

Failure of Bt. Cotton during Khariff 2013 in Haveri & Davanageri Districts, Karnataka.

Report from a Rapid Assessment team



Bt Cotton failure- Fact Finding report: November 2013

Fact Finding Team members

1. Dr. H R Prakash, Retd Deputy Director, Karnataka State Agriculture Department, Bangalore.
2. Manjunatha Holalu , Co convenor Coalition for GM Free Karnataka, Haveri.
3. T M Muniyappa, President, Davanageri Karnataka Rajya Raith Sangha,
Davanageri .
4. Shivayogi Makari , Secretary, Desi Krushikara Balaga, Haveri.
5. Channa Basappa Kombli, President, Desi Krushikara Balaga, Haveri.
6. Hosamani N C , Cotton Growers, Shiggoan
7. P Srinivas Vasu Co convenor Coalition for GM Free Karnataka, Bangalore.
8. K N Anjaneya, President, Sarana Muddanna Savayava Krushikara Balaga, Davanageri.
9. K Maheshwarappa , Vice-President, Davanageri Karnataka Rajya Raith Sangha, Danvanageri.

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Back ground

Bt Cotton [insect resistant Genetically Modified (GM) cotton] is often portrayed as that technological revolution in Indian cotton cultivation which changed the cotton scenario in India and pushed it to higher yields to make India the second largest producer of Cotton in the world. But various studies, including a 10 year review of Bt.cotton by the Central Institute of Cotton Research (CICR), released as an FAQ last year, shows that the yield increase due to Bt. cotton is a myth and substantial yield increases had happened in the years before Bt cotton was adopted in a reasonably big area. Besides the yield issue there has been reported studies, including the CICR one, which has showed an increase in secondary pest attacks which is leading to increased usage of pesticides. There are also reports, including a scientific study published by scientists from University of Agriculture, Raichur, who pointed to the increased resistance in boll worm in Karnataka against both single and double gene Bt. cotton. All this when collectively viewed, leaves a picture of a technology which is their only for the profit of its developers and not its primary users, the cotton farmer in India.

Bt Cotton was officially allowed for commercial cultivation in Karnataka in 2002 when the regulatory body in the Government of India – Genetic Engineering Approval Committee (GEAC) allowed three Bt Cotton hybrids belonging to Mahyco with proprietary genes from Monsanto to be commercialized in the South and Central zones of cotton cultivation in India. While there continues to be a hype around Bt cotton created by the seed industry and ably supported by the public sector agriculture science institutions as well as the agriculture department, both at the centre and state level, govt records show that the experiences with Bt cotton in the state has been a mixed bag. Meanwhile, a 2-year survey of performance of Bt Cotton hybrids in South India by Central Institute of Cotton Research (“Evaluation of Bt Cotton hybrids in South India” - Note sent by Mr Anupam Barik, Director, Kapas Vikas Nideshalaya, Directorate of Cotton Development, Govt of India, F.NO.D-3-14/09TMC/719, to Directors of Agriculture in Tamil Nadu, Andhra Pradesh and Karnataka on CICR's 2-year evaluation study on Bt Cotton hybrids on the basis of their yield performances in the South Zone) which brought out ground level data from Dharwad, Guntur and Coimbatore had the following results to share about Dharwad:

- The average lint yield (kgs per hectare) of 52 Bt Cotton hybrids in the zone was 526.79 kilos per hectare
- The average lint yield of non-Bt cotton hybrids like DHH 11, Bunny etc., was 622 kilos per

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hectare.

- 44 of the Bt Cotton hybrids (out of 52) had lower yields than the average yield of non-Bt Cotton hybrids as per the findings here

Increased input usage and costs, changing pest complexes leading to increased usage of chemical pesticides and instances of Bollworm, the target of Bt toxin in the Bt cotton all have been witnessed in Karnataka all through the 11 year history of Bt cotton in the state.

Objective of the study

This report by the Fact Finding Mission of GM Free Karnataka coalition relates to the failure of Bt. Cotton Crop in nearly 18 thousand hectares in Haveri and Davanageri districts of Karnataka during Khariff 2013 season starting from 1st week of May 2013 to 2nd week of July 2013. The fact finding was initiated following the appearance of various media reports on Bt cotton failure in the cotton growing districts of central Karnataka. Given that farmers in general and cotton farmers in particular in the state have been under distress due to various factors, we found it imperative to take a closer look at what was unfurling in the cotton belt in the Karnataka. During fact finding process, committee met with Bt. cotton growers, organic cotton farmers, seed merchants, Agriculture scientists and bureaucrats from agriculture department in affected areas. The imminent task was to understand the realities on ground on the issue of large scale failure of Bt cotton in the state this Khariff and to propose relevant recommendations to our state govt so as to help the farmers in this distress situation as well as to ensure that further occurrences of this situation could be avoided.

Area covered by the study

Visited following areas of Davanageri and Haveri District of Karnataka State is located 340 to 380 km north of Bangalore. Those are the prominent districts in Karnataka where Cotton is grown extensively. Rapid assessment team met and spoke with Bt cotton farmers in Hanumanamatti, Ranebennur, Davanageri, Menasinahala, Channagiri and Komaranahalli. Organic farmers were interviewed in Koonabevu. We also had long interactions with seed merchant in Ranebennur, Agriculture officer (JDA/ADA) in Haveri and Davanageri besides scientists from the KVK at Hanumanamatti.

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Agro-climatic condition of the study area

Davanagere is predominantly an agriculture district and cultivable land is the backbone of its economy. Since the district covers the total geographical area of 597597 hectares and the average extent of land available per capita is 0.33 hectares. According to the latest land utilization statistics, out of the total geographical area 64 per cent is the net area sown. According to the 2005-06 agricultural censuses the small and marginal farmers account for 76 per cent of the total land holdings with only 42 per cent of the total area. On the other hand farmers owning more than 2 hectares of land account for 27 per cent of the total land holdings with major portion of the area of 58 per cent. It belongs to **Northern Dry Zone and Central Dry Zone**. The following talukas are falling under this Zone are Harapanahalli, Jagalur, Harihara, Davanageri Channagiri, Honnali. The main crops are cotton, paddy, sugarcane and Maize.

Haveri district is a newly formed district comprising 7 talukas viz, Haveri, Byadagi, Hanagal, Hirekerur, Ranebennur, Savanur and Shiggoan. It comprises 2 agro- climatic zones based on soil and climatic conditions, namely **Northern Transitional Zone and Hilly Zone**. The district has the total geographical area of 4, 85,058 ha with cultivable area of 3, 47,540 ha. The major crops of this district are Paddy, Sorghum, Hy Maize, Hy. Cotton, Ground nut, Chilli, Finger millet, Pulses etc., and the Rabi crops being Rabi Sorghum, R. Cotton, Safflower and Sunflower etc. It comprises of around 65% of Red soil area with normal annual rainfall of 706 mm. covering 6 talukas namely Haveri, Byadagi, Hirekerur, Ranebennur, Savanur and Shiggoan. This being the assured rainfall zone having major Khariff area of about 2, 42,570 ha. Hanagal taluk comes under this zone with normal annual rainfall 1022 mm. around 75% of Khariff area is covered by rain fed Paddy. In low lying areas wherever there is residual moisture farmers take up (around 20% area) short duration crops like pulses after harvesting Khariff Paddy. But due to drought experienced in the last 3 years there has been a shift in cropping pattern and almost the major paddy area has been diverted to Maize, Sorghum and Cotton etc. There are a few farmers' in the region who cultivate non Bt cotton hybrids and desi varieties like Sahana, Abhaditha, Sannahatti, Doddahatti, Jayadhara, Varalaxmi, DCH 32, Pandarapura, Shri laxmi, Orrisa Desi Cotton, Rosa and Ramachandrapuram which is mostly done under organic farming practices.

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The Cotton seed Situation

There are 25 different brands of Bt cotton hybrids that are being grown in the 2 districts. Of this Bt Kanaka variety of Mahyco, with stacked genes from Monsanto, covers close to 50% of the sown cotton area. Bt Kanaka variety is also the worst affected from Mirid bug attack with almost the entire crop not bearing bolls. There has been losses in other Bt cotton varieties also from mirid bug and other sucking pest attacks. It is shocking to see that the agriculture department and the university failed to warn the farmers about the susceptibility of the Bt Kanaka variety to mirid bugs, even after repeated findings by the UAS Dharwad¹ as well as CICR scientists that the central Karnataka districts like Haveri and Dharwad have been severely affected by mirid bug attack and the MRC 7351(Bt Kanaka) is highly susceptible².

It is nothing but criminal that instead of advising farmers on the potential risk with using Bt cotton hybrids, especially highly susceptible varieties like Bt Kanaka the agriculture department organised distribution of Bt kanaka seeds in these districts.

There is also the issue of lack of oversight by the agriculture department officials in stopping black marketing of Bt cotton seeds.. While the actual price of Bt cotton seeds were around 930/- seeds were being sold in the black market from anywhere between 1300/- to 1500/- per packet, almost 60% more price than the MRP. There is also no mechanism like the Grow out Test (GOT) that needs to be performed to identify whether spurious seeds are also being sold to the farmer.

Extensive Pesticide usage in cotton continues

Although there is much hype of reduction in pesticide usage after Bt cotton commercialisation the reality on ground seems different. Farmers in Haveri and Davanagere continue to use various kinds of pesticides at different stages of the cotton crop. The main pesticides used were Confider-200 SL, monocrotophos-36 SL, Asifate, Dicofol, Asitamifrida (LIFT)-20 SP, Imidacloprid-200 SL and Pipronil. The Bt cotton farmers from Menasinahala village of Ranebennur Taluk confirmed that at least 5-6 sprays of pesticides have already been done on all kinds of Bt cotton varieties. The average pesticide cost in the both the district by Bt. Cotton farmers is Rs. 3500 to Rs. 5000 told by Menasinahala farmers and Kumaranahalli farmers' to the study team. Basappa SannaNingappa Adivera and P H Kurubar of Menasinahalla, Haveri District farmers having 4.17 and 5.20 acres Bt.

1 <http://14.139.155.167/test5/index.php/kjas/article/viewFile/1563/2420>

2 http://www.icac.org/tis/regional_networks/documents/asian/papers/udikeri.pdf

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Kanaka cotton plot with 180 day olds crops informed the team that they have spend around Rs. 15,000 and Rs. 19000 respectively this season on pesticides for their Bt cotton.

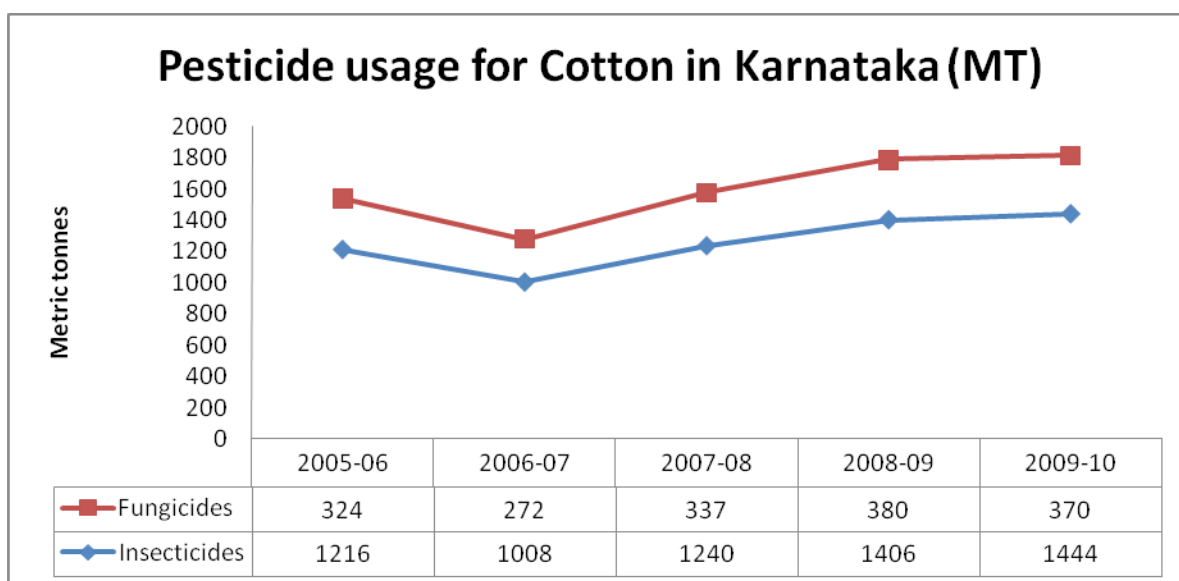


Table shows that there is gradual increase in insecticide consumption from 1216 metric tonnes to 1444 metric tonnes during 2005-06 to 2009-10 respectively for cotton in Karnataka. Further, studies show that the cotton mirid bug *Creontiades biseratense* (Distant) is an emerging insect pest on Bt cotton in Karnataka causing heavy shedding of squares and bolls which lead to significant reduction in cotton yield. Results of a systemic study undertaken during 2008-09 on the population level of the bug covering 7 districts, 22 taluks and 88 villages as well as other reports showed that the mirid bug, *Creontiades biseratense* could be considered as an emerging threat to cotton cultivation in the state which is appearing regularly and damaging squares/bolls heavily. In 2010, a study was published by scientists from UAS-Raichur showing that bollworms survived Bt cotton hybrids (both single and double gene) in experimental plots of UAS Raichur. Thus cotton farmers in the region seems to be facing double trouble with increased attack of sucking pests like Mirid bug as well as emerging resistance to Bt toxin by the Bollworm.

It is also important to remember that CICR study on emerging sucking pest issue in cotton in India published in 2009 had also recommended that natural formulations like neem oil and other herbal formulation performed well in management of the sucking pests and should be used considering their ecological safety³.

3 <http://tmc.cicr.org.in/pdf/3.1-07-08.pdf>

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Details of production cost of Bt. Cotton in study area (per acre basis)

The average cost of cultivation per acre for rain fed Bt cotton farmers, who form the majority in the study area was found to be between 40,000/- to 50,000/-. With massive crop failures the farmers have been pushed into the brink.

Non Bt-Organic cotton farmers survive the pest onslaught

It is also noteworthy here that the fact finding team found that those farmers who grew desi cotton varieties under organic practices were not affected by the Mirid bug and other sucking pests. It is interesting to note that officials of the state agriculture department informed us that performance of Bt and non Bt cotton seemed to be the same on ground. The team visited villages of Menasinahala, Koonabevu and Komaranahalli and had intensive discussion with cotton growers (both organic cotton and Bt cotton growers). Data on number of bolls, height of the plant, number of harvested bolls and number squares from each field were also collected. The details are as follows.

Parameter	Ht of the Plant in CM	No. of harvested bolls	No. of bolls in the plant	No. of Squares in the plant
Bt Cotton (Kanaka variety)	148.66	0	6.53	43
Sahana (Desi cotton variety)	132	30	9.2	31.4

Chandrasekhar Patil from Koonabevu, one of the organic farmers that the fact finding team spoke with told us that he used SAHANA, a non-Bt cotton seed variety, which he sourced from DESI KRUSHIKARA SANGHA. He said that cotton plot infected with mealy bugs, even study team noticed the same during field visit. SAHANA cotton growers proudly said that, “already harvested four quintals of cotton and I may get another two quintals of cotton, moreover I practiced completely in organic way. I saved money because not using external inputs like Pesticides, fertilizers and seeds; I sold entire cotton in the open market”.

Failure of Agriculture department and Agriculture University

The fact finding team feels that there is a massive failure of the extension system as well as the seed regulation at the ground level that has exacerbated the situation. From the interactions with

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JDA/ADA of the state Agriculture Department as well as the scientists from KVK it was amply clear that neither had a clear understanding on ground situation.

On the one hand early warnings from the scientists of CICR as well as UAS Dharwad on mirid bug threat has been overlooked by the Agriculture department and on the other the agriculture department officials alleged that the package of practices that UAS Dharwad had brought on cotton cultivation for the region don't even mention Bt cotton. Similarly, while the Agriculture officials claimed that early sowing would help, atleast in villages where the fact finding team visited, even early sown Bt cotton was affected. Farmers told us that no squares formation could be seen even on those Bt cotton varieties which were sown in first and second week of MAY month. Fact finding team visited and documented number of bolls, number of squares, and date of sowing and height of the plant.

A report submitted by a team of agriculture scientists as per request from Karnataka State Agriculture Department has blamed the unscientific usage of pesticides by farmers for the Mirid bug outbreak. This is contrary to what CICR have been saying about the susceptibility of the some of the Bt cotton varieties like Bt Kanaka to sucking pests, especially Mirid Bug. It seems like agriculture scientists are getting away by blaming the farmers for unscientific pesticide usage.

The agriculture department officials also confessed that there are no tests done to asses genetic purity (GoT tests) and there by stop the spread of spurious seeds. Also Krishi Vigyan Kendras (KVKs) under the UAS Dharwad had not done any field level demonstrations with Bt Kanaka, the most cultivated Bt cotton in the region. It also came to light that no scientists from KVKs came to those Bt cotton fields which suffered severe loss from sucking pests.

It is also pathetic that even after such a huge scale of failure of Bt cotton, official reports have not implicated the developers of the seeds, for instance Mahyco of Bt Kanaka and liability actions taken.

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Recommendations:

1. Immediate cross functional team from the state govt including officials from the state agriculture department, UAS Dharwad and ministry of rural development to visit to assess the extent of loss from failure of Bt cotton.
2. A Compensation of a minimum of Rs 60,000/acre is given to all affected cotton farmers. Compensations should be given for tenant cultivators as well.
3. Legal action should be taken and absolute liability should be fixed on Mahyco and other Bt cotton seed companies who have developed the Bt cotton varieties and aggressively marketed them thereby misleading our farmers. They should also be forced to pay compensation to the farmers.
4. Action should be taken against those officials in the Agriculture Department at the district level and scientists at the KVKs of the region who overlooked the early warnings of massive sucking pest like Mirid bug attack on Bt cotton, especially Bt Kanaka and promoted its cultivation.
5. Systems and processes should be put in place to assess seed quality before any seed varieties are released for farmers. Tests for genetic purity should be made mandatory.
6. Karnataka state Govt should take up a systematic programme to promote non GM cotton varieties with special focus on OPVs as it is essential for ensuring seed sovereignty and choice of seeds.
7. State govt should promote ecological farming which is economically, socially and ecologically sustainable in general and especially for such high risk crops like cotton.

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Annexure

Fact Finding Team members with contact details

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2. Manjunatha Holalu , Co convenor Coalition for GM Free Karnataka
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Mob: +9194803-30652
3. T M Muniyappa, President, Davanageri Karnataka Rajya Raith Sangh
Honnuru Post – 577566, Davanagere Taluk & District
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4. Shivayogi Makari , Secretary, Desi Krushikara Balaga, Haveri
Srinagara I Cross, Channahalli Road, Hirekerur, Haveri District 581111
Mob: +91 94488-38147 & +91 9731704132
5. Channa Basappa Kombli, President, Desi Krushikara Balaga, Haveri At Post: Kakola,
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6. Hosamani N C , Cotton Growers, Shiggoan
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7. P Srinivas Vasu Co convenor Coalition for Gm Free Karnataka
No2, II Cross, Annayyappa Block, Kumara Park west, Bangalore 560 020
Mob: +91 94834-67779
8. K N Anjaneya, President, Sarana Muddanna Savayava Krushikara Balaga
Kumbalur, Harihara-Tq,Davanageri-Dt, Mob: +91 99720-88929

Alliance for sustainable and Holistic Agriculture (ASHA) & Coalition for GM Free Karnataka

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9. K Maheshwarappa , Vice-President, Davanageri Karnataka Rajya Raith Sangh

Hale Chikkanahalli, APMC Post, Davanageri Taluk & District

Mob: +91 99028-49250

Discussion and field reports

During the two – day field visit, the team had a chance to visit the following Departments & Cotton fields to gather more information on the actions taken to address the issue.

1. KVK – Hanumana Matti

The team met Dr. Mallikarjuna Gouda, Programme Coordinator, KVK [Mobile: +919448495338, Email: mallikarjunagouda@rediffmail.com]

The following are the points came out during the discussion with him

- He cannot share as he is not in the related Department
- He do not have any idea about Bt. Cotton
- He just gets the copy of the developments happening in the area
- He is part of extension Department
- Dr. Benagi is the in charge of KVK. He will get whatever correspondence related to Bt. Cotton
- FLD is not done
- D R will get letters from Agriculture Department
- No demonstration was held on Bt. Kanaka
- No idea about giving opinion as he do not have experience
- Do have records on rainfall of Hanumana Matti & at District level
- No Scientist visited Bt Kanaka crop field and gave report (Dr. Prabhu, Research Head)
- Do not get any copy of the report by those who visits them and get information
- They have not been included in the team. They select those who worked in Hebbal Cotton Research Centre, Dharwad
- Do not have any Bt. Gene Test Kit
- No FLD was done there

2. Assistant Director of Agriculture, Ranebennur

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The team met Dr. Naganagouda, Assistant Director of Agriculture, Ranebennur [Mobile: 7259005479, Email: adamr@rediffmail.com], Shivanand, Haveri – an Technical Officer, Mr. Battikoppa, Agriculture Officer, RSK, Medleri [Mobile: 7259005518, Email: battikoppa.pune@gmail.com], Mr. Rizwan, Breeder, Agriculture Officer, Kuppeluru [Mobile: 9880847999, Email: harisrizwan@rediffmail.com],

- The following are the points cam, Bt. Kanaka variety has been sown in 15,330 hectares
- There are 115 licensed seed dealers are in Ranebennur. Do have the list.

Only few seed dealers came out during the discussion with him

- The first complaint against failure of Bt Kanaka was lodged here
- No person came to study Bt. Cotton in Ranebennur
- Not purchased Bt. Gene Test Kit
- In Ranebennur Taluk
- submitted the reports. Do have list of those who gave reports
- GOT was not done
- Germination test of 21 samples was done
- No Germination problem
- GOT + Pest + Disease is the real problem
- Sucking pest is a problem
- Susceptibility more in Mahyco Bt Cotton Seeds (all)
- Received more than 9000 complaints
- Approached University and they have given report
- S B Patil - V C Patil – I S Katageri – S S Patil were part of the committee formed by UAS Dharwad
- This year, the taluk witnessed good rain.
- MRC 7351 (Bt. Kanaka) and Niki + faced severe Myrid Bug problem
- 30 – 40 percent drops
- Confider, Monocrotophos, Dico were sprayed extensively
- More sucking pests like thrips
- In other places, even after taking precautionary measures, crop loss
- Low resistance power
- In Hirekerur and Byadagi, Seed Problem in relation to Genetic Purity

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- Previous year, no issue as there was no rain
- As crop insurance, Ra.1.26 lakhs has been given
- No Weed problem
- Square dropping was observed
- Seeds purchased in Ranebennur was not good
- On 04.09.2013, visited field with Dr. Benagi
- Saw sucking pests
- 5 Scientists were there for 3 days and observed all varieties
- Do have list of village-wise list of farmers who lodged complaint
- Seed licence list is there
- No report from Seed Dealers
- Gene Test kit was not purchased as they do not have laboratory
- Seed Dealers has not given sample seed
- Submitted report to Jt. Director of Agriculture along with samples
- Seed Dealers do politics
- About Quality Control, 54 Seeds during Monsoon and 30 Seeds during Rabi has been done and the report is available
- Issued show-cause notice
- Not lodged complaint on any seed company
- Out of 4500 acres, Bt Kanaka has been sown in 21,458 acres
- No GOT
- No provision to purchase Bt Gene Kit
- On 15.06.2013, a meeting was organised for farmers and given training
- Reports was in Newspapers also (Udayavani – 13.08.2013)
- No reference to Bt. Cotton in POP of University
- Loose seeds are purchased by farmers, ever though they are cautioned
- Non Bt. Are on par with Bt. Cotton. We supplied Desi Cotton
- 5 – 10 percent Visits in Ranebennur Taluk
- No bearing of flowers - No square formation was observed in Menasina Hala village

3. R G Gollar, Joint Director of Agriculture, Davanagere

[Mobile: +919449082829]

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The following are the points came out during the discussion with him

- Doora Darshana – Chandana has a cassette of 20 minutes which have full details on Bt. Kanaka (Dr. Prabhu)
- Did campaign in Anagodu Hobli
- 20000 packet of Bt. Kanaka sold and 8600 hectares of cotton field are totally affected
- Highest complaint in Davanagere district
- In other areas, it is sporadic
- Technical problem during Seed production [1 male flower : 3 female flowers]
- No droppings are observed in Madalageri in Harapanahalli taluk
- 4 x 3 is recommended spacing, but close spacing is followed
- Early sowing is best
- Problem erupted to those who did late sowing - from 1st July onwards
- Last year, there was no rain – a farmer sown cotton in the month of May and got 10 quintal of yield
- Received more than 250 complaints
- There are 25 licence holders and mainly there are 4 big seed dealers [3 dealers in Honnali – 2 in Channagiri – 8 in Jagalur – 6 in Harapanahalli – 2 in Harihara]
- Seed Company sent report
- Vasavi Seed Centre sent report to Byadagi
- No complaint or problem regarding Germination
- No craze about Kanaka in Davanagere. It is only in Haveri
- In Jagalur, Bahubali cotton variety and DCH 32 are popular
- Hairy leaves of cotton plants do not have bolls
- Non-hairy plants bearing fruits
- Kanaka and Niki plus do have hairs on leaves
- Bahubali do not have hairy
- Myrid bug starts after stopping spraying Confider
- Got complaint on Niki plus also
- Scientists visited the area and gave report
- Hanagodu and Narasipura belt got 12 quintals under irrigated conditions
- They give spray schedule
- No visit was made by experts

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- Sent report on the issue
- As compensation is given to FMD (Foot and Mouth Disease) and to Blue tongue, let farmers also benefit from compensation
- 4500/- is the amount fixed as compensation
- Even after climatic fluctuation, rejuvenation is there
- Throughout the year, there are crops
- Once in every 15 days, information has been given
- Aggressive campaign has not done
- Bt. Gene Test not done this year
- Bt. Character is resistant to Bollworm. Now no bollworm in cotton
- Bt cotton do have low resistance power
- MRC 7251 – 6251 – 7351 – 6351 are sown late and hence no flowers
- In DCH 32, if sowing is delayed by one week, after 1st June, yield will be one quintal is less
- DCH 32 and Bahubali are same
- Bt. Genes do not have resistance to sucking pests
- No complaint has been lodged against any company
- Due to heavy rain, Bt. Kanaka failed
- Feel very bad about the situation. If 2 – 3 sprays would have been done, it could have saved the crop

4. Shivaanand Nandigaavi, Seed Trader – Nandi Fertilizers, Haveri

[Mobile: +919480089670]

The following are the points came out during the discussion with him

- A licence holder and this shop is a branch of another big shop
- Also a farmer. Has sown Bt. Kanaka
- Mat, a pest has attacked cotton
- Those sown before 15th May had no problem. But those who did late sowing (after 15th May) faced severe problems.
- No seed sample of Cotton has been taken
- Loose seeds are directly sold to the farmers at the village level and that has created this problem

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- Whatever document required has to be approached to the head office only

5. Farmers of Menasinahala village [Chaamana Gouda Basavana Gouda Patil]

The following are the points came out during the discussion with them

- Even 180 DAS, no flower & square formation
- 130 farmers in this village lodged complaint
- Seeds are purchased from Vinayaka Agro Centre, Masooru of Hirekeruru Taluk
- 60 percent of the farmers in this village have Receipt
- Sowing was done during first week of May 2013-11-07
- The farmers exhibited the box containing MRC 7351 Cotton Seeds sold to them

MRC 7351 BG II premium cotton hybrid seeds with Bollgard II insect protection by mahyco

GEAC approved D O No. (Central and South zone)

File No. C – 12017 / 35 / 209 – CS II dated 12.10.2009

Lot No H0BKAI00138X - 117913 – 315538

Label No. 117913 – 3155147 Lot No: BKA100138X

Date of Test: 25.03.2013 Date of Packing: 01.04.2013 Valid upto: 24.12.2013

6. V I Benagi – HOD, KVK – Hanumana Matti

The following are the points came out during the discussion with him

- Flower drops were there
- Farmers earlier demanded for Bt. Kanaka variety as it bear big bolls and harvesting is easy
- Even other varieties equivalent to Bt. Kanaka was rejected
- Due to heavy rain, the applied manures leached out
- Plant started having sucking pest problem
- In Haveri, Ranebennur, Byadagi, Hirekerur taluks, flower bud, maggot, myrid bug pests are observed
- Incidence of wrong supply of sowing seeds
- Bt. Has 250 genotypes and atleast trails should have been done
- No performance test
- Genetic Purity test was done in Hebballi

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- Seed Test – trials – approval is the process
- KVK has given on and off training with demo
- FLD has not been done
- Performance test was done by Hebballi farm on Bt Kanaka
- Technical team to be formed to address the issue
- Seed to be tested before releasing to the market
- Rapid survey team to visit cotton fields from the day of square formation till the harvest
- Bt Genes work only for 110 – 120 days and after 120 DAS, farmers has to spray insecticide
- Do not have Bt. Gene Test Kit which costs Rs.1250/- per kit which have 50 strips
- Around 90 percent of cotton field in the region is with Bt. Cotton
- Bt. Cotton has sucking insects problem
- Some farmers have neglected
- Problem of Leaf reddening - grey mildew are the other problems in Bt. Cotton
- Flower dropping was observed after 140 DAS – cannot found out the reason for that

Average Per acre Cost of Cultivation for rain fed Bt cotton farmers

Sr No	Particulars	Amount
1	Land tillage/cultivation	5500.00
2	Purchase of Manure and application	3000.00
3	Purchase of Fertilizer (2 bag of Urea, one bag of DAP and Complex fertilizer each)	2600.00
4	Seed cost and sowing	1500.00
5	Weeding cost (12 labours @ 200/-)	2400.00
6	Purchase of Pesticide (4 to 5 sprays)	3500.00
7	Harvesting of cotton (Rs. 5/- per kilo for picking charge)	3500.00
8	Transportation	1500.00
9	Bank loan interest/other cost	2000.00
10	Management and land rent cost (Land rent cost 10,000/- and 4000/- for management cost)	14,000.00
	TOTAL	39,500.00

Abbreviation

KSDA – Karnataka State Department of Agriculture

JDA – Joint Director of Agriculture

Bt Cotton failure- Fact Finding report: November 2013

KVK – Krushi Vignana Kendra

GEAC – Genetic Engineering Approval Committee

SAU – State Agricultural University

FLD – Front Line Demonstration

GOT – Grow Out Test

DCH – Dharwad Cotton Hybrid

NALMOT - National Level Monitoring Team

KRRS – Karnataka Rajya Raith Sangha

ASHA - Alliance for Sustainable and Holistic Agriculture

DAS – Date After sowing

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