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A ray of farming hope

Devinder Sharma, Sep 11, 2012 :

Farmers in Haryana villages have maintained insect equilibrium by pitting beneficial insects against the harmful.

In the great Indian epic, Mahabharata, there is a telling story of the valiant Abhimanyu who died fighting while trying to pierce through a Chakravyuah (seven rings).

Mahabharata tells us that Abhimanyu had learnt the art of smashing through the seven layers of the human chain of the Chakravyuah. In lot many ways, I find the Indian farmer is also like Abhimanyu. He has been forced to get into the Chakravyuah but does not know how to emerge out of it. Like Abhimanyu, he too is fighting it out valiantly but eventually whether he will meet Abhimanyu's fate or come out unscathed remains to be seen.

In a country where 2,90,740 farmers have committed suicide between 1995 and 2011, I am always reminded of Abhimanyu. Pushed deeper and deeper into a Chakravyuah by a profiteering agro-chemical industry and an insensitive scientific community, Indian farmer faces a Hobson's choice. He knows that sooner or later

Chakravyuah by a profiteering agro-chemical industry and an insensitive scientific community, Indian farmer faces a Hobson's choice. He knows that sooner or later he too will become a victim of the serial death-dance being enacted on the farm or will be forced to quit agriculture.

Intensive farming systems in the name of increasing crop productivity has devastated soil fertility, contaminated the environment, mined the groundwater and turned agriculture into a losing proposition. Farmer is left to die.

Much of the destruction that we see on the farm is the result of unwanted and exorbitantly expensive chemical inputs. Take the case of chemical pesticides. It was in late 1970s that David Pimental of the Cornell University had said in his landmark paper that 99.9 per cent of chemical pesticides go into environment and only 0.01 per cent of the pesticides sprayed reach the target pest. Despite this warning, agricultural scientists continued to advocate the use of chemical pesticides. While the industry gained immensely, farmers as well as the gullible consumers suffered. This makes me wonder whether there is a way out. Can the Indian farmer ever emerge out of this?

In search of viable alternatives, I visited Nidana and Lalit Khera, two tiny and nondescript villages in Jind ditrict of Haryana. Farmers and village women in these villages have gone a step ahead. Not only do they not spray chemical pesticides on cotton, but they don't even use bio-pesticides. They have allowed the insect equilibrium to prevail to such an extent that the harmful insects are taken care of by the beneficial insects.

Enterprising farmers

The amazing story of Nidana has to be told. For some illiterate and semi-literate women and some enterprising farmers around Nidana village, mealy bug poses no threat. Mealy bug is a sucking pest and is known to be devouring crops at will. The mere presence of the insect in the cotton fields sends a chill among the farmers. Meena Malik is a 23-year-old graduate, who along with some 30 women of the nearby villages, partakes in a 'mahila keet pathshala' (women insect school) every week, told me: "We have been able to identify 109 non-vegetarian insects (beneficial) and 43 vegetarian (harmful) insects in our cotton fields."

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An elderly lady Santosh Malik adds: “Mealy bugs are controlled by 16 kinds of beetles, 6 kinds of bugs, 7 kinds of flies and insects like praying mantis and chrysopa.” At her age, I was surprised when she brought some beetles and bugs for me to see. Explaining to me how the different insects adopt different mechanisms to kill, she told me how three insects, called angira, fangira and jangira, would lay eggs in the stomach of the mealy bug. One egg is laid per mealy bug. This eats up the stomach of the mealy bug which turns red in colour and eventually dies.

Among the bugs that feed on mealy bug are kala baniya, lal baniya and matku baniya. The bugs, very small in size, literally are blood suckers. The adults as well as the larvae of lady beetle feed on the crawlers (children) of the mealy bug on priority basis. In its life cycle of 30-35 days, each mealy bug lays on an average 400 eggs, which becomes a rich food source for the lady beetles and their off springs.

The most dreaded pest on cotton is the American bollworm, which is polyphagus in nature surviving on some 90 plant species. Dr Surinder Dalal, an agricultural development officer of the Haryana Agriculture Department, who is considered to be the moving spirit behind this remarkable initiative in preserving insect equilibrium so as to maintain ecological balance, says: “The moths of the bollworm lay on an average anything between 700 to 3,000 eggs on different plant leaves. Chips in Kuldeep Singh Dhanda, pradhan of village Brah Kalan Bahra in Jind district, “The beetles eat the eggs, and 9 different kinds of bugs -- two of which are locally called katil burga, didar burga -- suck the eggs, and the moths are eaten by robber fly and dragon fly.”

The Nidana experiment began in 2007. Certainly it wasn’t easy to convince cotton farmers that they can do without chemical and biological pesticides. But with each passing year, more and more farmers are now becoming aware of the ecological pathway. To me, the Nidana experiment is the way out of Chakravyuah.

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