

REPLACING CHEMICALS WITH MICROORGANISMS

A longan grower making six-figure earning a year, Ratthana Jundam, Head of Moo 4 Village in Chiang Mai Province, spent 7 years learning about sufficiency economy before making a big decision to turn away from monocropping to integrated farming.

"I was skeptical at first whether integrated farming would be viable. Harvesting vegetable daily to make a few hundred baht a day sounded so little, yet so much work, compared to what I earned from selling longan for several hundred thousand baht a year," Ratthana says. But as a village head, she had to attend series of training on this subject. After a while, it started to make sense to her and she decided to give it a try. It was hard at first, but the benefit is worthwhile, especially the health benefit attributed to chemical-free farming.

Longan orchard is known for intensive use of chemicals and because of this, growers in Ratthana's village are faced with health problems. It took Ratthana two years to transform her 7-rai (1.12 ha) longan orchard to an integrated farm. She also turns her farm into a learning center for sufficiency economy for her community. The farm consists of an organic vegetable plot, chicken coops, a fish pond and an orchard with several types of fruit trees. Ratthana was determined to reduce chemical usage in her community and actively sought knowledge and technology to solve this problem.





“I was given an opportunity to attend a workshop to learn about the agricultural application of microorganisms at Maejo University,” Ratthana says. The lecturer at Maejo University has screened several types of microorganisms for a number of purposes. Microbes capable of breaking down organic matters are used for composting. Some microbes, called biocontrol agents, can be used for controlling plant pests and diseases. Some microbes can be used for eliminating foul odor.

She applies microorganisms obtained from Maejo University in her farm and experiences drastic improvement in her farm. Fruit trees and vegetables are free from diseases and insects, thanks to biocontrol agents that she uses in place of pesticide. She applies composting microbe on the ground of her fruit trees to help digest fallen leaves and fruits. Despite having two chicken coops on the property, there is no bad smell, because the coops are sprayed with odor-control microbes, instead of disinfectant. Her fish pond previously gave out foul odor, because

of dead fish problem. Ratthana applies odor-control microbes to the pond weekly. Not only does the foul odor go away, she no longer has dead fish problem.

After successful results, Ratthana introduced these useful microbes to growers in her community. She propagates microorganisms obtained from Maejo University and gives out to members of her village for free. At the learning center, three types of microbes – biocontrol agents, composting microbes and odor-control microbes – are placed in labeled 200-L containers for her villagers to help themselves.

Villagers were interested to try these microbes because Ratthana has demonstrated their performance on her farm. And they work on others’ farms too. With word of mouth, Ratthana’s microbes are now used by growers from nearby villages.

“Unlike microbe powder I received from other agency, these microbes are easy to use and very effective,” one villager shares his

experience using microbes obtained from the learning center.

Switching from chemicals to microorganisms may be troublesome in the beginning, but these farmers are keen to change as they recognize the benefit to their health and the ecosystem. In addition, production cost can be saved from eliminating chemical usage. Thirty farmers in Moo 4 Village are regular users of these microbes, and Ratthana

continues to make microbes available for free.

NSTDA provided research fund to Asst. Prof. Tapana Cheunbarn, Faculty of Science, Maejo University to investigate the microbial applications in agriculture and the environment. The research result has been transferred to the community.

