



ORGANIC COTTON AND GMO

Introduction

23 September 2009 - 3.15 – 4.45 pm



Organic agriculture excludes the use of GMO's

GM is a threat to organic agriculture



What is a GMO?

An organism whose genetic material has been altered using genetic engineering.
Transgenic organisms contain DNA that originated in a different species.

2 main types of GM cotton:

1. BT cotton: Contains a gene from the bacterium *Bacillus thuringiensis*, which produces a chemical (BT toxin) which is harmful to the cotton bollworm (*Helicoverpa armigera*)
2. Herbicide resistant cotton (round-up ready cotton) is modified to resist blanket spraying of glyphosate herbicide.



GM cotton:

Good for small scale farmers?

Good for the environment?



Pro-GM claims:

- **GM IS NEEDED** to ensure sufficient food and fibre to feed and provide clothing to a growing population
- Reduce pesticide usage and pesticide exposure (environment, farmer's health)
- Increase productivity (farmer's income)
- Many other potential benefits (improved nutrition, growing crops in dry areas, mitigate climate change, etc...)



FROM FASHION TO SUSTAINABILITY

WORLD CONGRESS ON ORGANIC COTTON

21. TO 25. SEPTEMBER 2009

Organic cotton and GMO

Problems with GM:

- Health: uncertainty about the impact of introducing new toxins
- Contamination of non-GM plants (GM trait migrates to other plants)
 - Biological: Cross contamination, gene flow through cross pollination
 - Mechanical: Storage, ginning, dispersal of GM seeds
- More aggressive weeds (resistant to diseases, environmental stress) – Upsetting ecological balance
- Loss of biodiversity (traditional cultivars replaced by small number of GM seeds)
- Insect resistance: from the *pesticide treadmill* to the *genetic treadmill*
- Emergence of secondary pests
- Reduce the efficacy of Bt biopesticide
- Control of seed supply shift from farmers to handful of big corporation
- Distract from implementing proven, risk-free, appropriate solutions



Organic cotton and GM: problem of coexistence

Minimise unwanted presence of GM crops in non-GM crops or GM-free crops (organic, Fairtrade)

1. How do we preserve the diversity of organic seed supply?
2. How do we fight contamination risks?
 - Statutory separation distances (who is responsible?)
 - Notification of neighboring farmers
 - In case of economic loss, who is liable? Who should pay?
 - Should there be special co-existence rules with respect to organic?
 - Organic is process-based: should organic farmers be decertified if they did everything right?



Problems with GM:

Distract from implementing proven, risk-free, appropriate solutions

CABI Bioscience:

“Farmer education in IPM is critical for BT cotton. Studies suggest that pesticide reduction could not be sustained unless farmers have been educated in IPM”