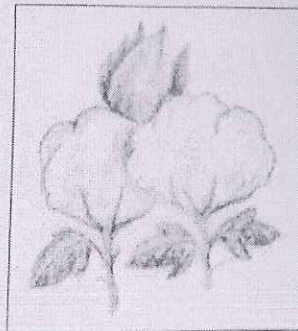


ORGANIC COTTON

An epilogue of Andhra tragedy



In a scenario where pest menace seems to have become an impossible problem, organic farming can prove to be the salvage.

The cultivation of cotton extends to a wide geographical area and is subjected to a wide range of farming system. Being an important cash crop, it becomes difficult for the farmers to suppress the urge of increasing cotton acreage. In the tumultuous rush to expand, technological errors are made and when this is combined with the metamorphic changes in the pest scenario of the country, cotton has become extremely vulnerable to economic losses—reaching 400 million rupees at current prices! The most plausible and effective manner by which the pest nuisance can be overcome is proper application of pesticides.

Pest attacks in cotton have become a rule rather than an exception. The frenzied farmers resort to indiscriminate use of pesticides so as to save their "white gold". In Andhra Pradesh, the problem was due to the pest attack in general and pesticides in particular. There have been various explanations and analysis about the Andhra tragedy but what actually happened was due to total ignorance of the farmers regarding the quality of pesticides, supplied to them.

Two major pests, *Spodoptera litura* and *Helicoverpa armigera* ravaged the standing crop thus mounting the farmers' debt. Unable to identify the culprits, (*Spodoptera litura* and *Helicoverpa armigera*) AP farmers resorted to all kinds of pesticides in quantities, that astounded the pesticides dealers.

Unfortunately, the farmers never realized that there was a complete resistance to the insecticides and the expenses peaked. The economic noose tightened and what followed was a cascade of suicides.

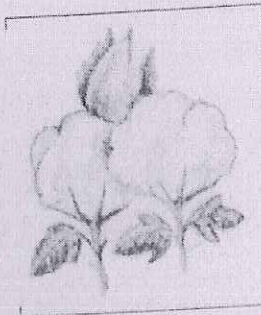
The pesticide lobby was very firm regarding its standpoint and when confronted with the question of spurious products, it commented that the farmers did not abide by the instructions and mixed the chemicals leading to the destruction of chemical structure of the formulation and rendering them ineffective. According to them, it was the illiterate farmers who were facing the damage while the progressive ones continued to have good yields. The concoctions produced by the farmers failed to take the lives of the pests, but succeeded in doing the same, as far as their lives were concerned.

Pesticides being a central dogma of controversy, not only regarding its use, but also being environmentally non-benign,



Organic cotton, though more prone to pest attack, may solve the recurring pest emergence and resistance

Integrated Pest Management (IPM) as a concept is fast emerging. The outlay for the IPM programme in the Eighth Five Year Plan was raised to Rs. 4.5 crores from Rs. 0.312 crores in the previous one. The government promised to phase out subsidy on pesticides and to extend the revenue to the IPM programme. This would encourage the promotion of bio-control agents, for sustainable crop growth. The IPM unit of ICAR claims to have a successful package for cotton, which includes measures to deal



with *Spodoptera litura*. In spite of these training and awareness, the

extension workers have failed to motivate the farmers towards IPM. Basically IPM is a location-specific and self-regenerating system and will be effective only when there is a mass consciousness. Lacking which, all the facilities and provisions have been null. This indicates some error in its implementation, needing a serious thought.

WHAT NEXT?

The paradigm of organic cultivation of cotton came into vogue around 1994-95. If practiced with conviction and sound preparation, it increases the yield while reducing the cost of cultivation. Vidarbha, in Maharashtra led the way in cultivation of organic cotton. Farmers, who have continued with traditional farming where chemicals have not yet made inroads or those who have discarded the use of chemicals were initially encouraged to take up organic farming of cotton.

A whole spectrum of biofertilisers, vermicompost, neem cake, powdered minerals and rock phosphate are used as nutrient source in producing organic cotton. Vermicompost contains several beneficial microflora and growth promoting substances in addition to the major nutrients. Besides avoiding such problems as leaching loss, ammonia volatilization loss etc. These sources have the nutrients in readily available form for cotton to absorb quickly. Organic farming of cotton is basically a consumer driven movement in India. The major focus lies on on-farm recycling soil and nutrients and the recommendations of the Central

Institute for Cotton Research (CICR), which include using farm yard manure at the rate of 5t per hectare, in-situ manure of fodder cowpea grown between cotton rows incorporated at 40 days after sowing, vermicompost at the rate of 1-2t per hectare, seed inoculation of *Azotobacter* and application of *Trichoderma viridae* composted from waste.

Farmers found out that inter-cropping to an extent augmented the income from the farm while withdrawal of the use of chemical substances resulted in the saving of cost of application. In fact, not only inter-cropping but also crop rotation involving the appropriate

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mix of crops is a prerequisite for the success of organic cotton cultivation. Within cotton itself, the mix-up between the original varieties, hybrid stands and improved varieties has become so indistinguishable that it becomes difficult to decide as to which varieties would withstand pest attack better in situations where the chemical pesticides are out of bound. Incidence of pests is usually markedly less in fields where cotton is grown under organic farming. Predators that have suffered extermination or diminution need to be cultivated and introduced in the life cycle of the pest to control them. Since organic farming of cotton involves several farm-grown inputs and is less dependent on market purchased inputs, it is economically

attractive to the growers. The major problem that a farmer producing organic cotton faces is the marketability of his product. As soon as the cotton bolls are ready for plucking, an appropriate market with an undercurrent of demand is required for economic returns. The farmer cannot surrender his organic produce in open market because in doing so, the very original attribute of the product is lost. With technology being at the zenith of development, small produce of individual farmer has no economic value because mass production process requires large quantities of cotton for economic working. Moreover, market forces cannot easily carry a small farmer away. The distribution pattern should be tailor made so as to facilitate dissemination of such eco-friendly products. The time would not be far when a sensitive organic farmer and conscientious consumers would reduce waste and over-exploitation of natural resources.

An investigation by the International Textile Mills' Federation shows that Indian cotton is one of the most contaminated in the world, thereby explaining its relatively lower prices in international market. Due to the use of contaminated cotton, Indian export oriented units are facing tough times. The bleak picture portrayed by the mishap in Andhra Pradesh has been erased with the advent of organic cotton. Pests in AP have shown that they are one step ahead of the chemicals but time-honoured research streamlined in this direction have found a cure to this malady as well.

Green Revolution took considerable time in changing the profile of Indian agriculture. Likewise, organic cotton will have to be a gradual and systematic replacement. In the times to come, it will surely help in assuring the sustenance of the planet's limited resources.

By Sujoy Saha, Research scholar, IARI