



Vol.9

No.4

July - 2001

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Intercrop and Trapcrop for Pest Control

Intercropping : In central and Southern India, intercropping of cotton with blackgram, green gram and cowpea is reported to divert the population of sucking pests and American bollworm from cotton. Intercrop of cowpeas in cotton helped in the colonization of coccinellids and also enhanced the parasitism of spotted boll worm. Inter cropping of groundnut with pearl millet reduced the incidence of Thrips, Jassid and leafminer. Tomato intercropped with cabbage has been reported to inhibit or reduce egg laying by diamond backmoth. In chilli crop, coriander

can be grown as intercrop. This reduces the incidence of sucking pests such as aphids, whitefly and thrips. Farmers also harvest coriander seeds and use for their own consumption.

Trapcropping : Planting small areas of a crop or other plants on the borders or even in the main crop may serve as a trap crop for some insect pests. Raising a crop of castor around chillies and tomatoes in citrus orchards controls fruit borer and sucking moths. Castor around the cotton field

attracts boll worms and sucking pests and protects the main crop.



Castor grown as a trapcrop in cotton

In Andrapradesh, castor is grown as a trap crop around tobacco field to control *Spodoptera litura*, army worm affecting the crop. In cotton field, sorghum, kambu are grown in 4 rows in the corners of the field. This reduces the incidence of white fly and aphids. In Tomato field, Marigold is planted around the field in 2 rows. This reduces the incidence of borer affecting tomato crop.

The Story of the BT Cotton

Permission to commercialise Bt Cotton withheld

The Genetic Engineering Approval Committee (GEAC) today withheld permission for the commercialisation of the genetically modified Bt Cotton seed propagated by the Maharashtra-based Mahyco seed company and backed by the U.S. multinational seed agency, Monsanto. The committee decided on further verification of data provided by Mahyco and asked the seed company to conduct trials and tests for another year as last year's sowing was late.

Trials by the private seed company have been conducted more covertly than overtly in parts of Karnataka, Andhra Pradesh, Tamil Nadu and Maharashtra in the last three seasons. However, sowing was late in 1999 and 2000 which impacts the results of tests.

Although no official information was forthcoming from the Ministry of Environment which heads the committee, it is understood that the decision was taken at the behest of the representatives of the Ministry of Agriculture. The Ministry which is directly concerned with the production and productivity of cotton, was invited to the meeting of the committee for the first time as a special invitee. The Indian Council of Agriculture Research is, however, a member on the Committee.

Pressure had been building up on the Government from the pro-GM seed and the

anti-GM seed lobbies. Nearly 400 concerned citizens and NGOs had sent letters of protest at the hasty decision making in the matter to the Prime Minister, Mr. A.B. Vajpayee, and the Ministries of Agriculture and Environment. Against this, Monsanto had mounted an impressive campaign about the need for transgenics.

Source : The Hindu, June 20, 2001

Re-run of BT cotton trials welcomed

Various organisations across the country have welcomed the decision of the Genetic Engineering Approval Committee (GEAC) to call for a repetition of trials on transgenic Bt cotton.

“With this decision, India remains a GMO-free country since Bt cotton would have been the first crop to be commercialised,” a joint statement by scientific, government and non-government organisations said.

Given the potential dangers of GM crops to the socio-ecological security of the country, the committee had exercised foresight, said the organisations, all of which were involved in the ongoing process of formulating the national biodiversity strategy action plan.

“The issue is not purely a scientific one, there are social, economic and political dimensions, all of which need to be debated and considered before any conclusion is reached,” they said.

Source : The Hindu, June 23, 2001

What is Bt Cotton?

To create cotton with built-in protection against insects, genetic engineers spliced a Bt toxin gene into cotton. The new gene that enabled the transgenic cotton to produce insecticidal toxin throughout the plant was obtained from a soil bacterium, *Bacillus thuringiensis* (Bt). Monsanto put the Bt gene in cotton to protect against three pests : tobacco budworm, cotton bollworm and pink bollworm. The Bt cotton is not effective against a wide range of other pests, including the boll weevil and whitefly. Besides this various other environmental affects are not studied in detail.



News Line

Treaty on the dirty dozen

Officials from 90 countries recently signed a landmark UN treaty in Stockholm, designed to curb the use of some of the world's most dangerous and toxic chemicals. The so-called 'dirty dozen' chemical pollutants include pesticides and dioxins that are blamed for causing death and disease around the world. These are aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, mirex, toxaphene, polychlorinated biphenols (PCBs), hexachlorobenzene, dioxins and furans.

Now, 90 countries have signed a treaty designed to curb their use, the Stockholm Convention on Persistent Organic Pollutants or POPs. The treaty has been hailed by environmentalists as an important step toward making the world a safer and cleaner place.

The treaty controls the production, import, export, disposal and use of these toxic chemicals. It has established tough international controls on an initial cluster of 12 chemicals, of which most are subject to an immediate ban. The global POPs Convention was negotiated within the framework of the United Nations Environment Programme (UNEP), and finalised in December 2000 in Johannesburg, South Africa by delegates from 122 countries.

Persistent Organic Pollutants, frequently referred to by the acronym POPs, are a group of chemicals, most of which are synthetic, some of which are synthetic, some of which are naturally occurring. Most POPs of international concern are synthetic organochlorine compounds, that is, they contain carbon and chlorine.

Some of these chemicals are pesticides such as DDT, aldrin, mirex, toxaphene, heptachlor, and chlordane; some have primarily industrial application, such as the polychlorinated biphenyls (PCBs); and some, such as dioxins and furans, are the unintentional byproducts of industrial operations.

All POPs have several common characteristics. As the name implies, once introduced into the environment, either intentionally by industry, as an agrochemical, or unintentionally as a byproduct, they remain in the environment for years, sometimes decades. This stability is due to their very slow chemical and biological degradation. However, these chemicals also transfer into the vapour phase and so can be atmospherically transported to sites distant from the site of initial introduction.

Source : Business Line, 20th June 2001

Pesticides residue issue hits spices export

High prices coupled with a fall in quality of certain spices, mainly chillies, due to the presence of pesticides residue, seem to have adversely affected the export of Indian spices.

Speaking to *Business Line*, Mr. M.S.A. Kumar, Chairman, Indian Spices Exporters Forum, admitted that there was rejection of consignments of chilli by certain European Union (EU) countries on the ground that it contained pesticides residue. Australia, too, had begun rejecting consignments on these grounds, he said.

Source : Business Line, 7th June 2001

End of Innocence : DDT could cause early puberty

Children exposed to DDT (dichlorodiphenyl-trichloroethane) attain puberty at a much younger age, reveals a new study. The study shows that girls exposed to DDT develop breasts and start their menstruation cycle by the age of ten, both processes which generally start at the age of 12. The study carried out under the guidance of J P Bourguignon, researcher at the department of pediatrics, University of Liege, Belgium, found that most of the patients were immigrants (or children of immigrants) from the developing countries.)

Source : Down to Earth, July 15, 2001

EDUCATIONAL RESOURCES

Pests of Paddy - Posters Series



A set of three posters covering various pests of paddy and their control measures has just been brought out by our centre. Predators have also been included. These four colour posters are bilingual and are available in English, Hindi and English, Tamil.

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Toxic Trail Across Southeast Asia

With annual sales over US\$30 billion, the pesticide industry is big business - according to a recent BBC documentary the Toxic Trail. While the major manufacturers say they try to encourage responsible practices, an estimated 25 million cases of pesticide poisoning occur each year. Nearly all the victims are in developing countries. Toxic Trail, produced by the Television Trust for the Environment (TVE) for the BBC, set out to uncover the scale of the problem by following the flow of chemicals from their manufacturers in Thailand across the open border into Cambodia where they are posing a serious threat to human health and the environment.

Toxic Trail was broadcast in two parts on BBC World Earth Report, in April 2001. Earth Reports are produced by TVE. For copies of the documentaries (on compact disk), contact: ToxicTrail@attglobal.net

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