INCANA Newsletter

Second Issue - Winter 2007

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The 66th Plenary Meeting of International Cotton Advisory Committee (ICAC) Izmir, Turkey, October 26-28, 2007

ICAC 66th Plenary Meeting since 1939 was held in Izmir, Turkey during October 22-26, 2007. More than 500 people participated in the meeting, including representatives from 44 countries and 9 international organizations. Many interesting cotton related issues were discussed during the meeting and scientists from different cotton growing and consuming countries shared their knowledge on various subjects including cotton production, cotton classification and standardization, cotton trade, etc.
A summary of different issues and subjects discussed during the meeting is presented below:

A New Record in Cotton Demand: ICAC estimates that world cotton mill use is increasing for the ninth consecutive season to a record of 27 million tons. World cotton consumption is estimated to be above production this season, while world production is estimated lower than last season at 26 million tons. Cotton prices are expected to be higher than in recent seasons.
Urgent Completion of Doha Round: Member Governments reaffirmed that subsidies, tariffs and quotas that distort production and trade, reduce cotton prices and lead to negative impacts on cotton farmers and the economies of developing and least developed countries.

Strategies for National Competitiveness: The Committee recognized that competitiveness is market driven. The development of human resources, improvements in quality throughout the value chain from fiber to apparel, strong research and development efforts and creative marketing strategies are required for competitiveness.
Cotton competitiveness with synthetic fibers was considered to be an important aspect of "Strategies for National Competitiveness". It was also noted that demand enhancement efforts can be an important component of such strategies.
Cotton Serves as a Sustainable Engine of Economic Development: The Panel on Social, Environmental and Economic Performance of Cotton Production (SEEP) reported the above issue and it was agreed by all participants
Industry Standardization Promotes Competitiveness: It was reported that initiatives toward standardization of instrument testing and the use of standardized trade rules in cotton were moving forward, and that these initiatives are helping the cotton industry lower costs and improve quality in competition with synthetic fibers.
Excess moisture in cotton bales believed to be a growing problem from several origins, and this problem was emphasized to be taken seriously and needs to be studied and solved.
Vision for Technology in 2025: The participating scientists believe that cotton production practices will change drastically in the next two decades. Climate change through global warming may increase photosynthesis, leading to increased vegetative growth in cotton but not necessarily resulting in greater production of lint.
Development of varieties with higher host plant tolerance and the development of short duration varieties to save labor and inputs were agreed strongly. The importance of **good agricultural practices (GAP) particularly application of integrated pest management (IPM) strategies in cotton fields was noted and repeatedly emphasized.**

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Reflection of INCANA Activities in ICAC Meeting

INCANA and its activities were well introduced and described in ICAC meeting by **Dr. Heydari** who was invited to participate in the meeting as INCANA representative. During the meeting, Dr. Heydari tried to introduce the INCANA to the participants by distributing the mini posters of INCANA provided by secretariat office. He also explained the activities of INCANA during different discussion sessions of the meeting. One issue that seemed to be the most interesting to the participants was the IPM workshop held in Syria in 2006 by INCANA. After Dr. Heydari talked about the outcomes of IPM workshop and explained the Syrian success and achievements in implementation of IPM strategies that have resulted in second highest yield in the world with almost no application of chemical pesticides, many scientists were impressed and wanted to hear more about this success story. ICAC officials also showed their interests in this issue and basically agreed with holding an international IPM workshop by collaboration of INCANA. In this regard, Dr. Heydari suggested ICAC policy makers to form an expert panel on IPM which was agreed and it will be discussed in future ICAC meetings.

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3rd Steering Committee Meeting of INCANA
19-20 June, 2007 Damascus, Syria

The third Steering Committee Meeting of INCANA was held in Damascus during 19th -20th June, 2007. The meeting was organized by General Commission for Scientific Agricultural Research (GCSAR) and INCANA Secretariat with the support of AARINENA (Association of Agricultural Research Institutes for North East and North Africa), APAARI (Asia-Pacific Association of Agricultural Research Institutes) and ICARDA-CAC regional office. Totally 12 participants attended the meeting including representatives from Egypt, India, Iran, Pakistan, Sudan, Syria, Tajikistan, Turkmenistan and Uzbekistan.

Dr. Hamdan, Executive Secretary of AARINENA welcomed the participants and expressed his appreciation to the Government of Syria and Dr. Majd Jamal and INCANA Secretariat for organizing this

meeting. He mentioned the importance of exchange of knowledge and information among the stakeholders of agricultural research in the region and the role of INCANA for achieving this goal. He also requested the participants for strengthening the network through formulating technical working groups in order to:

1- Optimize the limited resources available and to streamline and focus on the problems in each of the areas identified as priority areas;
2- Prepare work plans and assign responsibilities to the members of each working group and to the Secretariat;
3- Enhance and coordinate technical collaboration among relevant member institutions;
4- To provide INCANA webpage and Newsletter with information for dissemination among member countries

After country report presentations and discussions on different issues the participants agreed on the establishment and formation of following working groups with the coordination of leading INCANA member countries:

1- Biotechnology application including development of transgenic cotton for biotic and abiotic stresses (India)
2- IPM on cotton (Syria)
3- Mechanization of cotton cultivation (Uzbekistan)
4- Soil and water management (Pakistan)
5- Seed technology and marketing (Egypt)

The following issues were also discussed and agreed for the future activities of (INCANA)

1- Budgeting for the Network and Secretariat will be continued as before by APAARI, AARINENA, GFAR, ICARDA, CACAARI and FAO regional office in Ankara (Dr. Fawzi). The Secretariat will provide records of expenditure.
2- Some financial would be supported by FAO regional office in Ankara for organizing advanced training workshop on IPM in one Central Asian countries.
3- Future activities of the Network:
4- Submission of 4 pre-proposals from working groups (2-3 pages) including capacity building and training for finding donors.

- Organizing at least 2 workshops or training courses on following topics
- IPM
- Seed technology
- Cotton quality assessment and evaluation
- Drought and water management

5- Newsletter will be published biannually and members should help the Secretariat on content and should also help in updating website and database of INCANA.
6- It was decided the 4th steering committee to be hold in Egypt based on the approval of the Egyptian Government which will be intimated by Dr. Monir Gad, Director of Cotton Research Institute .

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Workshop on Integrated Pest Management (IPM) on Cotton
Aleppo, Syria (Aug. 16-21-2006)

INCANA Secretariat with the collaboration of General Commission for Agricultural Research of Syria and support of APAARI, AARINENA, GFAR and ICARDA organized an inter-regional workshop on cotton IPM in Aleppo from Aug 16-21, 2006. The following is a brief report of the workshop.

Participants:

Cotton IPM specialists from 8 INCANA member countries including Syria, Iran, India, Pakistan, Egypt, Sudan, Tajikistan and Uzbekistan participated in the workshop.
The workshop consisted of the following sessions:

Presentation session: In this session, all participants presented their reports on cotton IPM in their respective countries and shred their knowledge with each others.

Roundtable discussion: After presentation, participants attended a round table discussion and discussed various cotton IPM related issues in different countries.

Scientific visits: Several visits to scientific centers were organized by Syrian colleagues for the participants. During this session, participants visited ICARDA headquarter, Aleppo University and Biological control laboratories in different parts of Syria.

Field visits: About 10 cotton fields in different provinces of Syria were visited by participants where they were given practical information on cotton IPM in Syria.

Final recommendations: The following issues were agreed by the participants as the final statement and recommendation of the IPM workshop:

1. The workshop was highly successful and all participants expressed their satisfaction
2. Syrian colleagues did an excellent job in organizing and holding the workshop
3. Syrian scientists have made very significant progresses in cotton IPM. They have used all available strategies to overcome pest problems in their cotton fields.
4. INCANA member countries should use Syria success in IPM program to overcome their cotton pest problems
5. The use of biological (natural enemies against insect pests and microbial antagonists against diseases) and cultural and agronomic practices such as land preparation, sowing date, good fertilization and proper irrigation, should be considered the most important components of cotton IPM programs.
6. Farmers Field Schools (FFS) should be considered an important part of IPM programs because it allows the farmers to get involved in IPM programs and implement the IPM strategies by their own.
7. The use of natural and plant products such as Neem extracts should be taken to the account. These products have been successfully used in some countries and have produced very promising results.
8. Biological control technology transfer among INCANA countries should be encouraged.
9. The use of transgenic cotton such as Bt with consideration of environmental safety should be taken to the account
10. Pesticides should be used and applied only when environmentally and economically are justified
11. Organizing and holding further workshops and meetings on cotton should be continued in the future

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Traveling Workshop on Hybrid and Bt Cotton
India, 21- 26 Nov. 2005

With the approval of ICAR, New Delhi, a Traveling workshop on Hybrid and Bt Cotton was held for participants of four Countries during 21 - 26 November 2005. The participants included:

1. Dr Ali Jafari, Head, Cotton Research Institute, Mofidabad, Iran
2. Dr Hakimjon Saydaliev, Head of Cotton Germplasm Deptt., Uzbek Cotton Breeding Institute, Tashkent, Uzbekistan
3. Dr M. Amir Helali, Administration of Cotton Research, General Commission for Scientific Agricultural Research, Aleppo, Syria
4. Dr Bayramgeldi Gurtgeldiyev, Principal Cotton Specialist, Ministry of Agiculture, Turkmenistan

The following activities were arranged and conducted for participants during this workshop:

- Visit to Natinal Agricultural Science Museum – The Saga of Indian Agriculture
- Visit to NCIPM, New Delhi
- Visit to CICR Regional Station, Sirsa
- Visit to CICR Experimental fields
- Visit to CICR and CIRCOT Laboratories
- Visit to farmers' Bt cotton fields in two villages of Sirsa District
- Visit to IPM and IRM villages adopted by CICR Regional Research Station, Coimbatore
- Visit to CICR Regional Research Station, Coimbatore
- Visit to Experimental Fields sorghum on cotton yields also generated interest
- Visit to Research Facility of Mahyco Life Sciences Research Centre
- Visit to Bollgard II Bt hybrid fields at village Sillod

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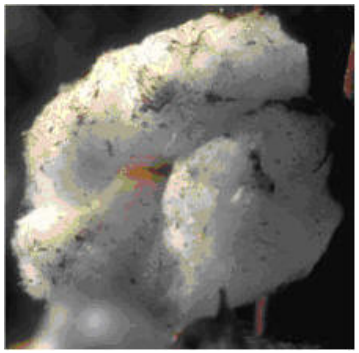
A Technical Review: "Stickiness in Cotton"



What is Stickiness?

To growers, stickiness means higher costs for insect control and reduced cotton marketability. To ginners, stickiness may mean special handling and processing requirements. At the textile mill, stickiness means reduced processing efficiency, lower yarn quality, and in severe cases total shut down. For everyone concerned, stickiness means reduced profitability. Stickiness occurs when excessive sugars present on fibers are transferred to equipment and interfere with processing. Sugars may be insect- or plant-derived.

Honeydew, when present in sufficient quantity, is the main source of sugars that can result in sticky lint. Honeydew is excreted by certain phloem-feeding insects including aphids and whiteflies. These insects are capable of transforming ingested sucrose into over twenty different sugars in their excreted honeydew. The major sugars in cotton insect honeydew are trehalulose, melezitose, sucrose, fructose and glucose. Another source of stickiness is free plant sugars sometimes found in immature fibers. Cotton fiber is largely cellulose that is formed from sugars synthesized by the plant. Dry, mature cotton fibers contain little free sugar, while immature cotton fibers contain

glucose, fructose, sucrose, and other sugars. If immature cotton fiber is subjected to a freeze, complex sugars may be broken down to release additional simple sugars. Less commonly, oils released by crushed seed coat fragments can also result in stickiness. In this case, raffinose is the characteristic sugar. Sugars differ in their stickiness. For example, sucrose, melezitose, and trehalulose are all significantly stickier when deposited on fiber than are glucose or fructose. Further, trehalulose-contaminated fiber is stickier than fiber with an equivalent amount of melezitose. Mixtures of sugars, such as occur in honeydew, tend to be stickier than single sugars. Localized concentration of sugars like honeydew is at higher risk of causing stickiness than more evenly distributed sources like plant sugars.

A summary of approach for preventing stickness in cotton

Even with the importance of producing high quality, non-sticky cotton, it is important to follow basic tenets of Integrated Pest Management:

1. Visit and sample fields regularly.
2. Treat only when the population exceeds the economic threshold.
3. Be realistic about yield potential and strive for the shortest season possible. Delaying harvest makes fields available for aphid and whitefly migration late season.
4. Manage the crop to a successful termination. Take care with late irrigations; avoid situations that lead to regrowth before and after defoliation.
5. Use defoliants appropriate to your situation to minimize the length of time that lint is exposed to green leaves. If required, treat the fields to reduce adult whitefly and/or aphid populations.
6. Practice good insecticide resistance by rotating compounds with differing modes of action.
7. Visit the field between defoliation and harvest to ensure that aphid and whitefly are not present in damaging numbers.

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New Achievements in Cotton Research & Development: "New Varieties Realized from Iran"

1- **Sephid** as a short duration (120-130 days), high yield, medium staple cotton variety has been jointly released in 2007 by CRI (Cotton Research Institute of Iran) and General Office for Cotton and Oil Crops of Islamic Republic Of Iran. Sephid is an okra leaf type cotton which has been released through introduction breeding method with various trials after ten years. Sephid as an early mature cotton variety was introduced mainly for double cropping system in northern cotton zone. the achievement has been resulted in wheat grain yield increments by planting wheat right after cotton harvesting.

Economic characteristics:

- Ginning turnout (%): 41.16
- Staple Length (mm): 29.8
- Micronaire (µg inch-1): 4.6
- Fiber Strength (tppsi): 84.4

Yield Potential: 4850 kg/h

2- F1 Hybrid cotton seed: Hybrid cotton is an optimistic approach for significant improvement in genetic potential for yield and fiber quality. Therefore, **Hyb86SS** and **Hyb86SB** as two new *G. hirsutum* intraspecific commercial hybrid seeds were introduced to the farmers in Northern Iran.

2-1- Economic characteristics of **Hyb86SS:**

- Ginning turnout (%): 41.92
- Staple Length (mm): 31.3

- Micronaire (µg inch-1): 4.3
- Fiber Strength (tppsi): 89.2
- Yield Potential: 4175 kg/h

2-2- Economic characteristics of **Hyb86SB:**

- Ginning turnout (%): 40.84
- Staple Length (mm): 32.1
- Micronaire (µg inch-1): 4.3
- Fiber Strength (tppsi): 88.9
- Yield Potential: 4450 kg/h

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