



# What are the South Indian Farmers saying about their **BT COTTON EXPERIENCE?**



**Southern Action on Genetic Engineering [SAGE], Hyderabad, A.P.**  
**SAGE – Karnataka**  
**SAGE – Tamil Nadu**  
**SAGE - Orissa**



*Eleven Farmers, Men and Women, Who have been cultivating cotton for decades and growing Bt Cotton on their farms for 4-8 years, shared their experience with Bt Cotton in front of a Panel of four Senior High Court Judges In Bengalooru In A Round Table held on March 26 & 27, 2011. These farmers from A P, Karnataka and Tamil Nadu had the same Tale of how they were cheated by the big claims of The Bt Cotton companies and ended up being terrible losers. The loss was in economics, Personal Health, Soil Health and Cattle Mortality. Now they are all feel hopelessly trapped. Their only wish is to get back to Non Bt Cotton*





## **ABOUT THIS PUBLICATION**

On this day of Global GMO Opposition Day, we deem it extremely important to present some bitter truths on Bt cotton that present a harsh reality hidden behind the heinous hype created by the biotech industry and the attendant media. While the “Emerged” [thanks to Obama] Economic Super Power that is India gloats over the fact that millions of new acres are added every year to Bt Cotton cultivation, the stories of Rajamani, Sulochana and Ponnuthai narrated in this booklet offers us the tales of deception, multiple miseries, personal tragedies which make us wonder whether the superstructure of the new GE economy is sought to be built on the graves of such small farmers and their right to live a life of happiness.



On March 26, 27, 2011 the Southern Action on Genetic Engineering [SAGE, a network of over 60 groups representing farmers, scientists, consumers, media practitioners, legal fraternity and environmental activists] had organized a Round Table called *Emerging Jurisprudence of Genetic Engineering: Food, Farming and Biosafety* at the National Law School University of India [NLSUI], Bangalore. Three senior High Court judges from AP, Karnataka and Kerala along with the Chief Justice of Orissa High Court sat through the two day Round Table, patiently heard the personal stories of the farmers from AP, Karnataka and Tamil Nadu – all victims of Bt Cotton and made some strong observations on what they had heard.

Alongside the farmers prominent scientists such as Dr P M Bhargava, Dr Vijayan and legal experts such as Mr Prashant Bhushan and Ms Shalini Bhutani widened the canvas of the context to usher in many related issues like the imperfection of Genetic Engineering as science, Biosafety laws, IPRs and the current legal discourse in the country. Many environmentalists including Dr Yellappa Reddy presented their own concerns on the health of the soil and environment in the era of GE in farming.

But the most poignant tales came from farmers who described how the economic promise of Bt cotton was an utter lie, how it had failed them repeatedly in terms of yields and how their soil was turning toxic, the allergies and respiratory diseases they were being subjected to and the loss of their animals which had grazed on Bt cotton stalks. It was not the heartless narratives of sold-out-scientists under the payroll of Monsanto and Syngenta. Nor was it the “expert opinions” of farm





scientists who, by singing the hosannas of GE were dreaming of plush contracts from GE industry and global jetsetting for all-expenses-paid seminars. Nor was it the defence of GE from oily bureaucrats and corrupt ministers like Sharad Pawar. This was the story that affected their small lives and smaller farms. Of their fragile economics. And the way Bt cotton had poisoned their future.

It is important that the world reads these simple, frugal and touching stories in the very words of the farmers. And the learned observations of the panel of judges. And comes to its own conclusion.

The sooner these conclusions turn against the Machiavellian, brutal and predatory regimes being brought on the farmers and consumers of this country by the Genetic Engineering industry, and helps all of us to say NO GMO, the humankind will heave a sigh of relief.

**P V Satheesh**  
National Convenor  
Southern Action on Genetic Engineering

Hyderabad  
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## *Personal Stories from*



1. **Mrs Ankathi Rajamani**, Warangal District, AP

2. **Mrs Bandi Sulochana**, Warangal District, AP



3. **Mr Karny Shankar**, Warangal District, AP

4. **Mrs K Bhagyalakshmi**, Warangal District, AP



5. **Mrs Sappani Ponnuthayee**, Tirunalveli District, Tamil Nadu





6. **Mr Mathiyalagan**, Dharmapuri District, Tamil Nadu



7. **Mr Mallanagowda Patil**, Belgaum District, Karnataka



8. **Mr C Manjunatha**, Bellary District, Karnataka



9. **Mr Vrushabhendrappa**, Mysore District, Karnataka



10. **Mr Lingaraj Navali**, Koppal District, Karnataka



11. **Mr Ugranarasimhe Gowda**, Mandya District, Karnataka





## Mrs. Ankathi Rajamani

Malkapeta village in Athmakur Mandal  
Warangal District, Andhra Pradesh



### Who is Ankathi Rajamani?

Ankathi Rajamani is from Malkapeta village in Athmakur Mandal from Warangal District of Andhra Pradesh. She owns a three acre piece of land which is of Cotton black soil. She cultivates Paddy in very small area that's about 20 guntas [half an acre] under tank water. In 2.5 acres she has been cultivating cotton for the last 10 years.

She and her husband Sambaiah both are farmers and they have three children, Elder daughter Shirisha has passed her SSC but is forced to sit at home since she cannot continue her studies due to financial problems. The younger daughter Madhavi is in class 8 and the son in class 5.

### What is her story with Bt Cotton?

I am growing cotton for the last 10 years and since 6 years I started BT cotton. The dealer from where I used to purchase cotton seed, fertilizer and pesticides on credit introduced me to the BT cotton telling me that Bt does not require sprays and gives high yields.

She made a decision to buy and cultivate Bt believing the words of dealer. The first year the plant was in good height and full of branches. But as years progressed the plant size decreased, today the plant height is so low that she can sit and pick the cotton ball. She also observed many pests on cotton, contrary to the dealer's words that BT does not require pesticides (*PINDI NALLI*, *DOMA*, *MUDUTHA*, and *THENE BANKA*) Her yield decreased and expenditure increased year by year, 5 years back her profit was 15,000 rupees and this year her loss is 20,000 rupees

In addition to these problems picking cotton resulted in skin rashes, itching and sometimes reeling sensation etc., on consultation the doctor advised her wear full hand shirts while picking the cotton. This became double edged problem as laborers are not interested to pick up cotton and sometimes they demanded additional money to see the Doctor. She was also further puzzled by animal deaths due to grazing in her fields. Four sheep died after few days of grazing in her field. Neither the dealer nor the Company for which he sells never paid any compensation to her.

The new technology landed her in huge debts, as her cost on seed, fertilizer, pesticides and health increased enormously. Though she desperately wants to get back to non Bt cotton, the seed is not available. She concludes that it is worth working as daily wage laborer than doing this agriculture.

She submits that, BT. Cotton has taken away her seed and made her dependent on dealer much more and created health problems to plants, soil, and animals and to humans. The government should take an urgent decision to BAN the BT cotton and start supplying non Bt cotton seed through government agencies, otherwise survival of farmers like Rajamani as farmer will be a big question





## Mrs. Bandi Sulochana

Malakpeta village, Athmakur Mandal,  
Warangal District, Andhra Pradesh



### Sulochana's Story

Sulochana is a farmer from Malakpeta village of Athmakur mandal, Warangal district of Andhra Pradesh. She has two acres of Black cotton land and leases in another acre of red soil. Since 20 years she is cultivating rain fed cotton farming. For the last six years she is cultivating Bt cotton and since two years started non Bt cotton in half an acre of land.

Sulochana is married to Ilaiah and has one daughter [17 yrs] who is physically and mentally challenged. She has two sons one studying Intermediate and another Class IX.

### Sulochana's encounter with Bt Cotton

The ADITHI people[a seed company] told me there will be less input cost and more yield if I buy Bt. Seeds. I bought Bt. Cotton seed from a fertilizer shop in Warangal. The Bt cotton plant height shrunk during the last 5 years and this year it was very short in height. When there was heavy rain the plant looked as if it is dead and collapses. I spend RS600 to 800 per ac per spray. I do this at least 12 to 13 times.

I buy two packets of seed @ 750/ packet. Even at the germination seed I suffer heavy loss since germination is only 50%. This year germination was very irregular and germinated at different times

The shop owner told me not to spray during the first month of the crop. But I observed that many pests such as DOLLA (Unformed Ball), MUDUTHA (Leaf Curl), PENU BANKA (Aphids) started [attacking my crops] during the first month.

Initially good flowering and fruiting but they started collapsing. I took flowers and fruits to shop owner he advised new pesticides, I bought them and sprayed for few days they seem to be recovered and healthy but slowly entire plant collapsed

A pregnant cow grazed my Bt cotton field and became sick and died within 15 days. The owner of the cow Mr. K Ramesh tried several treatments including at the Government veterinary hospital. But the cow died. He wanted to file a police case against me but village elders mediated in between us.

I have no money to pay my own debt nor can I compensate the death of cow. I am miserable. Please stop Bt cotton seed and supply us Non Bt seed.

My Bt cotton yields have decreased year by year: I was advised to apply potash to blot or bulge the fruit, but no use.

My yields were: Year I : 12 qtls; Year II: 10 qtls; Year III: 8 qtls; Year IV: 6 qtls; Year V: 3 qtls.





## Mr. Karny Shankar

Anantharam village, Parvathagiri Mandal  
Warangal district of Andhra Pradesh



### Who is Karny Shankar

Mr Karny Shankar is from Anantharam village, Parvathagiri Mandal in Warangal district of Andhra Pradesh. He has five acres of Kushki [red] soiled land and cultivates Paddy under open well in one acre.

Shankar's wife's name is Venkata Laxmi. They have a son called Rupesh who is doing MBA and their daughters Hemalatha and Bhavani are studying Intervediate and graduation.

### Shankar and Bt Cotton

I used to cultivate Maize, Green gram, Sesame, Groundnut, Cowpea, Red gram. I was practicing crop rotation and mixed cropping. Then I shifted to cotton cultivation with Ganesh and Hima varieties which are Non Bt. Varieties.

Later I switched over to Bt. cotton. I was told that my hard work will be reduced and I will have more gains. Big advertisements made me to believe in Bt cotton. I planted Castor and Marigold [in my cotton field] as trap crop. In the first year there was no hard work and the worms died immediately after eating the crop.

I purchased 450 gms of Bt. and 120 gms of Non Bt. Pachapurugu [Bollworm] grows on Non Bt cotton and shifts to Bt plants and are supposed to die as soon as they eat Bt cotton. But they survived. I used so many sprays of pesticides but no use. I also observed Pindi nalli (Mealy Bug) on Bt.

First year I got 8 quintals per acre but this year I got only 3.5 quintals per acre. I invest Rs.6000/- on pesticides per acre and Rs.750/- on seed per acre. Year by year the height of the plants completely decreased. They became dwarf and fruits can be numbered as 6 to 10 [per plant]. [There is] No chance of second crop in Bt. cotton today. Bt doesn't withstand heavy rains, Plant density is also less, High pest attack, Foliage and height of the plant is shrinking. All my hopes are lost. Today my preference is Non Bt. cotton; please help me to get Non Bt. cotton seed.





## Mrs. K Bhagya lakshmi

Anantharam village, Parvathagiri Mandal  
Warangal district of Andhra Pradesh



### Who is Ms Karny Bhagya Lakshmi

Bhagya Lakshmi is from Anantharam village, Parvathagiri Mandal in Warangal district of Andhra Pradesh. She owns two acres of land which is Red soil; Bhagyalakshmi's husband Sambaiah have two daughters. One of them is in B.Com final year, studying in Government Degree College in Warangal

### How Bhagyalakshmi disengaged from Bt Cotton?

I was a Bt cotton farmer for 5 years and due to huge loss I sold one acre land to repayed my debt. I started non Bt cotton cultivation about 3 years ago. Today I am happy as there is no debt only profit.

One border of my farm is adjuacent to a Bt cotton farm. The border rows were affected and turned to red in color, I sprayed tobacco decoction and the plants recovered. Though I do not grow Bt Cotton I am victim to its ill effects as my neighbors grow Bt. Cotton crop.

In my farm I also sow red gram and cowpea in between cotton and white jowar as border crop. The pest gets first attracted to these crops and my cotton is saved. I also sow castor here and there as trap crop.

This year I harvested 34 bags of cotton, about 16 Qtls from my two acres and my total expenditure is 30,000 and from sale of cotton I am expecting 40,000-/-

I have harvested 10 Kgs each of Red gram cow pea and sorghum.

I am member of NavJyothi sangam which helps me in getting Non Bt seed and trains us in good sustainable agriculture practices.





## **Mrs Sappani Ponnuthayee**

Aattuvazhi, Vasudevanallur Panchayat,  
Sivagiri Taluk, Tirunelveli district, Tamil Nadu.



### **Who is Mrs Sappani Ponnuthayee**

Ponnuthayee is a farmer from Aattuvazhi, Vasudevanallur panchayat, Sivagiri Taluk of Tirunelveli district in Tamil Nadu.

### **Bt Cotton and Ponnuthayee**

In 2005, we came to know that a new variety of cotton seeds were available in the market and hence we approached the seed sellers in our area and enquired the salient features of the new variety of cotton. At that time, we were told that this variety will help cotton farmers in 3 areas. That is,

- \* Requires less seed quantity (per acre ½ Kg)
- \* Gives more yield (12 quintals per acres)
- \* The pest attack will be very less and thereby use of pesticide will come down.

Against this promise we have found that we need to weed more and application of pesticides is more than the normal times. After the boll formation we expected good yield. Unfortunately, the bolls formed in the plants remained as bolls only and did not burst and release the cotton. That time, we cultivated cotton in 3½ acres with the new variety and spent more than Rs.35,000/-. Finally, we were able to get just 4 Quintals of cotton from the 3½ acres. It was a heavy loss for us.





## Mr Mathiyalagan

Poompatti Village, Aroor block  
Dharmapuri District, Tamil Nadu



### Who is Mr Mathiyalagan

Mr Mathiyalagan is a cotton farmer for more than 10 years. He is from a village called Poompatti situated in Aroor block of Dharmapuri district, Tamil Nadu.

### Bt Cotton enters Mathiyalagan's farm

About four years back, Bt cotton was introduced in our area. I also started to cultivate Bt cotton because of the following promises made by the seed company.

- \* No need for any pesticide application in Cotton
- \* The yield will increase.
- \* Reduction of input cost.

At that time our normal cotton yield per acre was between 6-8 quintals. The yield promise made to me was between 12- 15 quintals. At the very beginning, I noticed the difference in seed cost. A packet of 450grams cotton along with 50grams of refugia seed was sold to us for Rs. 750 which was three times higher than our normal cotton seed cost.

The actual problem started with abnormal changes in soil. I am able to notice it. In the normal practice of cotton I apply basal fertilizer for one time and top dressing for 2 times. With Bt cotton after the application of 1 top dressing the plant responded very well. But it was only for 10 days. After 10 days, the cotton plant started to appear very weak and asked me to give another dose of fertilizer. Then I gave fertilizer for 2nd time. This time also I noticed the same response from my cotton plant. This is how I started to give fertilizer at least for once in 5 days and it increased my input cost very much. Similarly, my pesticide application also increased day by day and I had to apply pesticide for every 15 days. Totally I spend Rs.13,000 to Rs. 15000 for one acre of Bt Cotton while I normally spend around Rs.6000 to Rs. 8,000 with the normal cotton. I also noticed the disappearance of spider webs, dragon flies, and butterflies and wash which are normally found abundant in my field.

It was a total crop failure. Many farmers in our area experienced the same. We raised the issue at the Farmer's Grievance day and brought to the notice of District collector, agriculture department. A section of farmers got compensation of Rs. 2500-3500 per acre and another section of farmers were unable to get the compensation. We demanded the availability of non-Bt cotton seeds to our farmers.





## Mr Mallanagowda Patil

Yelimunnoli vllage, Hukkeri Taluka,  
Belgaum District, Karnataka



### Bt Cotton in Patil's Farm

Bt cotton entered in our area in 2002. First year I got an yield of up to 10 quintals/acre. In the subsequent years yield decreased and it is now difficult to get even 2-3 quintals..

### Low birth rate in Sheep and Goat

Sheep rearing has been predominant in our village from time immemorial. Sheep normally gives birth to two kids in a year and in the case of goat it is more. In the last eight years it has reduced drastically and now a sheep gives birth to only one kid in a year. I attribute this change to none other than Bt cotton.

In the same manner the cattle which are fed with Bt cotton cake have developed serious reproductive problems. They are unable to conceive and if conceived miscarriage rate is very high.

### New Diseases

Many new diseases including skin allergies and throat swelling (something similar to goiter) have been rampant in cattle for the last 8 years. Veterinary Doctors are not able to identify them and but I attribute this to Bt Cotton. 70% of the cattle population been affected and dying.

### Disappearance of all other seeds

I do not get any non Bt seeds in the market. Government has stopped distributing all cotton hybrid seeds.

### Plight of Organic Farmers

Surrounded by Bt cotton field, I as organic farmer am not able to maintain the organic status of my field.

### Affecting Human reproductive system

Sterility in men and women has increased in the last 8 years. A medical store in our area shows that a particular medicine which is supposed to vitalize the human virility has been sold 70% more in the past 8 years.

A special medicine prepared out of root of cotton plant used to be given to lactating mothers to enhance their breast milk. With Bt cotton this is no more possible. Ban the Bt cotton





## Mr C Manjunatha

Doopadahalli Village, Kudlagi Taluk,  
Bellary District, Karnataka



### Why did he stop growing Bt Cotton?

I am a small farmer from the rainfed region of Bellary district.  
I grew Bt Cotton for three years and stopped growing it. Reasons are:

#### Affecting Mixed Cropping System

1. I grow a number of mixed crops in cotton. But several crops sown with Bt cotton do not yield at all..
2. I follow crop rotation. The field in which Bt cotton is grown does not yield any crop in the next year. Many of our fields have reached a stage of inability to grow any crop.

#### Expensive Seed

In my life time I have not come across such an expensive cotton seed. In the beginning years they use to sell Bollgard- I for Rs. 750/- for 450 grams packet. It disappeared by 3rd year and they started selling Bollgard -II for Rs.950/- for 450 grams.

#### Cost of Production

They said I need not spray any pesticide as Bt cotton won't be affected by bollworm. But I had to spray more pesticide for sucking pests and pink boll worm.

#### Fodder

Our livestock- sheep, goat and cows graze the refuse of cotton plant. It is found that after grazing in the Bt cotton field for 8 -10 days cattle develop toxicity.

#### Human Health

Bt cotton picking is a nightmare for farmers(women do the majority of picking) as coming in contact with Bt cotton plants is leading to serious skin diseases, especially skin allergies. Nausea and head ache are common.

#### Affecting food security

Normally in our farming, after men sow the main crop women would sow a number of mixed crops essential for the family. That has been taking care of the food security of the family. At the outset, men do not allow women to sow any other crop in the Bt cotton field as they have spent huge amount on the Bt cotton seed and do not want the production to be affected. Secondly any mixed crops sown along with Bt cotton does not flourish. This is badly affecting the food security of the family.

#### KSSC not distributing non Bt seeds

Karnataka State Seed Corporation through Raitu Seva Kendras used to distribute the cotton seeds. But for the last three years it has stopped distributing all the good varieties of hybrid seeds like DCH-32, NH44 etc. and made us to buy only Bt cotton seeds.

Relation between farmer and the shepherd is lost

We have a age old practice of penning the herds in our fields .Sheep herds used to feed on our farms after harvesting as they manure our fields. But now shepherds are scared to bring their herds to Bt cotton fields. We as farmers are at great loss as we lose the precious organic manure

Please bring back our cotton seeds





## Mr Vrushabendrappa

Kuratti Village, Gundlupet Taluk,  
Mysore District, Karnataka



Mr Vrushabhendrappa is from Kuratti Village of Gundlupet Taluk in Mysore District.

### Vrushabhendrappa's Cotton Saga

I am an organic farmer for the last six years. A group of us, 600 small farmers have been growing and selling organically grown cotton. But most of us have lost organic certification as our cotton has been getting contaminated with Bt cotton from the neighboring field. I do not know what to do? My field is surrounded by Bt cotton fields. It is contaminating not only my cotton but also other crops. I am in distress.

### Fodder scarcity

Other crops do not flourish in Bt cotton field. Our major crop in rabi is horsegram. But there has been no grain formation in horsegram grown in the Bt cotton field. This has led to major fodder crises. With horsegram scarcity I am forced to buy other fodder at a very high price.

In the same way castor, which I used to grow in abundance has been affected badly. After this experience many farmers are giving up Bt cotton.

I need our non Bt cotton seeds back and I do anything to bring them back.





## Mr Navali Lingaraj

Navali Village, Gangavati Taluk,  
Koppal District, Karnataka



Navali Lingaraj is from Navali Village in Gangavati Taluk of Koppal District.

Bt Cotton came to our area in 2002 it self. Though tempted by the high yield, I and the farmers of Navali and surrounding villages resisted [planting Bt cotton] because we had an extraordinary cotton variety called Pandarapur cotton. Special features of Pandarapur cotton are:

### Bt Enters Navali

1. It is the traditional variety grown from time immemorial.
2. High capacity to withstand moisture stress.
3. Easy to pick. Farmers compare its softness to butter.
4. Could be sown even in dry soil and it could withstand dryness for nearly a month.
5. Wonderful fodder, to the extent that shepherds used to give away one calf to farmer for allowing them to graze their sheep.
6. It yields a minimum of five quintals along with 8-10 mixed crops.

I resisted for seven full years but last year they increased cotton price by two fold. This farmers were not able to resist and many of them took to Bt cotton. In the first year it has yielded better than our Pandarapura as a single crop. Tempted by this many more farmers are taking to Bt cotton this year.

This is the story of death of an extraordinary local cotton variety.





## Mr Ugranarasimhe Gowda

M. Sanaba Village, Pandavapura Tq.,  
Mandya Dist, Karnataka.



Ugranarasimhe Gowda is from M. Sanaba Village in Pandavapura Tq., Mandya Dist of Karnataka. He has a farming experience since he was of the age of eight.

### Ugra's Plea

I am 46 years old. Running a chemicals free food products centre at Mysore, called Jivamrutha to propagate Natural Farming among my fellow farming community since last 5 years.

I have seen that earlier DCH 32 seeds of cotton was supplied by Karnataka Seed Corporation. After a decline started in its yield farmers urged for quality seeds and the staff showed their helplessness. By that time the private seed shops opened. Farmers started to buy in these shops as there was no alternative. When this is the fate of Bt cotton what about the Bt Brinjal which is commonly used throughout the country

I plead before the Judiciary of our nation to give a serious alteration on this issue which causes damage to the soil, animals & humans and also on the livestock, future of agriculture and native seeds.





## What were the **Learned Judges' Observation** on farmers statements on their **Bt Cotton experience?**



At the end of the testimonies from farmers, scientists and other experts, the panel of four judges which included the Chief Justice, Orissa High Court Mr Justice Gopal Gowda, Mr Justice Goda Raghuram Senior Judge from AP High Court. Mr Justice Thottathil B Radhakrishna from Kerala High Court and Mr Anand Byra Reddy from Karnataka High Court, had this to say.

The judges repeatedly stressed that they were neither delivering a judgement nor were they giving their views but were recording their observations on what they had heard. On its own, the observations are an eye opener.





## EMERGING JURISPRUDENCE OF GENETIC ENGINEERING FOOD, FARMING AND BIO-SAFETY

### OBSERVATIONS FROM THE PANEL OF JUDGES



On the basis of the submissions made by the farmers of Andhra Pradesh, Tamil Nadu and Karnataka and the experts relating to their experience in the farming of BT Cotton, the following facts and observations emerged:

1. The BT cotton seeds were introduced by holding out that product as one that would provide tremendous growth in the agricultural produce and also as one with exceptional resistance to pests, thereby reducing the requirement of pesticides,





but an actual practice it was found that except for an initial boost in production for one or two years, there was consistent failure in the subsequent years.

2. Though the BT cotton seeds were sold to the farmers by making them believe that no pesticides would be required to be used in the cultivation of BT cotton, it turned out to be false in actual experience.
3. At least in some areas, BT cotton was clandestinely introduced by passing them off under some other name, which fraud was noticed by the farmers, only when their sufferings were similar to those relatable to farming using BT cotton seeds. This means that the farmers were duped into cultivating BT cotton without proper information being given to them as regards the identity and quality of the cotton seeds that were provided.
4. The cost of BT cotton seeds are manifold when compared to traditional seeds and this has a greater adverse financial impact on loss .In their anxiety for larger returns on the basis of the professed output, cultivation of BT cotton, farmers took up that by spending huge amounts raised by way of loans and became liable to return such loans with interest, though they lost in the bargain. The governmental support in such situation was also meagre, even where there was some effort to provide some compensation. There are also instances where the amount of compensation that was originally offered by the government as a package following public demand on the behalf of the farmers was reduced at payment, from what was initially offered.
5. In the cultivation of BT cotton, it is found that there was large scale loss of crop,



compared to what was impressed upon the farmers by the suppliers of the seeds. In good number of farms, a huge amount of pods did not mature appropriately and break open naturally, which is absolutely necessary to for appropriate crop and yield. There were also instances where even before the pods matured, the leaves of the





BT cotton plants started drying and the plants dying off without providing any yield.

6. In actual farming, it is found that the cultivation of BT cotton adversely affected the cultivation of traditional cotton. This is not only because the farmers readily bought the idea of higher returns from BT cotton and

ultimately failed, but also by the fact that cultivation of BT cotton for a couple of years eroded the soil conditions including fertility, thereby retarding the process of a return to cultivation employing traditional seeds. Such lands also became relatively poor farms for other cultivations.

7. The cultivation of BT cotton including through the stage of cropping the pods, led to adverse health conditions for the farmers. Even farm-workers refused to do the operations. Commencing from severe irritations and other external manifestations of skin diseases, there were cases of bronchial and other allied health problems. Skin conditions which were, literally, non-healing, were experienced by the womenfolk, who are predominantly engaged in the harvesting activities.

8. There was also loss of cattle. The traditional cotton plants and leaves provide fodder. There are also areas where cattle growers used even offer a goat or so in return for an opportunity for their cattle to graze on cotton farms. But when cattle consume the leaves of BT cotton plants, the generated grave health situations leading also to death of the animals. Diarrhoea and even diseases which the veterinarians could not diagnose led to loss of cattle. It was also noticed that there

was growth in the mortality rate, abortion rate, in fertility rate and such other situations in the cattle, which would've had the opportunity to graze, or were provided BT cotton plant leaves for consumption. Productivity of cattle decreased.





Now, cattle have unidentifiable health challenges. Apart from the financial and other implications of such loss, among farming communities, such situations also lead to disharmony in the neighbourhood.

9. Though it was originally propagated that cotton is not for food, now

it is food, at least in the form of oil and cake. This is used not only for feeding cattle but also indirectly applied for human consumption. Consumption of cotton products, at least as secondary consumption, is not excluded from human food. In some parts, there is an Ayurvedic medicine prepared utilising extracts of the roots of cotton plants. This is prescribed and used by lactating mothers and also for improving the milk output of cattle. If BT cotton roots are available, one does not have any control of whether the BT cotton root extract would go into the process of making any such medicine.

10. Even when the farmers chose to do away with cultivation of BT cotton and return to either cultivation of traditional cotton or other cultivations, including sugar cane, sunflower, rice, vegetables, pulses etc, the adverse soil conditions arising out of BT cotton cultivation retarded the process and led to requirement of heavy costs to rejuvenate the soil fertility.

11. It was also noticed that attack of pests increase on traditional forms whenever there is BT cotton cultivation the neighbourhood.





12. BT cotton cultivation is found to have had an adverse impact on the underground water. There's a large amount of depletion of underground water sources.
13. On facts, it is pointed out by the scientists by way of intervening submission, that even though the State of Kerala has not permitted any form of BT cotton or other GM product cultivation in that State, the experience was that there was clandestine cultivation of BT cotton in an area of around 400 acres by duping the farmers and passing off BT cotton seeds, without disclosing their identity, but only canvassing that they would give abundant return by way of crop and also that the cultivation would require no pesticides. Suppression of information leading to such fraud on the farmers and the society at large, is also thus disclosed, it is stated.
14. The Kerala experience by way of observation by the farmers, provide a formidable scientific input, that is to say, even the wild boars were not interested in coming near or consuming the BT cotton plants though they would normally destroy cotton or other cultivation. This is a pointer to the fact of the non-consumable nature of the cotton plants including their leaves and the possibility of health hazards for the cattle on consumption of such materials, as spoken to, by way of experience and also reasonable apprehension, by the farmers from the three States.
15. In one part of Karnataka, excellent local varieties of traditional seeds were available, which, with the introduction of BT cotton, is essentially lost. The non-availability of traditional cotton seeds is a great challenge. The fact remains that even the government or agencies do not take up the issue and provide traditional seeds to support the farmers.

