
My Cotton Experience

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Brief Introduction

- A tech enthusiastic South Indian farmer
- Over three decades of Farming Experience
- Crops Grown: Rice, Cotton, Pulses, Coconut in 50 acres
- Experiments with novel farming techniques and technology
- Advice startups, corporations and non-profit groups



My foray into cotton

- Started farming from 1986
- Started growing OPV cotton from 1986
- Started growing hybrid cotton from 1999
- Started growing Bt cotton from 2004

Pest menace in pre Bt cotton era

- Bollworms devastate cotton which reduce yield & inflict huge economic loss
- Spraying different chemicals (Caleader spray) and Biological control
- Pest developed resistance to chemicals
- Drained our resources - Farmers caught in debt trap
- Farmers in the verge of giving up cotton cultivation

My initial skepticism about BT Cotton

- I got carried away by the false information
- Cattles grazing in Bt Cotton Field would die
- Soil organisms including earthworms would be adversely affected
- Non target Insects would die
- High cost of seed

My decision to try out Bt Cotton

- All my attempts to control bollworms failed
- I was so frustrated & was on the verge of quitting cotton cultivation
- Had the opportunity to attend a meeting in Coimbatore in Feb 2004
- Got my doubts clarified by the scientists
- Decided to make a comparative study about Bt & Non Bt Cotton
- What I expected from Bt Cotton & what I realised

Comparative Cost Analysis

| Account Head | Non Bt Variety Cotton | Non Bt Hybrid Cotton | Bt Hybrid Cotton |
|--|-----------------------|----------------------|------------------|
| <u>Cost</u> | Rs. | Rs | Rs. |
| Seed & Sowing related cost | 2511 | 2500 | 3060 |
| Land Preparation cost | 6400 | 6120 | 6120 |
| Fertilizer & Nutrient cost | 8225 | 7290 | 7800 |
| Plant Protection cost | 7000 | 7000 | 1500 |
| Irrigation & Over Heads | 3000 | 3000 | 3000 |
| TOTAL COST OF CULTIVATION A | 27136 | 25910 | 21480 |
| SALE OF KAPPAS B (net of picking cost) | 40000 | 46000 | 53300 |
| Net Profit/ Acre B-A | 12864 | 20090 | 31820 |

Economic Benefits of Bt Cotton

- Hybrids are more profitable than OPV
- Bt Hybrids are more profitable than Non Bt Hybrid
- Factors for higher Profitability:
 - Increase in yield
 - Reduction in Cost of cultivation
 - Favorable Selling Price

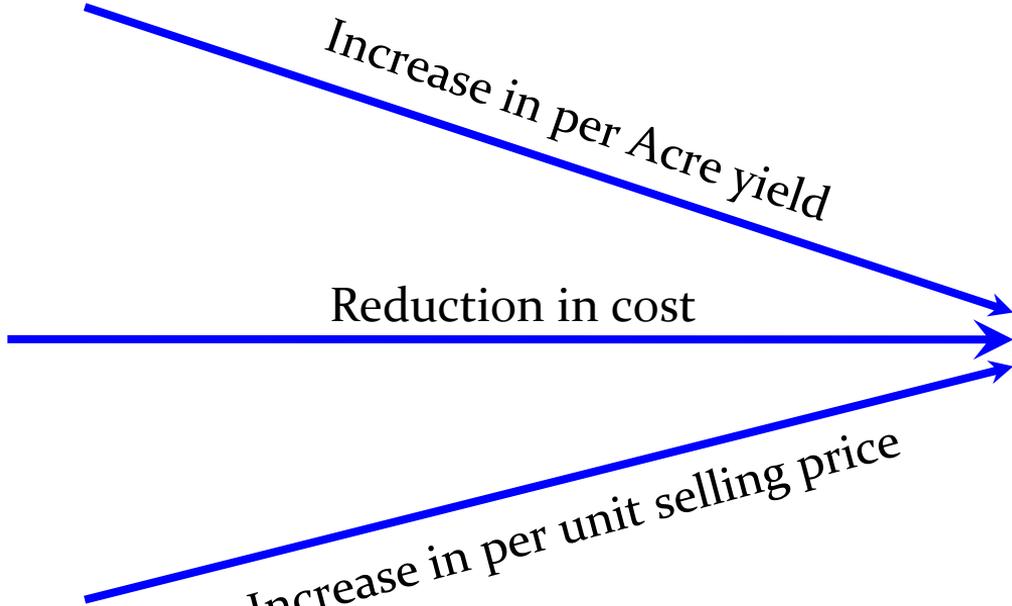
Three ways to increase farm Profitability

Increase in per Acre yield

Reduction in cost

Increase in per unit selling price

Increase in Profitability



How Yield Increases in Bt Cotton

- Yield of Cotton depends on
 - The number of squares & Bolls
 - The vigour of the plant
- Squares & Bolls shed due to biotic & abiotic stress
- Boll shedding is nearly nonexistent due to absence of bollworm
- Higher boll retention rate of Bt Cotton translates into higher yield
- Unhindered growth and vigour right from sowing
- Damage of tender shoot portion is absent







Cost Reduction

- Reduced Pesticide Material Cost & Spraying Cost
- Reduced Labour Cost in Sowing & placement of fertilizers
- Hybrids enables small Power Tillers for interculture
- Harvest labor efficiency enhanced because of fully bloom cotton



Usage of Power tools



Bt-cotton vs. non Bt-cotton (both planted at the same time)

Bt-cotton

- Small compact plant
- Many mature bolls ready for harvest
- -3 sprays for non bollworm pests

Non Bt-cotton

- Large plant, excessive vegetative growth
- Difficult to spray
- Few bolls to harvest
- 10 sprays for all insect pests



Better sale value for farmers

- Farmer Stands to gain at the time of sale because of contamination free fiber
- Absence of oil contamination due to bollworm damaged seed
- Fungus and Bacteria entering through the entry and exit holes is prevented
- Ginners and textile mills prefer Bt Cotton for better fiber characteristics



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Other Benefits

- Non target Insect Predators are preserved
- Environment is not polluted
- Labour can be employed for more productive farm activities
- Win-Win for the farmers and the industry



Benefits for the Textiles & other Industries

- More farmers would grow profitable Bt cotton
- Textile Industry gets contamination free cotton with superior fiber characteristics
- This technology turned India from cotton importing country to exporting nation
- Enables adoption of small farm machines
- Land productivity improves
- Besides being fiber crop cottonseed oil is a major edible oil & cotton meal is an important cattle feed.

Myths and Realities : Grazing - I



Myths and Realities : Grazing related - II



Myths and Realities : Grazing related -III



Myths and Realities : Soil Organism Related



Myths&Realities : Honey Bee & Other nontarget insects



Untapped Potential of GM Crops

- Plants resistance to biotic & abiotic stress
- Climate resilient crops
- More nutritious crops
- Crops with enhanced drought, submergence & salinity tolerance

Appeal by farmers

- Let us enjoy the freedom to access and select the technology
- Let policy related to farm technology be made on scientific merits & not on politics
- GM Mustard & GM Eggplant
- Ongoing agitation by farmers in India

“GM Crop makes it easier in achieving the goal of doubling farmers income”.

Thank You