing properties to insects, water and Jeevatu. These prepared materials are diluted in three fold of water before using in plants.

Jholmal is prepared with application of urine that have antibacterial, antioxidant, antihelminthic, antifungal properties. It also has various botanical herbs and many literatures have confirmed botanical pesticides can be effective in controlling insect pests.

### **b. Jholmal grows safer food**

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<sup>1</sup> Jeevatu is a mix of beneficial microbes found in nature, which plays a part in plant nutrition and protection. This solution is non-poisonous and harmless to eco-systems. The key ingredients of Jeevatu are: Lactic acid bacteria, Azotobacter, PSB, KSB, Trichoderma, photosynthetic bacteria and Yeast.

*“We always feared that our child may go in cucumber field while they come back from schools and pick up the raw cucumber and eat. The cucumber we used to grow contained higher amount of pesticides. But, now we started application of Jholmal in our vegetable farming. We are now carefree that our child eats raw vegetables.”*

Bimala Bajgain, a pioneer in Jholmal user, shares her feelings while she meets with visitors who come to see the Jholmal use in her village. Farmers in the village have started growing safer food with the use of Jholmal. They grow all seasonal vegetables and also some off-season vegetables using Jholmal.

Kamala Timalsina had grown off-season pumpkin (Zuchhini) which is one of the off-season vegetables during Feb-March. Generally, off-season vegetables are grown in application with lots of pesticides but Ms. Timalsina produced the crops without using any pesticides. She hanged a pheromone trap to control fruit fly in her plot and just sprayed Jholmal for other few pests. This is one of the crops having high demand in market.

Mitthu Timalsina had grown bitter gourd in her farm with the use of Jholmal. She is very happy to work with these bio-pesticides and feels that it would make her health better. She has weaker health and had been operated for tumor in her ovary. Since, then she had been getting treatment with doctor. When she came back in village, she heard about the Jholmal that enables farmers in replacing chemical pesticides. Together with her husband she cultivates vegetables with these homemade bio-pesticides.

### **c. Jholmal saves farm expenditure**

*“Normally we spend about NRs. 25000 for buying chemical fertilizers and pesticides annually. But with the use of Jholmal we save almost 50% of farm expenditure. This has helped to save our money in buying external inputs and use local inputs for farming.”*

Ms. Sarita Regmi explains her experience of saving farm expenditure by use of Jholmal in her vegetable and potato cultivation. She has improved her cowshed to collect urine in a tank. The urine is then utilized in preparing Jholmal.

Since Jholmal contains all essential micro and macro nutrient required, plants grow healthier even with very few external input of chemical fertilizer. The urine which is collected in tanks is also used in bio-gas and the slurry obtained is used in growing crops. Now, there is higher tendency of using local inputs. Farmers in village rarely buy pesticide. They do so only when there is severe attack. But, they are also conscious on to avoid high toxic ie. Red labelled pesticides. The expenditure in chemical pesticides and fertilizers has gradually been decreasing.