



International Cotton Advisory Committee

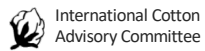
Attachment 4a

Cotton Debate: Sustainable Cotton – “Small Steps for a Big Difference 562nd Meeting of the Standing Committee

**14 November 2019
The ICAC Secretariat’s Office
1629 K Street, NW, Suite 702, Washington DC 20006**

Sustainable Cotton – ‘Small Steps for a Big Difference’

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SIGNIFICANT FACTORS INFLUENCING SUSTAINABILITY

1. Cotton seeds
2. Hybrid seeds
3. Cotton stalks
4. Harvest Index
5. Naturally occurring biological control

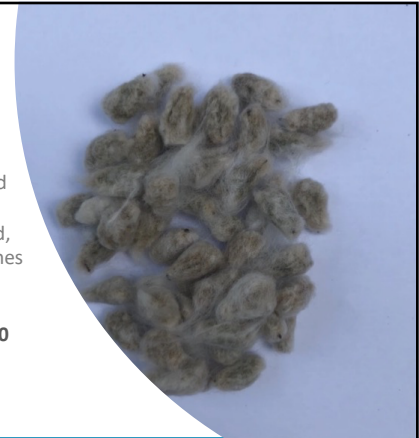


COTTON SEEDS



FUZZY SEEDS

- Majority of African countries are wasting seed by sowing fuzzy seeds (75% of the area)
- Instead of using 10 to 12 kg/ha of cotton seed, estimates show that Africa uses about 5-6 times higher the recommended quantity.
- A conservative estimate show that least 110,250 tonnes of cotton seeds worth \$27-40 million or more are wasted in Africa.



FUZZY SEEDS

Fuzzy seeds cause low yields

- Carry diseases
- Carry insects such as mealybugs
- Carry mites
- Insects and diseases harm seedlings and cause low yields
- Difficult to grade
- Ungraded seed has poor germination %
- Poor vigour cause low yields
- Difficult for seed treatment
- Difficult to use with mechanical planters
- Improper planting geometry causes low yields



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DELINTED SEEDS

Delinted seeds enhance yields

- Are sanitized –No diseases & insects – high yields
- Easy grading
- High germination %
- High vigour cause high yields
- Easy for seed treatment
- Easy to use with mechanical planters
- Increased oil %
- Proper planting geometry causes high yields

HYBRID SEEDS



VS



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HYBRID SEEDS

Hybrid cotton is unsustainable

- Seeds purchased every year
- Seed cost 100-200 USD/ha
- Seeds laborious - about 25% child labour
- Need more water
- Need more fertilisers
- Deplete soil nutrients quickly
- More monopodial branches
- Low harvest index



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COTTON STALKS

- Majority of African and Asian countries do not return back the biomass into soil and instead are wasting cotton stalks by burning them.
- Africa produces about 13 million tonnes of cotton stalks worth more than \$120 million; India and Pakistan together produce 40 to 50 million tonnes of stalks worth at least \$400 million.
- By burning the stalks African and Asian countries not only waste a precious soil nutrient resource but release about 72.6 million tonnes of CO₂ into the atmosphere.



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COTTON STALKS MUST ENRICH SOILS FOR SUSTAINABILITY

Simple technologies such as

- Incorporation of stalks into soil
- Surface cotton-stalk-chipped-mulch
- conversion of cotton stalks into biochar
- cotton-stalk-compost

can work miracles for the soils in Africa and Asia to enhance yields without substantial addition of synthetic fertilizers.



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HARVEST INDEX - NUTRIENT WASTAGE

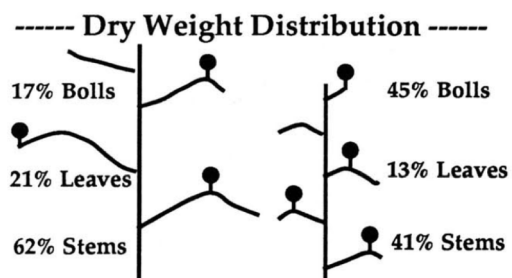


Photo: James Quinn



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HARVEST INDEX



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HARVEST INDEX



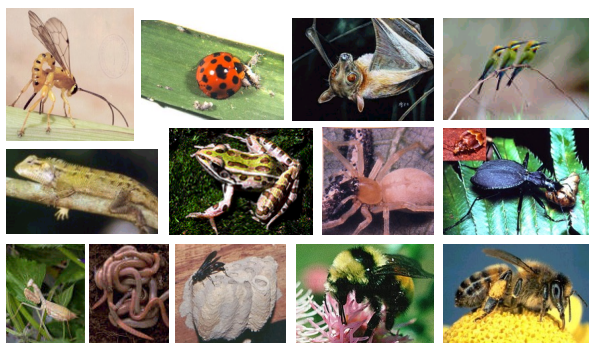
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Asia and Africa are wasting precious nutrients from the soil.

- In India, Pakistan and Africa more than 80% of nutrients are channelised to stems, leaves and burs and rest for boll development, whereas in many developed countries more than 40% of nutrients are channelized to boll development.

Thus, the harvest index is less than 20% in Africa, India and Pakistan.

NATURAL PEST CONTROL



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INTEGRATED PEST MANAGEMENT



1. Short duration varieties
2. Early sowing
3. Judicious fertilizers
4. Conserve Natural control
5. Intercropping for IPM
6. USE IPM STRATEGIES



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Thank you



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