

## Working Paper III

# TOPIC OF THE 2003 TECHNICAL SEMINAR

Proposals from the Secretariat to the Committee on Cotton Production Research

## INTERNATIONAL COTTON ADVISORY COMMITTEE

Cairo, Egypt

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The following topics are suggested as possibilities for the 2003 Technical Seminar:

### **Effect of Advances in Processing Techniques on Demand for Quality Cotton**

Cotton quality is highest soon after bolls open. All processing, starting from picking until the finished good, affects this quality. As cotton production practices change, processing of cotton also changes. Fiber quality testing has improved and machine testing is on the way toward eliminating machine operators in HVI systems. On line measurements of various parameters in ginning and the development of IntelliGin are going to further automate the processing of cotton at the gin. Similarly, changes have occurred in spinning and weaving. High speed and automation are the two primary areas where significant changes have occurred. How all these changes have affected the need for quality cotton could be one of the topics for the 2003 Technical Seminar.

### **Need for Uniformity in Measuring Quality Characteristics**

Cotton quality must be measured accurately, and accuracy can be defined as repeatability of measurements under uniform conditions. Currently, a variety of equipment is used to measure fiber quality, which is possibly one of the factors responsible for variation among labs. In addition to the equipment, sample drawing, sample preparation, and operator and lab conditions also contribute to variability. As in the case of HVI, where it has been realized that humidity and temperature are critical for accurate measurement of fiber quality, also there is a need to identify factors responsible for variation to bring universal harmony among testing methods. Similarly, other characters, including trash content and even stickiness, should be reported at comparable levels so that data reliability is improved.

### **Environmental Impact of Input Use in Cotton**

Insecticides are sprayed on cotton more than on any other field crop. Herbicide use, although not extensive in most countries, is increasing. Fertilizer use is not the highest on cotton, but with the exception of a few countries like Argentina, cotton is applied with

significant quantities of synthetic fertilizers to supplement nitrogen and phosphorous particularly. Potassium, which tends to stay in the soil for a longer time compared to nitrogen, is rarely used. Those nutrients that do not stay in the soil for a longer time are ultimately delivered somewhere. Another heavy input used on cotton is irrigation water. Only about 50% of world cotton area is irrigated from canals or from underground. But, due to the ability of water to leach down and also take nutrients along with it, water has a significant impact on the environmental aspect of cotton production. This topic could focus on two aspects: efficiency of the inputs applied to cotton and how this efficiency could be improved so that cotton production has the least negative impact on the environment.

### **Can We Improve Yield?**

ICAC statistics show that the world average yield increased at the rate of 2%, or 8 kg lint per ha per year, from 1950/51 to 1991/92. The world average yield increased from 442 kg/ha in 1981/82 to 598 kg/ha in 1991/92, a 35% increase in ten years. Weather conditions were favorable in most countries in 2001/02 and the world average increased to 639 kg/ha, a 7% increase in ten years. ICAC forecasts also suggest that during 2002/03 the average yield will drop to 614 kg/ha. The increase in yields at the world level, unlike in the 1980s and before, is coming from only a few countries, particularly Brazil, China (Mainland) and Turkey. In most other countries, there has been no increase in yield in the last ten years. In general, the progress in yield improvement has slowed if not stopped. Why is there such a slow growth in yields and what should be done to improve it, could be one of the topics for the 2003 Technical Seminar.