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Success Story on Organic Cultivation of Potato Using Integrated Management Practices

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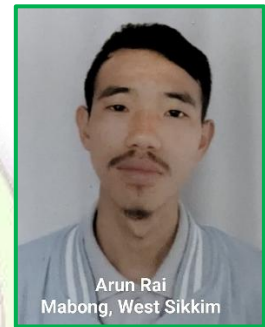
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Farmer Name: Mr. Arun Rai

Village-Mabong, **Tehsil-**Soreng, **District-**West Sikkim, **State** Sikkim

Introduction

Arun Rai lives in village Mabong, West Sikkim, Sikkim. During the execution of the DBT funded project, Mr Rai actively participated in all field demonstration, trainings and awareness programs conducted in his Village Mabong, West Sikkim by TRA-NBRRDC, Nagrakata, CAU-CPGSAS, Central Agricultural University (Imphal), Umiam, Meghalaya, and ICAR-NBAIR, Bangalore. He is one of the most active farmers of Mabong. During 2021-2023, he grown potato adopting organic practices recommended by TRA, NBRRDC, Nagrakata, CAU-CPGSAS, Central Agricultural University (Imphal), Umiam, Meghalaya, and ICAR-NBAIR, Bangalore. Besides potato, he also grows tomato, maize, turmeric, pulses, and flowers. Most of the agriculture produce is consumed by his family, and left he sells in the local market of Jorethang, West Sikkim. However, the major problem which hinder potato production is early blight, late blight, and red ant, few sucking pests and leaf eating caterpillars.



Training

Since 2022, on behalf of CAU-CPGSAS, CAU, (Imphal), Umiam, Meghalaya, TRA, NBRRDC, Nagrakata, and ICAR-NBAIR, Bangalore, under the DBT funded project, Mr Rai has attended several trainings, method demonstration, skill development programme on organic integrated pest management practices, mass production of biopesticides and macrobials and use of biopesticides such as potato tuber treatment and soil application of *Trichoderma* enrich compost for organic cultivation. Various inputs for potato cultivation such as potato tubers, biopesticides, vermicompost, sticky traps, biofertilizers, macrobials etc. were supplied to him under project demonstration programme. After getting training programs, he adopted all demonstration techniques for potato cultivation and from time to time at various crop stage he executed all the practices recommended by CAU-CPGSAS, CAU (Imphal), Umiam, Meghalaya, TRA-NBRRDC, Nagrakata, and ICAR-NBAIR, Bangalore in his potato fields which brought potential results both in terms of yield enhancement and disease and pest reduction. By adopting the organic based package of

practices, he could increase his income by utilizing the acquired knowledge and skills. He is an example of a successful farmer who has shown that agriculture can be transformed with the right investments and the right knowledge.

Achievement

By executing organic cultivation practices the incidence of diseases such as early blight and late blight, pests like red ant and whitefly populations reduced drastically. There was also improvement in germination of potato tubers up to 20-25% than his own practice. There was also increase in 26% (approx.) of his produce, as after adoption of organic packages of practices yield of potato potentially increased from 1493.3 kg/ha to 1880.6 kg/ha. Besides, population of beneficial microbes in the soil also increased after application of TRPATH01 enriched vermicompost, tuber treatment with Um Tricho, three foliar spray with Um Comb (a consortia bioformulation) at 21 days interval, use of sticky trap for pest monitoring, timely application of irrigation, frequent scouting ect. Through the adoption of organic practices, not only he secured his food security, but also enhanced his income by selling potato, with an extra earning of Rs. 35,000 to Rs. 40,000 per season/per ha area.

Importance for farmers

Mr. Rai inspired other local farmers to start organic cultivation in their fields. He became the source of inspiration for other smallholdings farmers involved in organic farming. He is always ready to provide them the help and guidance needed what he gained in the training programs.

Economic analysis

| Component | Before adoption of Organic practice of project | After adoption of Organic practice of project |
|-----------------------------------|--|---|
| No. of Sprays and tuber treatment | No treatment with 6 to 8 spray of homemade biopesticides per crop season | <ul style="list-style-type: none"> Tuber treatment followed by two sprays of <i>Trichoderma</i> (TRPATH01) biocides at 15 days intervals Yellow/blue sticky traps @ 4-5 traps/acre Pheromone trap @ 4 trap/acre Installation of Tricho-cards and field release of lacewing. |
| Farmer's profit margins | Average | High |
| Production level | Average | Increased by 10% (approx..) |
| Average net return | 1493.3 kg/ha | 1880.6 kg/ha |
| Pest damage level | Wilt, blight, and white fly | Nil |
| Cost Benefit Ratio | 1:1.4 | 1:4.5 |

Acknowledgement

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Field of Mr. Rai ready for showing of potato.



Family member of Mr. Rai harvesting potato.



Potato crop after one month of sowing installed with yellow sticky traps.

