

INDSAFARI – An Organic Pesticide for Tea

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Surapala's Vrikshayurveda and Chakrapani Mishras's Vishvavallabha recommend the use of *kunapa* (liquid manure) for nourishment of trees and plants (Sadhale, 1996; 2004). *Kunapa* is also recommended to control plant diseases and pest attacks. Fish is an ingredient of *kunapa*. Verse 121 in Surapala's Vrikshayurveda recommends the smoking of fat of *saphari*, a tiny shining fish, to a creeper so that it can bear abundant fruits and flowers.

After I was given an assignment to utilize the Vrikshayurveda methods for tea in Arunachal Pradesh, India in 2004, I developed a herbal *kunapa* and named it *Sasyagavya*. I started to produce 5000–10000 L of *Sasyagavya* everyday and apply it to the soil in the tea garden and improved the soil and plant health. The organic tea produced from this garden called Abali Tea Estate was found to be free from all types of pesticidal residues.

After improving the soil and plant health, the next problem was to provide plant protection materials for tea leaves. The major disease of tea here is blister blight, a fungal disease which occurs when the ambient temperature falls below 20°C. This was overcome by the regular use of *Cowper*, a fungicide that I developed by using cow dung

and cow urine. The *Dhanygavya* prepared by using cow dung, water, and paddy husk also provided the much-needed silica in the liquid form to the tea bushes. This also helped to prevent blister blight.

The severe pest of tea is the tea mosquito *Helopeltis theivora*, which is not yet controlled even by using chemicals. I was challenged to control this pest of tea, without using any chemical pesticide.

First, I tried to control *Helopeltis theivora* attack by spraying 2% solution of *Panchagavya* (a mixture of cow dung, cow urine, milk, curd, and ghee). But as the cost of preparation of *Panchagavya* became high, I used the local waste products.

I found small shining fish being collected by our laborers in the nearby water bodies. Many of my labor would absent from work to catch the fish. So I went to find what the laborers were doing. I found the *saphari* fish in nature nearby. So I decided to try

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this fish solution as a spray for tea mosquito attack on tea.

Next day, I assigned the job of catching fish to some expert laborers and collected about 50 kg of fish. I fermented this fish in cow urine for two weeks aerobically. Afterwards, it was stained. This solution, now named INDSAFARI, was used at 1% concentration in a section of tea bushes, which were severely infested by tea mosquito. The tea mosquito attack was still there in spite of the winter months of December–January. This spraying done on about 1.5 ha of tea was repeated every four days. The *Helopeltis* attack reduced considerably. There was no plant growth due to low temperature. But the bushes started to show signs of recovery. This trial was done in the last week of December 2004 and the tea bushes were subjected to deep “skiffing” in the last week of January 2005. Further spraying was not done. Even post-pruning operations could not be carried out due to continuous rains in February and March 2005.

The season for pest attack on tea bushes begins by February as soon as the sprouts regenerate. The usual pests are greenfly, looper, red spider, thrips, and *Helopeltis*. Chemical farming involves use of different

pesticides for different pests. No broad-spectrum organic pesticides have yet been developed in the tea industry. But I successfully used *Sasyagavya* or cow urine sprays to keep the tea garden free of pests in 2004 itself. Therefore, I had no difficulty in planning and using the organic pesticides prepared by me at the garden level itself. I had not yet finalized the organic pesticide for *Helopeltis* attack. I sprayed INDSAFARI at 1% concentration with a ten-day cycle. The entire garden was free from all types of pests and diseases. The INDSAFARI was found to be successful as a preventive and curative pesticide for *Helopeltis* attack in tea. I continued to use INDSAFARI as a preventive measure successfully. Usually, some pests attack the shade trees in tea gardens in the summer months of May and June. As a preventive method the “chemical farmers” paint the trunk of the shade trees with Bordeaux mixture or even lime solution. Though this is permitted for use in organic tea cultivation as per national standards for organic production as well as the EU regulations, I decided not to use this and to discover my own preparations with the help of Vrikshayurveda and conduct my own trials.

I did not even think about the pest attack on the shade trees. By mid-May 2005, the

I had not yet finalized the organic pesticide for Helopeltis attack. I sprayed INDSAFARI at 1% concentration with a ten-day cycle. The entire garden was free from all types of pests and diseases.

My host who was staying in the tea garden with me attempted to make a trial on his own without my intervention. He sprayed INDSAFARI at 1% on these loopers on the trees and the next day the looper population had diminished by 50%. Again, the same spray was done and by the third day there was no trace of a looper either on the ground or on the shade trees. After one week the shade trees sprouted well and now are growing well.

loopers attacked the shade trees heavily. In fact, the loopers had eaten away all the leaves of the shade trees in one particular section of the Estate and everyone was surprised at this phenomenon. My host who was staying in the tea garden with me attempted to make a trial on his own without my intervention. He sprayed INDSAFARI at 1% on these loopers on the trees and the next day the looper population had diminished

by 50%. Again, the same spray was done and by the third day there was no trace of a looper either on the ground or on the shade trees. After one week the shade trees sprouted well and now are growing well. The loopers have vanished completely. All these trials were made by the host himself without my involvement, either technically or administratively.

Thus, an efficient insecticide-cum-growth promoter is now found and field-tested successfully.

References

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