SUSTAINABLE COTTON PRODUCTION

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TECHNICAL INFORMATION SECTION

Objectives:
1. Provide update on cotton production research
2. Provide information pertaining to cotton research programs
3. Develop lines of communications among researchers
4. Supervise Common Fund for Commodities funded projects

TECHNICAL INFORMATION SECTION

1. Provide update on cotton production research:

THE ICAC RECORDER
Quarterly
Published in English, French and Spanish
March 2009
1. Biotech Cotton and the Technology Fee
2. Global Warming and Cotton Production - II
3. Organic Cotton

TECHNICAL INFORMATION SECTION

2. Provide information pertaining to cotton research programs

Current Research Projects in Cotton – 2009
Cotton Production Practices - 2008
Cost of Production of Raw Cotton - 2007

TECHNICAL INFORMATION SECTION

1. Provide update on cotton production research:

Technical Seminar
2008 – Improving Sustainability of Cotton Production in Africa
2009 – Biosafety Regulations, Implementation and Consumer Acceptance
(Cape Town, South Africa, September 10, 2009)
3. Develop lines of communication among researchers

Regional Cooperation
1. Latin American Association for Cotton Research and Development – ALIDA
2. Interregional Cooperative Network on Cotton for the Mediterranean and Middle East Regions
4. Asian Cotton Research and Development Network

World Cotton Research Conferences

WCRC – 1  Brisbane, Australia, 1994
WCRC – 2  Athens, Greece, 1998
WCRC – 3  Cape Town, South Africa  March 9-13, 2003
WCRC – 4  September 10-14, 2007  Lubbock, Texas
WCRC – 5  2011 in India

4. Supervise Common Fund for Commodities funded projects
ICAC serves as a supervisory body for CFC projects

SUSTAINABLE COTTON PRODUCTION

WHAT IS SUSTAINABLE PRODUCTION?

UN - World Commission on Environment and Development - 1987

“Sustainable development is a development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

WHAT IS SUSTAINABLE PRODUCTION?

UN - World Commission on Environment and Development -1987

1. UN Conference on Environment and Development (Rio de Janeiro, Brazil, June 1992)
2. World Summit on Sustainable Development (Johannesburg, South Africa, August/Sept 2002)

Result:
Governments recognized the need to direct national and international plans and policies to ensure that all economic decisions took environmental impacts fully into account.
ALTERNATE NAMES
Biological production/Organic production
Low-input production
Integrated crop management system
Biodynamic production
Bio-intensive production
Conservation tillage
Zero tillage
Minimum tillage
Regenerative production

SUSTAINABILITY IN COTTON
Fundamentals
- Sustainability does not always mean higher yields
- Sustainability does not always mean lower costs
- Sustainability does not always mean more income

Sustainability is an integrated approach from production to marketing and processing

SUSTAINABILITY IN COTTON
Fundamentals
- Environmental
- Economical
- Social

LAND USE BY COTTON - WORLD
<table>
<thead>
<tr>
<th>Year</th>
<th>Area (Million ha)</th>
<th>Production (Million Tons)</th>
<th>Yield (Kg/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1951/52</td>
<td>36.0</td>
<td>8.4</td>
<td>234</td>
</tr>
<tr>
<td>1961/62</td>
<td>33.1</td>
<td>9.8</td>
<td>296</td>
</tr>
<tr>
<td>1971/72</td>
<td>33.1</td>
<td>12.9</td>
<td>392</td>
</tr>
<tr>
<td>1981/82</td>
<td>34.0</td>
<td>15.0</td>
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<tr>
<td>1991/92</td>
<td>34.7</td>
<td>20.7</td>
<td>566</td>
</tr>
<tr>
<td>2001/02</td>
<td>33.5</td>
<td>21.7</td>
<td>647</td>
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</table>

LAND USE IN THE USA

PP CHEMICALS USED ON COTTON - 2007

Pesticides 7.7%
Insecticides 17.1%
PESTICIDES ON COTTON

Percent

<table>
<thead>
<tr>
<th>Year</th>
<th>Percent</th>
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<tbody>
<tr>
<td>1988</td>
<td>11.0</td>
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<tr>
<td>1991</td>
<td>10.5</td>
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<tr>
<td>1995</td>
<td>7.7</td>
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</table>

INSECTICIDES ON COTTON

Percent

<table>
<thead>
<tr>
<th>Year</th>
<th>Percent</th>
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<tbody>
<tr>
<td>1988</td>
<td>18.9</td>
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<tr>
<td>2000</td>
<td>16.9</td>
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</table>

ECONOMIC SUSTAINABILITY-2006/07

US$/Kg Lint

<table>
<thead>
<tr>
<th>Country</th>
<th>US$/Kg Lint</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arg</td>
<td>1</td>
</tr>
<tr>
<td>Aus</td>
<td>1</td>
</tr>
<tr>
<td>Bra</td>
<td>1</td>
</tr>
<tr>
<td>Cam</td>
<td>1</td>
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<tr>
<td>Chi</td>
<td>1</td>
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<tr>
<td>Egy</td>
<td>1</td>
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<tr>
<td>Pak</td>
<td>1</td>
</tr>
<tr>
<td>Tur</td>
<td>1</td>
</tr>
<tr>
<td>USA</td>
<td>1</td>
</tr>
<tr>
<td>Uzb</td>
<td>1</td>
</tr>
</tbody>
</table>

World Average = US$ 1.04

SUSTAINABILITY AND WATER USE

<table>
<thead>
<tr>
<th>Country</th>
<th>Water Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>227 kg lint/mega liter</td>
</tr>
<tr>
<td>Egypt</td>
<td>136 kg lint/mega liter</td>
</tr>
<tr>
<td>Pakistan</td>
<td>50 kg lint/mega liter</td>
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</tbody>
</table>

INSECT RESISTANT BIOTECH COTTON & SUSTAINABILITY

Environmental sustainability - Yes and No
Economic sustainability - Yes and No
Social sustainability - Yes and No
Technological sustainability - Yes
Reducing input costs drives many producer decisions.
Conventional and organic production can co-exist.
Profitability will drive decisions in the global supply chain.
We must correctly understand sustainability and keep that at center of any discussion.

Organic is NOT equivalent to sustainable.
Sustainable is NOT equivalent to subsistence farming.
Sustainability is equivalent to FUTURE and LONG TERM PROFITIBILITY.