

Do We Need Bt Brinjal?

By Kavitha Kuruganti

You thought brinjal was one more vegetable with not too much significance in India? Think again.

Brinjal was first found and domesticated in India almost 4000 years ago. India is the Centre of Origin and Diversity for brinjal, as per the CGIAR. Did you know that in Orissa, there are some 226 varieties of Brinjal grown and consumed even now? Brinjal and related species are also used as important ingredients in several ayurvedic preparations. In Orissa again, brinjal is specially recommended as "*pothi baingan*" [as a special diet] for convalescing patients.

For many Indians, brinjal holds deep socio-cultural significance in their rites and rituals too. In South India for instance, a wedding feast is considered incomplete without a special dish of brinjal thrown in. Brinjal is the second largest consumed vegetable in the country after tomato and is often referred to as the 'poor person's vegetable'. It is available throughout the year and produced and consumed in all regions of the country, irrespective of religion or caste.

It is this vegetable that is now being sought to be introduced in the country in its genetically modified version. Bt brinjal, a transgenic brinjal variety with a gene called CryIAC from a soil bacterium inserted into the brinjal, is sought to be taken up for large scale trials all over the country in farmers' fields by the promoting agency, M/s Mahyco. In India, as the history with Bt Cotton shows us, large scale trials and lax/non-existent monitoring during trials could easily mean leakage of transgenic seeds and contamination of the production chain in irreversible ways. In 2001, while

large scale trials of Bt Cotton were still happening prior to its approval for commercial cultivation, the Navbharat Bt Cotton fiasco happened and since then, there has been no control over the proliferation of 'illegal' Bt Cotton in India.

Even in limited field trials, minimal precautions for ensuring 'biosafety' [protection of the environment and human health, including other living organisms from the GMOs] are not taken as investigations by civil society have revealed time and again. A Bt brinjal trial farmer in Andhra Pradesh – Mr B Ramanjaneyulu of Pandipadu village, for instance, confessed to having sold untested Bt brinjal fruit in the local market in Kurnool town, in blatant violation of biosafety norms. The farmer's family also consumed the transgenic vegetable in this case.

Why say NO to Bt brinjal

Major farmers' organizations in the country in addition to large consumer federations have already demanded that permission should not be granted to Bt brinjal in the country. One of the main questions they ask is, 'what is the crisis in brinjal production that a transgenic variety has to be brought in? Will Indians die of starvation if Bt brinjal is not introduced in the country?' It is true that right now, the problem that farmers have in brinjal production is not under-production but of over-production. There are many instances when farmers are having to dump their produce because they do not get remunerative price in the market. How would Bt brinjal help by increasing production as it claims it would?

OFAI Organic Farming Mela Wardha November 5-8, 2006

OFAI will have its annual general body meeting as well as an all-India get-together of organic farmers at Ashram Pratisthan in Sewagram, Wardha, this November.

The National Steering Committee of OFAI will meet on November 5 afternoon. The organic farming melawa will take place on November 6-7. Visits to organic farms in the neighbourhood areas (including Yeovatmal) are scheduled for November 8.

The melawa will focus on the problems being faced by organic farmers. OFAI will introduce its Organic Labelling Scheme (OLS) during the event. Organic farmers will bring their seeds for seed exchange. OFAI also plans to have street plays, video shows on good organic farms and workshops on special issues including genetically modified crops.

Those who wish to attend should get in touch immediately with the OFAI central secretariat since accommodation at the Ashram for the events will be limited. Organic farmers keen to participate can also send us a postcard. If it is more convenient for them, they may also contact the state OFAI secretariat.

Though the event is meant solely for members of the association, non-members (including consumer activists) are also permitted to attend and participate in the proceedings.

Do not miss out on this opportunity to interact with the best and most experienced and committed of India's organic farmers. This is a unique event and the experience will be irreplaceable.

Karnataka to have Farm Appraiser's Exam

The OFAI secretariat of Karnataka will soon be organising its organic farmers farm appraiser's exam. Those who attend the course and pass the test will be entitled to conduct farm appraisal visits in Karnataka state.

The course will be held in the latter half of November. It will be conducted only in Kannada.

As per OFAI regulations, only organic farmers can apply for the course and the subsequent exam.

OFAI central secretariat passed only 14 out of 34 candidates that appeared in its November 2005 examinations in Goa. An equivalent number of appraisers were approved by the OFAI secretariat of Gujarat after they attended a training-cum-examination course in Gujarati.

Those interested in participating and in becoming OFAI farm appraisers should contact Karnataka's OFAI secretariat (address: p.7).



Why are we seeking to introduce Bt brinjal when the country has more than sufficient production of this vegetable? Only because Monsanto wants it? Gautham Sarang spoofs the claims of Bt promoters with some trick photography.

OFAI NATIONAL STEERING COMMITTEE**Andhra Pradesh**

P.V. Satheesh,

Goa

Claude Alvares

Gujarat

Kapil Shah

Vijay Shah

Arvind Desai

Dr. Induben Patel

Kerala

Rony Joseph

T.J. Kuriyachen

Vijayalekshmi Sarang

Madhya Pradesh

Shalini Titus

Maharashtra

Mona Patrao

Jayant Barve

Manohar Parchure

Karnataka

Julie Cariappa

Babu P.

Rajasekhar G. Sindhur

D.D. Bharamagoudra

Tamilnadu

Madhu Ramakrishnan,

Mrs. T. Rajareega,

R. Jayachandran

M. Revathi

Uttar Pradesh

Bharatendu Prakash

West Bengal

Ardhendu Chatterjee

OFAI MANAGING COMMITTEE

D.D. Bharamagoudra, President

Claude Alvares, Secretary

Jayant Barve, Treasurer

Executive Members

P. Babu, Bangalore

Kapil Shah, Gujarat

M. Revathi, Tamil Nadu

Niranjana Maru, Maharashtra

Ardhendu Chatterjee, West Bengal

Juli Cariappa, Karnataka

ADVISORS

Bernard Declercq, Auroville

Narayan Reddy, Karnataka

P K Thampan, Kerala

S R Sundararaman, Tamilnadu

G Nammalvar, Tamilnadu

Bhaskar Save, Gujarat

TECHNICAL CONSULTANTS

N. Gopalakrishnan, Tamil Nadu

Preeti Joshi, Maharashtra

Dr. Tarak Kate, Maharashtra.

Sultan A. Ismail, Tamil Nadu

Ashok Kumar, Karnataka

TECHNICAL RESOURCE CENTRES

Chetna Vikas, Wardha

Tamil Nadu Organic Farmers' Technology Association,

Satyamangalam,

Ecoscience Research Foundation, Chennai

OFAI CENTRAL SECRETARIAT

Claude Alvares, Co-ordinator

Mob: 09326115907

Reshma Pednekar

Gautham Sarang

Binoy Thomas

Rejitha Ramachandran

GUJARAT STATE SECRETARIAT

Jatan, Vinoba Ashram Gotri

Vadodara, Gujarat 390-021

Tel.: 09427054132(M) 0265-2371429; 2371880;

2372593 all telefax

Email: jatantrust@sify.com

Kapil Shah (contact person)

KERALA STATE SECRETARIAT

INFAC - Information for Action

Kizhathadiyoor P. O. Palai,

Kottayam District - 686574,

Kerala 09447285525

Tel.: 04822-211997; 211689

Email: ktm_infact@sancharnet.in

Rony Joseph (Contact person)

TAMILNADU STATE SECRETARIAT**Tamilnadu Organic Farmers Trust,**

79, Elancheran Nagar, Nambiar Nagar Road

Nagapattinam - 611 001, Tamil Nadu

Tel: 0944334336(M), 04365 247007,

09443764197(Thiruvencataswami)

Email: revathima@gmail.com

M. Revathi (Contact person)

ANDHRA PRADESH STATE SECRETARIAT

Deccan Development Society

101, Kishan Residency,

Road No. 5, Begumpet,

Hyderabad, Andhra Pradesh 500-016

Tel.: 040- 27764577; 27764744

Email: hyd1_ddshyd@sancharnet.in,

P.V. Satheesh (Contact person)

KARNATAKA STATE SECRETARIAT

ICRA, No. 22 'Samskruthi'

Michael Palya, NTP,

Bangalore 560-075

Tel.: 080-25283370, 25213104

Email: icra@vsnl.net

Babu P. (contact person)

ORISSA STATE OFAI COORDINATING OFFICE**Living Farms,**

77 B, Brhameswarpatna, Tankapani Road,

Bhubaneswar, Orissa - 751018

Tel.: 0674-5524011

Email: ofaiorissa@gmail.com

MAHARASHTRA STATE OFAI COORDINATING OFFICE**MOFF,**

9, Sunrise, Nr. Chatushrunji Temple,

Senapati Bapat Road,

Pune, Maharashtra 400 016

Tel.: 020- 500 016; 5659090;

9422035230 / 9822060606 (M)

Email: vbfoundation@yahoo.com

WEST BENGAL STATE OFAI COORDINATING OFFICE**C/o DRCS - SAN**

58 A Dharmatola Road,

Bosepukur, Kasba, Kolkata

Westbengal 700 042

Tel.: 033- 26834685 (R); 24427322(O);

9830073241 (M)

Email: drcsc@vsnl.com / enre_sc@vsnl.net

Shri. Ardhendu Chatterjee (contact person)

UTTAR PRADESH STATE OFAI COORDINATING OFFICE**Kisan Vigyan Kendra**

Tintwari, Banda, UP 210 128

Tel.: 05192-233928; 233936

Email: vsk_73@sancharnet.in

FAO Meeting on Participatory Guarantee Scheme at Goa September 23-25, 2006

FAO is organising a national level workshop on Participatory Guarantee Systems (PGS), as an alternative to third party certification of organic produce. The meeting is to be held in Panjim, Goa, between the 23rd and 25th of September, 2006.

Third party certification has been historically problematic on account of the costs involved, but more importantly, the paperwork that serves to either deter farmers from going organic or encourages farmers to resort to creative record-keeping. Brazil, New Zealand and the US have all turned to PGS as an alternative that is less cumbersome, but also far more reliable.

At a time when so many organizations and farmers in India are beginning to move towards organic certification, it is important that we explore the possibilities and implications of developing a national level PGS. For that to happen, it is important that a cross-section of individuals representing organizations struggling with third party certification or alternatives to the same, participate in such a preparatory meeting on PGS. OFAI's OLS will be presented at the workshop as one instance of a farmer controlled PGS.

By the end of the meeting FAO hopes to put in place a National Coordinating Committee, that will have a mandate to think through the institutional implications of setting up a national level PGS (there are key questions relating to standards, monitoring and so on).

There has been a general unease with the complexities and costs associated with third party certification for some time now. In recognition of the need for thinking through possible alternatives, there have been meetings in Hyderabad and Bangalore, where some initial thinking about alternatives took place. Subsequently, Ron Khosla was commissioned to undertake a study on what form PGS might take in India. His findings were presented in a small half a day stakeholder consultation to get a feedback from prospective users including the traders and the retailers.

FAO has worked in partnership with Ministry of Agriculture under this Technical Cooperation Programme on Organic Agriculture which has consistently provided support to this initiative. In this meeting we already have the confirmation of attendance by Mr. Satish Chander (Joint Secretary) and other concerned officials.

There is a real sense of momentum that FAO is hoping to sustain at the Goa meeting.

NEXT ISSUE'S HIGHLIGHTS

- Bhaskar Save writes a stinging letter to M.S. Swaminathan
- Manohar Parchure shoots off tough letters to agricultural universities on organic farming
- Government of India's *Jaivik Krishi* policy document
- Interview with T.G.K. Menon on organic farming in Madhya Pradesh

ABOUT THE ORGANIC FARMING ASSOCIATION OF INDIA (OF AI) WEBSITE



Members of OFAI are invited to visit the updated website of the Association (www.ofai.org). The new website is being maintained by Gautham Sarang and is quickly becoming the most comprehensive website on organic farming in India.

The updated website contains all necessary details about OFAI. One special feature is that one can find all the names of the members of the association, statewise, and other relevant information including offices of OFAI in different parts of the country and details of the National Steering Committee and State Steering Committees.

The Labelling Scheme has also been uploaded to the site and any person now visiting the site can copy the OFAI standards document, the National Standards document (NSOP), the IFOAM standards, list of OFAI farm appraisers and full details of the organic labelling scheme. The site will soon host the list of approved organic farms and green shops marketing organic produce.

Organic farmers can find details of all forthcoming events or meetings on organic farming. A special page has been created for the anti-GM campaign which is independently handled by Revathi and Rama (Samanvaya).

The site also contains new features providing links to all other organic farming sites in the country. Since OFAI is multilingual, copies of bulletins on organic farming in different languages are being made available. The latest issue of 'Jatan' in Gujarati is already on the website.

Organic farmers can also access the Other India Bookstore's collection of organic farming titles, copies of the *Living Field* newsletter and articles written by organic farmers and other experts on issues related to organic farming, GMOs, etc.

(continued from page.1)

When it comes to pest and disease management on brinjal, it is interesting to find that some of the research carried out within the NARS [National Agricultural Research Systems] with non-chemical IPM approaches on brinjal has yielded better results than what is being claimed for Bt brinjal by its promoters!

Bt brinjal, even though it is being projected to be safe based on a set of prescribed tests for a prescribed period of time (none of which are long term studies) conducted directly or funded by the company promoting it, would carry with it all the potential environmental and health hazards that GM crops in general hold. The tests conducted in the name of biosafety are extremely questionable even on scientific grounds.

While genetic engineering *per se* as a process delivers many unpredictable results that cannot be easily tested for, the ingredients that go into making Bt brinjal are not particularly safe either. The CryIAC gene is known to be an allergen and immunogen. The marker genes used in Bt brinjal could potentially induce antibiotic resistance. The cauliflower mosaic virus, used as a promoter, could activate dormant viruses, it is feared. Even with Bt Cotton, a scientific investigation in Madhya Pradesh found out that severe and moderate allergies being reported by farm workers and ginning factory workers were strongly correlated to working with Bt Cotton. Recent studies from all over the world on GM foods and health impacts definitely show that a precautionary approach is the only one that should be adopted here.

Decision-making on agricultural technologies

All of this brings to question the very model of agriculture research, education and extension in the country by which technologies are thrust down our throats. Where are farmers in the decision-making related to agricultural models and technologies to be adopted? Do democratic processes of paying heed to a large majority of stakeholders have any place at all in the current system? Have we learnt any lessons at all from the earlier Green Revolution about technology poli-

cies and decision-making processes as we stand on the threshold of what is being called the 'second green revolution'? Do we have anything to incorporate about the shortcomings of a short-term, narrow vision related to agriculture from the ecological disaster and technological fatigue witnessed all over the country today?

India has apparently adopted a case-by-case approach to evaluating GM crops. It is not clear where and how such a policy was decided, however. This case-by-case approach does not ask fundamental questions on whether some GM solutions are needed at all! This approach allows any promoting agency to do a mandated set of tests and trials for a mandated period to walk up to the regulators and get permissions based on the data that they present. It has to be noted that all such data is created by the promoting agency itself, either directly or through funded studies. There is no independent research worth the name despite the presence of such a huge research establishment in the country and expertise in a variety of fields.

In all GM crop testing so far, comparisons are made with the worst possible scenario and not the most successful safer, affordable alternative already present. There are thousands of practising organic farmers in the country who know how to take up pest management in brinjal without causing environmental and health problems for themselves and others. However, the powers-that-be have always chosen to ignore such experiences. Even a cursory glance at this approach of increasing farmers' dependency on external resources for everything starting from pest management would show you its connection to increasing farmers' suicides and agrarian distress in the country. Do we want to go down the same path again?

(Kavitha Kuruganti is an indefatigable Sherman Tank against the corporate criminals attempting to dump BT technology into India. She is ably supported by the Centre for Sustainable Agriculture in Hyderabad.)

ICCOA Organic Farming Conference and Exhibition Bangalore 10-12, 2006

India Organic 2005 organized by ICCOA was the first ever trade show and Congress in India exclusively for organic business and according to ICCOA it generated over Rs.40 crores of business enquiries. After that success ICCOA has committed to organize this show every year.

India Organic 2006 (<http://www.indiaorganic2006.com/>) is a scaled up version of India Organic 2005 both for Congress as well as the trade show. The Congress will be in international format and is being organised in partnership with M/s Organic Services, GmbH Munich, Germany (<http://www.organic-services.com/>) who incidentally have been organizing the Congress with the world trade fair for organic business – Bio Fach.

As a first of its kind event, this year ICCOA will also be celebrating an organic food festival where cuisine from all the major regions of the country will be available for the connoisseurs.

ICCOA is ready to welcome and invite deserving speakers for the Organic Congress. Those who have names to suggest may get in touch with ICCOA directly.

The continued emphasis on companies and export, however, is depressing. The basic rate for the stalls at the trade fair is Rs.30,000 for the four days. This rules out all organic farmers except the largest. Unless ICCOA takes drastic action, this trade fair will gradually degenerate into a promo for big guys and big companies; organic farming is bound to get lost in all the corporate glitter.

Organic Farming News: India

OFAI's Anti-GM Campaign

At its meeting in Bangalore on July 15-16, 2006, OFAI's Managing Committee nominated Ms. M. Revathi, an MC member to act and function as the Association's nodal point for the Anti GM Campaign.

Revathi is a former school teacher who threw up her job to assist Mr. G. Nammalwar in his work of promoting organic farming in Tamil Nadu. She and her team have done outstanding, innovative work in the tsunami devastated area of Nagapattinam. In fact, Revathi shifted to Nagapattinam immediately after the disaster and has stayed there ever since. OFAI has requested Revathi to ensure OFAI representation in all future meetings of GM-Free India and to continuously brief members of the Association on efforts being made to reverse the introduction of GM crops in the country.

Immediately after she took charge, Revathi met with Ram of Samanvaya in Chennai and they set up a Bulletin Board (indianorganicfarmer@gmail.com) which would link up all the OFAI members that are interested in joining the Anti-GM Campaign and to take in their opinions. The service is maintained for OFAI by Mahanadhi, Tamilnadu.

In the meanwhile, organic farmers desirous of playing a more active role (for example, organizing campaigns to uproot GM crops in their areas) are requested to be in touch with Revathi at the email/phones given on p.2

For information on GM crops and on the mafia of multinational corporations and agents financed by them, including scientific sounding institutions, please visit the website www.gmwatch.org. This site is maintained by individuals who update it everyday with fresh news. From time to time OFAI supplies material to the site that is culled from Indian papers.

At present, the most important campaign is to ensure that BT Brinjal does not get approval of the Government of India for planting in any area within the country. Important communications in this context are the protest letters with detailed scientific data submitted by the Campaign to the Ministry of Environment & Forests (the entire document can be found at the OFAI website). Also very interesting is the fairly long letter written by Mr. Veerendra Kumar, Member of Parliament from Kerala. The text of the full letter is also available at the OFAI website.

Organic farmers who wish to keep abreast of the Anti-GM Campaign but who are unable to access the internet are requested to get in touch with the OFAI Secretariat who will send them these materials by post. At the moment these documents are available only in English and that is their only limitation. However, farmers are encouraged to set up study groups, where one of them who speaks English can explain the significance of what is made in these communications.

OFAI President DD Bharamagoudra attends Planning Commission Meeting

The Planning Commission is in the midst of drafting the section on organic farming in the Tenth Plan. OFAI was invited to be part of the consultations on organic farming and horticulture. D.D. Bharamagoudra, President, OFAI attended the meeting. His note presented at the meeting can be found at the OFAI website.

FAO-NCOF

Organic Package of Practices Project

The Food & Agricultural Organisation (FAO) and the Indian Centre of Organic Farming (NCOF) located at Ghaziabad requested five NGOs in different parts of the country to prepare organic Package of Practices for various crops. The NGOs were requested to also look seriously at indigenous practices that are fully organic and ensure that these are included in the documents which they were asked to prepare.

The official meeting of the Package of Practices group was held in Pune in the second week of July. The OFAI coordinator from the central secretariat participated in the meeting at the request of FAO.

As the project now stands, the 5 NGOs will incorporate the criticisms made of their documents during the July meeting and ensure that these are ready for publication by the middle or end of August 2006. The Package of Practices documents will be approved by Dr. R.K. Pathak, who is the Technical Consultant to the group and also by the FAO and NCOF. Thereafter they will be printed in five volumes.

The substance of the Package of Practices will also be made available in local languages by the NGOs concerned for distribution in their areas in the States so that more and more farmers can be guided in their efforts to do organic farming. The five NGOs that participated in the programme are listed below together with the crops for which they have prepared the Package of Practices.

- 1) Development Research Communication and Services Centre, West Bengal
- 2) North Eastern Region Community Resource Management Project for Upland Areas, Shillong
- 3) Centre for Indian Knowledge Systems, Chennai
- 4) Maharashtra Organic Farming Federation, Maharashtra
- 5) INHERE, Uttaranchal

All information about the project including the draft Package of Practices can be found at the FAO website www.faoindia.org.

Panchagavya Inventor Plans Nationwide Workshop

Dr K Natarajan, panchagavya inventor, is proposing to organise a special two day workshop on all aspects of Panchagavya. The workshop will in all eventuality be held in Erode.

This is the first national level workshop on Panchagavya and preference will be given to participants from other states.

OFAI is assisting Dr Natarajan's NGO (RCAC) in the organisation of the workshop. While the dates of the workshop are yet to be decided, those interested may register their names either with RCAC or OFAI's central secretariat.

RCAC,
R.S. Hospital Complex,
Bye-pass Road, Erode 636151
Phones: 04204 222369
Mobile: 0944358379
email: rcacngo@yahoo.com

OFAI-MOFF Collaborate on Organic Farming Exposure in Suicide Prone Areas

MOFF was supported by OFAI to organise a series of farmer level meetings to disseminate simple and practical information on how farmers could get into organic farming, as a way of getting out of the suicide treadmill.

The meetings were held in the Vidarbha area which has seen a spate of farmer suicides.

MOFF is convinced that only widespread dissemination of a simple package of organic practices will get the farmers back to healthy agriculture. The trainings were held in the month of April and May 2006.

OFAI Organic Labelling Scheme approved; commences

The Managing Committee of OFAI has finally approved the detailed Organic Labelling Scheme (OLS) which will enable OFAI's organic farming members to market their produce as food grown without chemicals and poisons.

The OLS booklet is available from the central secretariat. While it is free for all organic farmers who register for farm appraisal with the association, non-farmers will have to pay a fee to cover the cost of reproduction. The booklet is also on the OFAI website for free download.

The OLS is the first participatory scheme for farm appraisal available in the country. Participation however is limited only to OFAI members. Organic farmers who wish to avail of its services (including use of its label) will first have to become members of the association.

The entire scheme is based on appraisal reports filed on the basis of visits made by organic farmers. In this sense, the OFAI OLS is unique. The appraisals are also done in the local language, so that both farmer and appraiser clearly understand the process at work.

The OLS document also contains for the first time the OFAI organic guidelines. These guidelines have been formulated after intensive discussions within the organic farming community, notably Gujarat. They are also in consonance with the IFOAM 2005 guidelines.

The OFAI organic farming guidelines are also available as a separate booklet from the OFAI central secretariat. They are already being translated into Telugu, Tamil, Marathi and Kannada.

Organic farming members of OFAI

New Seeds Bill

Kavitha Kuruganti reports:

I just spoke with one Mr Hardev Singh, a deputy secretary in the Parliament Secretariat in the Standing Committee on Agriculture about the Seeds Bill. I was told that feedback both written and oral has been considered from the public, the standing committee MPs and final evidence was also collected from the Ministry and now, the report by the Committee is being finalised. This report will be introduced in the Parliament in this session only I was told. I was also told that since there were hundreds of responses on the Bill, only selected groups were invited for personal feedback. (Communication to OFAI dated 8.7.2006)

Killing Fields: Pesticide spray proves disastrous in Salkiana Village, Jalandhar

Report of a fact finding visit by Kheti Virasat Mission

21 July 2006 began as any other day for the residents of Salkiana village in Jalandhar district. That was until around 8.30 am - until they started feeling severe suffocation and breathlessness. The worst affected were the school children of the Government-run Elementary School. It was just after Morning Prayers that the students started complaining of a strange smell and breathlessness. The teachers were not aware of what happened either. Suddenly one student fell unconscious near the hand pump [of the drinking water tube well] and then student after student started to faint. Within ten minutes, 16 students fainted after inhaling something that was toxic.

It was not just the school children who were affected. The villagers outside the school were also experiencing and complaining about breathlessness by then. Some women in the adjoining houses are reported to have fainted too.

There was total panic in the village for a while. It was only then the villagers began to realize what happened – IT WAS A DEADLY PESTICIDE SPRAYED IN A NEARBY SUGARCANE FIELD THAT HAD AFFECTED THE VILLAGERS. The villagers then understood that they were experiencing acute poisoning symptoms.

Meanwhile the farm workers, who had sprayed this pesticide, came into the village and disclosed that they had sprayed PHORATE. In this case, it was Sudarshan Chemicals' SUTOX 100 that they had sprayed. The workers had sprayed 15 kilos of Phorate 10G in 3.75 acres by then.

In the school, the situation had become quite serious by then and the teachers started experiencing breathlessness too. Students started complaining of difficulty in breathing, severe headache, body ache, irritation in eyes, uneasiness, dizziness and some of them started vomiting.

The teachers acted very swiftly and informed the higher authorities and the local health officer. Within half an hour, a team of doctors reached the school and first-aid was administered. The affected students and teachers were shifted to Civil Hospital, Phillour [the nearest town]. However, some parents took their children to private hospitals also. Some children with severe breathlessness were administered oxygen.

Fact Finding Visit:

Following this incident, a fact finding visit was made by Kheti Virasat Mission 26th and 28th July 2006 to this village. The teachers, the students, the other affected villagers, the sarpanch and other farmers were interviewed as part of the fact finding visit. In addition, the FFT [fact finding team] spoke with the doctors in the Civil Hospital and met with the SDM, Phillour.

This report tries to give a picture of the situation based on all the information gathered from these interviews and discussions.

According to the doctors at civil hospital, patients were admitted with following signs and symptoms [somewhat varying between patients]:

1. Excessive Lacrimation
2. Excessive Salivation
3. Dizziness
4. Nausea & Vomiting
5. Breathlessness
6. Body aches and cramps

All these patients were in the hospital for three days. Two others patients Suman (18 year old young girl) and Sunita (14 year old girl) were admitted in a private nursing home at Phillaur.

Sunita, a newly-married girl inhaled the toxic fumes when she had gone near the fields the next day. Her condition deteriorated soon after and she was taken to the Civil Hospital. She was then referred to a hospital in Ludhiana as her condition was found to be critical. Her family members got her admitted in to Arora Hospital. She was here for four days. These are the 21 cases of hospitalization from the inhalation poisoning from the phorate spraying.

At the time of the fact finding visit, some of the students and teachers were still unwell, even after six days. They had irritation in eyes upto six days, itching of the skin and general uneasiness. The teacher in the government school Mr Bhagwan Dass was complaining of disturbance in his digestive system. He is suffering from constipation and urinary problem. Same were the complaints from Hardev Singh M 38 and Ms Asha Sharma F 34, both teachers at the government school. Bakshish Chand, 37, who is also the ex-sarpanch of the village had similar complaints.

All children and adults, exposed to PHORATE, were experiencing loss of appetite even on sixth day after exposure. Most of the children poisoned were from SC community with low incomes.

After this incident, there is widespread resentment and concern amongst the villagers regarding pesticides. They are quite worried about safety from pesticides. The elders at village feel that there should at least be restrictions followed about spraying away from the village that too from schools etc.

Mr Ram Kishan, Harjeet Ram and Ram Swarup (all members of the Panchayat) and other villagers were of the strong view that some concrete steps should be taken to prevent such mishaps in future.

The Doctors who worked tirelessly at Civil Hospital, Phillaur were admitting their limitations in dealing with a case like this, given that none of them is a trained environmental epidemiologist.

About Phorate:

Phorate is a Class IA pesticide – which means that by World Health Organisation's classification, it is "Extremely Hazardous". Phorate 10% G falls under Class IB. The Food & Agriculture Organisation recommends that products that fall under Class IA and Class I B [Extremely Hazardous and Highly Hazardous] should not be used in developing countries given a variety of safety concerns related to these products.

About Class I pesticides in India

It is estimated that 2 to 5 million people every year suffer acute poisonings all over the world and that around 40,000 people die. These are very conservative estimates and these poisonings occur mostly in the developing world, caused mainly due to OP pesticides. Many of these are Class IA and Class IB pesticides. In India, despite the fact that FAO has recommended the non-usage of Class IA and IB pesticides, a number of these products continue to be used.

It is only from July 1st 2006, after many long years of activist struggles with the company that Bayer, a market leader in pesticides in India, had stopped marketing many of its deadliest pesticides including its Class I products. In earlier studies done by groups like Centre for Sustainable Agriculture, Hyderabad, many such products were implicated in acute poisoning hospitalizations and deaths [4].

It is also interesting to note that even though the Central Insecticides Board is currently reviewing several pesticides that have been banned in other countries for their continued use in India, several deadly pesticides like Phorate, Edifenphos, Oxydemeton-Methyl, Methyl Parathion etc., are not amongst them!

Given the wide extent of acute poisoning with pesticides, not to mention the many long term impacts and the related socio-economic problems, we strongly demand the following:

To the Punjab government:

- Immediately ban aggressive marketing of pesticides and all types of agro-chemicals including all forms of advertisements and publicity of pesticides along with all incentives given to pesticide dealers' network with the express acknowledgement that these products are essentially poisons.

- Punjab Government should take up a proactive campaign on ill effects of pesticides – raise awareness about the dangers through well-financed education campaigns and ensure the dissemination of information on ill effects of pesticides to all users

- acknowledge the threat and that the problem of serious health effects with pesticides exists

- assess the extent of the problem with various adverse health effects of pesticides

- fix liability and get compensation to be paid for medical care and economic rehabilitation for all victims – get the industry to pay up; if not, the government to pay.

To the Union of India:

- ban all class I a, I b and II pesticides immediately

- modify pesticide risk assessment procedures
- bring in the precautionary principle

- promote better and safer agricultural practices including NPM approach and organic farming

- curb aggressive marketing by pesticide industry

To the health sector:

- train and equip health sector staff and infrastructure to identify and deal with such cases

- set up systems for regular and proper monitoring

- Government should fill posts of District Epidemiologist in all districts on priority basis.

- Citizens' committees on epidemiological surveillance shall be formed under District Epidemiologists to ensure community participation in mitigation and crisis management process

To the Industry:

- pay compensation to all the persons affected

- pro-actively withdraw all Class I and Class II products from the market

- stop aggressive marketing

To Punjab Agriculture University [PAU]:

- Set aside ample funding to ensure adequate education, research and extension on organic farming. Such research to be farmer-led and farmer-centric

- Policy formulation should be such that they are evolved from the original experiences of organic farmers. PAU should draw from such experiences and not just research in agriculture research station campuses

- Crops that are suitable to the local natural eco-systems should be promoted and research should be taken up on this basis

Umendra Dutt

Executive Director

KHETI VIRASAT MISSION



Interview with Sarvadamman Patel



Sarvadamman Patel is one of the pioneers of the organic farming movement in Gujarat. His 40 acres farm in Ravipura, near Anand in Gujarat is a pilgrim place for farmers who are interested in organic farming.

Sarvadamman does not come from a farming background. When he started farming a quarter of a century ago he practised chemical farming. It is only when he came to realize the after effects of the chemical farming that he turned to organic farming. Now he combines this with biodynamic farming. He is satisfied with the yield from his farm and sells the produce through his own shop. The surplus is sold to a organic shop in Vadodara and Ahmedabad and then in the open market.

Sarvadamman spoke to OFAI of his experiences and his achievements in organic farming.

G: First, tell me about yourself, your family, your background.

SP: I did not grow up with a farming background. I have a basic B.Sc degree. I studied in America for my MS. (Agronomy) University of Wisconsin. Long ago I did a one year and half practical farming on 3 different farms for six month each. We were eight boys and were given a five acres farm where we grew paddy, wheat, maize and soya-bean. It was meant to give us students experience while we worked. But being a Patel, our past generations were farmers. For one or two generations, we were not active farmers. But it has all come back to me.

G: What do you grow on your farm?

SP: We have allotted ten acres for vegetables. Almost all vegetables grow in our region and we grow all the crops in the different seasons. We have a variety of fruit trees – papaya, banana, guava, mango, pomegranate, chikku, amla, sweet lime, lemon etc. We also grow pulses and grains. Basically what we have is a certain quantity of all food crops. We hope that in this way our shop can cater to the needs of people and supply different food items throughout the year. I do not want to produce more than I can sell. I know how much my shop can sell. There are some times when I have to hunt for buyers. Or I have to go to the open market. But, only as a last resort will I go to the general market. There too I have a name as an organic farmer so I get 10-15 percent better price for my produce.

G: Have you used chemicals or fertilizers in your farm before?

SP: We started chemical farming in 1977 and for 23 years we used chemicals and also some pesticides. Then in 1999 we switched to organic farming and we have continued since then. Since October 7, 2001 we are doing Biodynamic farming which is something more than organic farming.

G: How does biodynamic farming work?

SP: Biodynamic (BD) farming was started by Dr. Rudolf Steiner in 1924 in Germany. We make some preparations using cow dung and cow horn for harnessing a combination of cosmic energy and earth forces. The horns of the cows are filled with cow dung and buried in the soil for about six months in the wintertime. The material we get from this is full of humus and micro organisms. 25 grams of this is mixed with 15 litres of water, stirred clockwise and then anti clockwise, forming a whirl. This is sprinkled on the soil in the evening. This increases the microorganisms, biotic activities, earthworm population and improves the structure of the soil. This is done 4 to 6 times in a year. This basic preparation is called BD 500. There are other variations of this preparation called BD 501, 502 to 508. Different materials such as ground quartz, silica, certain flowers and herbs are used to make the preparations which are filled into the cow horn or animal skulls and buried in the soil for six to twelve months. There are a total of seven such preparations. These are excellent for composting. One gram each from these seven preparations will greatly increase the speed of composting and the potency of the compost.

The BD preparations are not substances in themselves. But they give certain force to the plants to take the necessary nutrients from the soil. Some preparations are for stabilizing the nitrogen in the soil and in the compost. Some are used as pesticides. One preparation used 60 kilos of cow dung and three grams each of BD 502 - 507 preparations. This is used as a nutrient supplement for the crops, besides compost.

Biodynamic farming also has specific days for planting, sowing and harvesting different plants, depending on the part of the plant that is used. Plants are classified into root, leaf, flower and seed crops. Cultivation according to the biodynamic calendar will bring the vital forces of the lunar energy to influence the plants. According to Dr. Steiner, the food which is produced by using chemicals can fill our stomachs, but not our souls. The food from biodynamic farming is filled with

spiritual energy also and transmits this vital force to us.

G: Is biodynamic farming easy to learn? Does it involve a lot of work?

SP: BD farming is easy to learn, but one should be ready to be very meticulous about the work. As I have mentioned before the lunar calendar must be observed strictly. But one gets to see the results very quickly. Within days of using some of the preparations, you can see the change. For example when you spray BD 500 there will be an intense dew formation the next morning because it draws moisture from the atmosphere and gives it to the soil. If BD 500 is sprayed on the field in the evening in dry land where rain is scarce, can you imagine the impact on the crops? The soil will remain alive and give life to the plants. So these preparations have a significant role in water usage management, regenerating soil which is damaged by chemicals and cultivation in dry land farming.

G: Which farms in India besides yours are doing BD farming?

SP: There is an organic farm of 160 acres in Kathwada near Ahmedabad managed by Dr. Dinesh Patel which has switched to BD farming recently. Then there is a farmer named Shamsheer Singh in Vasad whose son Ishwar Singh manages a BD farm of about 20 acres, part of which is for dairy. Another farm is in Diu, run by Kiran Sheth. This farm is about 140 acres and Sheth is doing BD farming for the last one and a half years. There are a few other farms as well but I am not aware about how well they are running.

G: Are there any special methods for dairy and poultry in BD farming?

SP: Of course there are far more strict rules for dairy in BD farming as compared with organic farming. There are specific ways of tying the animals, feeding them etc. You cannot de-horn the animals. In our dairy farm we do all things in the biodynamic way except for the feed concentrate that we give the animals. Our feed is from Amul dairy and while it has more protein content it is not organic. However, we are planning on making our own feed concentrate within the next six months. Then our dairy farm will be both biodynamic and organic.

G: What about poultry?

SP: There is no organic farming in poultry and sheep in our neighbourhood. We have only 50 birds which are managed in the regular way. It is very expensive to maintain organic poultry.

G: Talking about organic farming, is it possible to totally eliminate the use of chemicals from the cultivation for all crops?

SP: Most certainly. We have been doing this for the last five years. We use organic manures instead of NPK. We supplement the soil with neem or groundnut cake for Nitrogen, rock phosphate and Bone meal for Phosphorus, and for Potash we use wood ash or seaweed / Blue-green algae.

G: Did the yield from your farm drop when you changed to organic farming?

SP: No, to my surprise, the yields didn't drop for most of the crops. Maybe the residual effects of the chemicals we used for the past 23 years were still playing a role in the first and second season. I felt it drop in the second year, not the first.

G: That's interesting. Other farmers tell a different story.

SP: I always had around 70 animals. I used to apply cow dung and compost to the farm along with the pesticides and chemicals. My pesticide use was also minimal compared with the other farmers. So when I stopped using chemicals there

was no drastic change. I had a good earth worm population even when I was using chemicals, which of course I have multiplied a hundred fold now.

G: *Applying a cost benefit analysis to organic v/s inorganic farming, is organic farming beneficial from the point of view of cash returns?*

SP: Most definitely, yes. It took two to three years to get to that level. Initially there were some problems of pests. But soon the fertility of the soil increased and this increased the resistance power of the plants and pest attacks became fewer and fewer. So costs came down, as neither pesticides nor fertilizers were used. Cultivation has also become very easy because the soil is always workable. Water requirement has decreased and we are irrigation about 30-40 percent less. Less irrigation means less weeds in the fields. Less weeds means less labour cost. So there is definitely a good cost – benefit ratio. Initially the returns were Rs.10-15,000 per acre. Now it has increased to Rs.15-20,000 in the case of vegetables. Of course, vegetables are perishable and some times we have surplus stock which can't get sold. But generally we are doing just fine.

G: *How does the practice of organic farming help to reduce water requirement?*

SP: Initially, when we cultivated fodder crops like lucerne, we used to irrigate once every seven days in the summer. Today we are irrigating once every 14-15 days. Earlier, the crop was 2 – 2 1/2 feet only. Today it grows to a height of 3 and some times 4 feet in the winter. In winter, we use to irrigate once in twelve days, but now only once in 20-25 days. So we are saving 30 to 40 percent in irrigation in the case of lucerne alone. As for the other crops like lady-finger (bhindi), cow pea and cluster beans, the first irrigation is done only one month after sowing. And the subsequent irrigation again is after ten or twelve days. Earlier we used to irrigate about twenty days after sowing. So there we save about ten days. But in chemical farming you have to irrigate every seven days for ladies finger (bhindi) and cowpea. So one very significant advantage of practising organic farming is water saving which means water conservation. Similarly, we also save on electricity, wear and tear of equipment, labour – in fact everything. Disease and pests have come down tremendously. There is very little Mosaic now – it comes and goes. Aphids, which used to trouble us for one and half years we don't see at all now. So also fruit flies have reduced though they have not gone away completely. Caterpillars in cauliflower and cabbage result in maybe half to one percent damage only. The only crop where we have not been entirely successful is chillies.

G: *Nowadays there is a great emphasis on foreign markets and export for organic farming products. Is this a good trend? Will this benefit the common farmer?*

SP: I am not against export of organic farming products. I am not one of those who believe that nothing should go abroad. But if we can sell our produce for the same price or a better price in India, then why we should we sell it abroad? On the other hand if I can make value added products, and get a higher price I too may be willing sell my products abroad. If I get more money, it can be used for spreading of organic movement in India. Or I can do some research on my farm.

G: *Are there adequate markets for organic produce?*

SP: I have my own market for my products. I have a shop on my farm. I also sell my produce to *Jatan*, to people in Ahmedabad and other places. But I agree that it is difficult for a farmer to find a market for his organic produce. We are hoping

The Organic Farming Association of India

(A society registered under the Societies Registration Act, 1860)

Registered address:

G-8, St Britto's Apartments, Feira Alta, Mapusa 403 507 Goa, India
Tel.: 91-832-2255913. Tel./fax: 91-832-2263305
Email: admin@ofai.org Web: www.ofai.org

Membership form of the Association

I, _____, aged _____

male/female, desire to become a member of the Organic Farming Association of India. My membership fee is enclosed herewith.

My complete and correct address (with phone and email data, if available) is provided below:

I would qualify to be a member of the Association under one of the following categories (please underline the chosen category):

- Organic Farmer
- Company/Society/Trust involved in organic food production
- Green Shop (applicable only to shops marketing organic produce)
- Green Trader (also includes suppliers of organic farming inputs)
- Organic Farming Promoter
- Organic Consumer

I am willing to assist the Association in the furtherance of its objectives as and when I have the time or when called upon to do so. I can assist in the following ways:

Name and signature of applicant

Details for applicants:

Membership fees as per bye-laws of the association:

Individuals: Rs.100 per year

Non-profit organizations: Rs.1,000 per year

Companies and partnerships: Rs.5,000 per year

All members are entitled in the first year of membership to four free issues of *The Living Field* newsletter.

Membership is valid from 1 April – 31 March every year. Membership fees can be paid for more than one year at a time in advance.

Membership can be paid direct at the following OFAI secretariats.:

● **Andhra Pradesh: Deccan Development Society**, 101, Kishan Residency, Road no. 5, Begumpet, Hyderabad, Andhra Pradesh Tel.: 040 27764577, 27764744 Email: hyd1_ddshyd@sancharnet.in ● **Maharashtra: Maharashtra Organic Farming Federation**, 9, Sunrise, Nr. Chatushrungi Temple, Senapati Bapat Road, Pune, Maharashtra 400 016 Tel.: 500 016, 020 5659090 Mob.: 9422035230 / 9822060606 Email: vbfoundation@yahoo.com ● **Gujarat: Jatan**, Vinoba Ashram, Gotri, Vadodara Gujarat 390 021 Mob: 09427054132 Tel.: 0265 2371429, Email: jatan@satyam.net.in ● **Tamil Nadu: Tamilnadu Organic Farmers Trust**, 79, Elancheran Nagar, Nambiar Nagar Road, Nagapattinam, Tamil Nadu 611 001 Tel.: 0944334336(M), 04365 247007 09443764197(Thiruvankataswami) Email: revathi7359@yahoo.co.in ● **Karnataka: ICRA**, No. 22, 'Samskruthi', Michael Palya, NTP, Bangalore 560 075, Karnataka Tel.: 080-25283370; 25213104 Email: icra@vsnl.net ● **Kerala: INFAC**, Kizhathadiyoor PO, Palai, Kottayam District Kerala 686 574 Tel.: 09447285525(M); 04822 211997 / 211689 Email: ktm_infact@sancharnet.in ● **Orissa: Living Farms**, 77 B, Brhameswarpatna, Tankapani Road, Bhubaneswar, Orissa - 751018 Tel.: 0674 – 5524011 Email: ofaiorissa@gmail.com ● **Goa & rest of India: OFAI**, G-8, St. Britto's Apartments, Feira Alta, Mapusa, Goa 403507 Tel.: 0832 2256479 Mob: 09326115907 Email: ofaigoa@gmail.com, admin@ofai.org

(Please note: Since OFAI state secretariats are managed by NGOs, membership may be required to be paid in the name of the NGO concerned and not OFAI. Receipt may also be given by the concerned organization. However, the applicant will get a membership certificate from OFAI, after the fee is transmitted to the central secretariat of the organization by the state secretariat concerned.)

Organic Farming: International News

Law to label GM foods gazette

COLOMBO: The Government has finally gazetted legislation making it mandatory for importers and local manufacturers of Genetically Modified (GM) foods to label their produce in the future.

The law which will come into effect from January 1, 2007 requires all GM food items to carry a prominent sticker informing that the product contains GM materials, giving the consumer the freedom of choice, Assistant Director, Food Advisory Unit of the Health Services Department S. Nagiah told the *Daily News* yesterday. Defaulters of this Law will have to face a six-month jail term or a Rs.10,000 fine or both under the Food Act, No. 26 of 1980.

All GM food importers will be required to apply for a permit from the Food Advisory Committee chaired by the Health Services Director General to import GM products in future.

The permit will be given after verifying that the products are safe for human consumption and with the condition that it will be prominently labelled.

"Locally we have not started manufacturing GM foods. But there are certain products containing GM materials," Nagiah said. "They will also be required to label these products in the future," he said adding that their network of food and drug inspectors, MOHs and PHIs which have a manpower strength of around 2,000 will be used to detect any defaulters and bring them to book.

Asked if the Health Services Department currently possesses the technology for testing, he responded in the affirmative saying they were planning to carry out routine checks to ensure effective enforcement of the law.

US rice farmers sue corporate Bayer on GM rice

LOS ANGELES, Aug 28 (Reuters) - Rice farmers in Arkansas, Missouri, Mississippi, Louisiana, Texas and California have sued Bayer CropScience, alleging its genetically modified rice has contaminated the crop.

The farmers have alleged that the unit of Germany's Bayer AG failed to prevent its genetically modified rice, which has not been approved for human consumption, from entering the food chain.

As a result, they said, Japan and the European Union have placed strict limits on U.S. rice imports and U.S. rice prices have dropped dramatically. U.S. agriculture and food safety authorities learned on July 31 that Bayer's unapproved rice had been found in commercial bins in Arkansas and Missouri. While the United States is a small rice grower, it is one of the world's largest exporters, sending half of its crop to foreign buyers. The genetically engineered long grain rice has a protein known as Liberty Link, which allows the crop to withstand applications of an herbicide.

The European Commission said on Wednesday the EU would require U.S. long grain rice imports to be certified as free from the unauthorized strain. The commission said validated tests must be done by an accredited laboratory and be accompanied by a certificate. Japan, the largest importer of U.S. rice, has already suspended imports of U.S. long-grain rice.

The United States is expected to produce a rice crop valued at \$1.88 billion in 2006. U.S. rice growers are responsible for about 12 percent of world rice trade.

Sarvadamman Patel interview

(continued from page.7)

to find a solution for that. However, farmers are converting to organic farming not because of the good price they will get for their products but because they have realized that they are no longer getting good returns from chemical farming. In fact, the farmer is not looking for an organic market but at the general market.

G: *Do farmers from the neighbourhood come to visit your farm? How do they react?*

SP: Very few neighbours bother to visit my farm. But, because of Jatan and others who know about my farm, at least 4-5 people come every week to see the farm on a regular basis. On the last Saturday of every alternate month we have a group of 40-50 people who visit and I spent a few hours with them. I show them around the farm and explain the different practices we follow.

G: *What are the effects of the chemicals used by the farmers in the neighbouring farms on your farm? How do you protect your farm from contamination through air, water or soil?*

SP: We are very lucky that on three sides around our 40 acres farm, there are village roads and on the fourth side there is a slope and water from our land flows to the other lands. On that side we have three thick lines of glyricidia and one line of trees. So we have very good buffer on all sides. Water doesn't flow into our land even from the village roads, as it flows into the drainage. So there is no way that any pesticides or chemicals come into our land. In any case in our area the use of pesticides and chemicals is negligible.

G: *What do you foresee in the future for organic farming in Gujarat?*

SP: The mood is changing. The first change we see is that many more people have started vermicomposting. In every village there are at least two or three people who make vermicompost. They apply it on the fields even with the chemicals. And they feel that the yields are going up. Soon they are bound to change to organic farming. Nowadays every newspaper has at least half a page on organic farming daily. The organic farming festivals that are being held throughout Gujarat and the media boost has led to a change in the mood of the people. I have been doing organic farming for five years and I can see the pace of change has increased. So I think that in the coming four to five years, a tremendous change will take place as farmers change from chemical to organic farming.

G: *Are you happy that you have given up chemicals?*

Yes I am very happy using organic and biodynamic methods and having given up chemical farming. Besides the fact that diseases have come down and deficiencies of the soil are removed I don't have to depend upon experts for making the preparations for my farm. Sometimes I think out preparations for pests or let the nature balance the pests in her own way. So I am now only a watcher. Watching nature, seeing how she controls everything. There is a tremendous change in my attitude towards farming. I believe a good organic farmer must be many things, a horticulturist, a botanist, an ecologist, a veterinary, a biologist, a dairy man a mechanic and score of other things and a bone all, like Confucius, the Chinese philosopher said centuries ago, "The best fertilizer on any farm is the footsteps of the owner."

China's GM gets grounded

Nature reacts, builds resistance, pesticides return

China introduced BT cotton in 1996. A study this year indicates that the short term gains of BT cotton are now being wiped out by a fresh set of problems resulting from the ecological imbalance created by the use of BT seeds. The study is of very great importance to India where similar practices have been adopted by farmers rushing to use BT cotton seeds.

When Monsanto introduced BT cotton in China, the Company promised that the introduction would completely replace existing chemical pesticides. In fact, this happened for a short while. Before the widespread use of BT cotton, Chinese farmers were applying an average of 20 pesticide treatments in a season to control bollworm infestations. These treatments dropped to an average of 6.6 in the early stages of BT adoption. In effect, this meant that Chinese farmers reduced their pesticide use by 43.3 kgs per ha, a 71% decrease. Three years later however the situation had once again reversed.

Seven years after the initial commercialisation of BT cotton in China, researchers have been able to show that total pesticide expenditure for BT cotton farmers in China is nearly equal now to that of their commercial counterparts. Thus though BT farmers saved 46% on pesticides for bollworm, when compared to non-BT farmers they spent 40% more on pesticides to kill emerging secondary pests. These pests, which were rarely found in the field prior to the adoption of BT cotton, were presumably kept in check both by bollworm populations and broad-spectrum

spraying. The extra expenditure required to control these secondary pests which have arisen out of ecological imbalance created by the introduction of BT cotton have now .. the savings on main pesticides by bollworm.

Researchers have also indicated that each of these problems have arisen because no Chinese farmer maintains the necessary 20% refuge for accepting balance to maintain resistance. (This practice of not maintaining refuge is also being allowed in India because of the incapacity of agricultural departments or governments to enforce the requirements.)

The Green Revolution took a couple of decades to disclose its negative aspects which have now surpassed its positive contributions. The negative consequences of the so-called Green Revolution are disclosing themselves already within seven years. The study on BT cotton in China was carried out by researchers from the Chinese Academy of Science and Cornell University.



The Living Field is published by:

Central Secretariat, OFAI

Editor: Claude Alvares