

Motivator Kondoran Good practice note for climate-resilient agriculture

Note 2 Natural Pest Control in Chili

Torajans take pride in their native Katokkon chilies which feature a distinctly spicy flavour, coupled with a rich, fruity taste. Cultivation of this source of local identity bears a great potential, but going the organic way poses many challenges. Hence, farmers in Tana Toraja need to refine their skills, as Pak Kristian elaborates below.

Climate Change is a real threat to us, even a matter of survival. With increasingly high attacks of pests and diseases, yields are declining. Our traditional weather rules aren't reliable anymore, making it more difficult to determine the planting season for rice and other crops. Therefore, we are required to try new practices in order to adapt better.

Story of change

“When we began with the cultivation of Katokkon chilies, we never would have thought it would be so prone to pests and diseases. We have many experiences with organic cultivation of other crops such as tomatoes, cabbage or onions. We tried several varieties, still all of our chili plants were affected by all kind of pests: white flies, aphids, fruit flies among others. We also tried out all of the recommendations which were supposed to bring about improvements. However, whatever we tried, nothing seemed to work. Neither the use of kitchen ashes as pesticides nor burning of surrounding plants had a significant effect on the outbreak of pests and diseases. Then we tried planting different kinds of barrier plants, such as maize and marigold. Unfortunately, the maize, which was supposed to trap the insects, didn't work, as it was planted too early. The marigold, which was supposed to repel insects with its odour, didn't grow at all. Frustrated as we were, we asked for external advice. UNHAS staff encouraged us to use Mojo for natural pesticides. They also suggested to use the ingredients in fresh condition, as it is their odour which matters. The odour from organic pesticides does not kill the pests but repels them instead. The results were encouraging. We also added papaya leaves to the original recipe to improve its effectiveness.

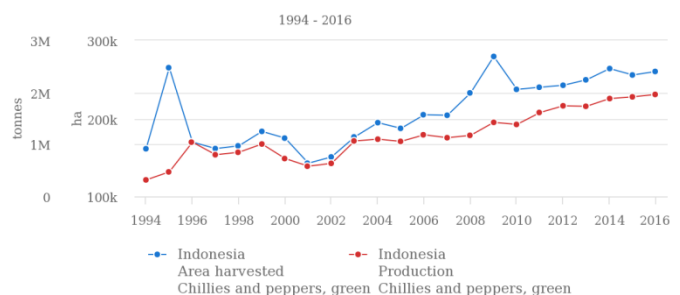
Pak Kristian, rice and chili farmer researcher, from village Buntu Datu, Tana Toraja, Sulawesi Selatan.



Dissemination of practice

Indonesia is the fourth largest chili producer in the world after China, Mexico and Turkey. The most important chili growing islands are Java and Sumatra. Central Java has the largest share of chili acreage. However, the annual productivity of chili is unstable, due to weather extremes and epidemics.

There are attempts in various regions to grow chili in organic systems but it is not widespread. Related to vegetable area planted chili is the most important crop with 20% of the total land under vegetables.



Source: FAOSTAT (Oct 16, 2018)

Benefits

Chili consumers: An Indonesian meal without chili is not complete. As fresh red chilies prices are volatile, floating around 20,000 to 80,000 Rp/kg and increasing, chili has gradually become a luxury good. Hot chili is a good source of vitamin C, vitamin E, vitamin K, carotenoids and the complete B-complex. They help in boosting immune power and aid in fighting off colds. Capsaicin acts as an anti-irritant, which is beneficial to people suffering from ulcers by reducing acidity in the digestive tract. Chilies also promote a healthy heart by lowering the cholesterol.

Chili Producers: There is a growing demand for chilli and most of the chili grown is consumed in the country. To ensure a continuous supply of chili peppers, the Ministry of Agriculture promoted chilli production in home gardens.

Environment: The use of synthetic pesticides is on the rise globally and in Indonesia. In organic production, these pesticides are replaced by cultural practices and natural pest control. Essential plant oils used in biopesticides have demonstrated optimal protection.

Challenges

Chili is subjected to the attack of many pests and diseases. Natural pest control in chili farming needs a lot of attention. Besides natural pest control, cultural practices and access to quality seed are essential. Water stress and lack of nutrients can weaken the plant, so optimum water and soil fertility management is a prerequisite for successful production.



Detailed Description of Natural Pest Control in Chili

Aphids, whitefly and fruit flies are amongst the most common and destructive pests. They are now largely resistant to pesticides and are extremely hard to eradicate. They breed in large numbers, feed on plant sap and introduce viral diseases. Keep a careful check on your plants regularly and remove any unwanted intruders quickly. To prevent it, plant **barrier plants** and install **yellow traps**. Use plastic containers placed upside down on sticks are painted with grease or used motor oil. These should be placed in and around the field. Clean and re-oil when yellow traps are covered with flies. The Mojo pesticide can be applied twice a week as repellent in order to prevent invasion of these insects.



Motivator Kondoran recommends:

Mojo pesticide recipe

Ingredients:	How to make it:
mojo fruit 3 pieces galangal 5 kg 5 liters of rice washing water	1. finely ground galangal 2. mojo fruit is freshly squeezed until it is smooth 3. All ingredients are mixed and fermented for 1 week 4. After 1 week, the liquid is filtered and ready to be applied as an organic pesticide

Application method:

Before applying the solution diluted with water, namely: 1 liter of liquid pesticide mixed with 3 liters of water.

More information:

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