



INTERNATIONAL COTTON ADVISORY COMMITTEE

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From the Secretariat

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Pesticide use in Cotton in Australia, Brazil, India, Turkey and the USA

The ICAC Expert Panel on Social, Environmental and Economic Performance of Cotton Production (SEEP) has released a study of pesticide use in cotton in Australia, Brazil, India, Turkey and the USA. SEEP has also prepared an Interpretive Summary of the Study and four separate reports on the factors influencing the use of pesticides in cotton in Australia, Brazil, India and the U.S.A. The Study does not include herbicides because of data limitations, but the report covers the use of acaricides, fungicides, inorganic pesticides, insecticides, molluscicides and nematocides.

The research group on Environmental Risk Assessment of Alterra, Wageningen University, The Netherlands, conducted the Study under contract to SEEP. This study received financial support from the ICAC and from the FAO Global IPM Facility under project GCP/INT/999/SWI on Pest and Pesticide Management Policy Development. SEEP developed the study proposal and provided scientific consultation and overall supervision of the report. The Interpretive Summary of the Study and the country reports were completed by SEEP.

The Study, the Interpretive Summary and the four country reports are available on the ICAC web site at <http://www.icac.org/seep/documents/english.html>. Spanish and French translations of the Interpretive Summary are being prepared and will be loaded on the web site as soon as possible. The list of members of SEEP, the Terms of Reference of SEEP, and the background to the formation of SEEP are also located on the web site.

The Chairman of SEEP will report to the ICAC during the First Open Session of the 69th Plenary Meeting on September 21, 2010 in Lubbock, Texas, USA. A full discussion of the Study and the recommendations developed by SEEP will occur at that time.

Pesticide Use

Pesticide use in cotton is a critical concern whenever the theme of sustainability of cotton cultivation is discussed. In the 1990s, the use of crop protection chemicals on cotton peaked. According to data provided by Cropnosis, a private company in the UK, cotton's share by value of global pesticide consumption declined from 11% in 1988 to 6.8% (US\$3 billion) in 2008. Similarly, the share of world insecticide use (insecticides are a subset of all pesticides) on cotton declined from 19% in 2000 to 15.7% in 2008.

An important gap that SEEP identified is the lack of current country-specific pesticide use data to accurately measure the impact of changes occurring in plant protection practices.

The Study focuses on trends in the use of pesticides applied in cotton along with an assessment of the hazards of those pesticides.

The Study does not look into pesticide use efficiency. It provides figures in terms of grams of active ingredient (a.i.) used to produce a kilogram of lint cotton in the five countries. However, these figures do not take into account the toxicity of the pesticides used nor do they distinguish between low and high dosage formulations. The scope of the study, data sources and methods of analysis are described in full in the Study.

A new indicator developed by the Alterra research group, called environmental toxic load (ETL), was applied to assess environmental hazards.

Major Findings:

Analysis of the most recent information available for each country resulted in the following figures for pesticide use on cotton:

1 kg a.i./ha in Australia (2007)
4.9 kg a.i./ha in Brazil (2006)
0.9 kg a.i./ha in India (2006)
0.6 kg a.i./ha in Turkey (2006)
1.2 kg a.i./ha in the USA (2006)

In Australia, the average amount of pesticides (kg a.i.) applied per hectare steadily declined after a peak reached in 1999. No clear trends in amounts used were distinguishable in India, Turkey and the USA, but this may be due to the limitations of the dataset. In Brazil, the use of pesticides increased during the years studied and by 2006 was 4-8 times higher than in the other countries. The reasons for increased use of pesticides in Brazil are explained in the Brazil country report. In all countries, insecticides, and among these organophosphates, were the major group of pesticides used, noting that herbicides were not analyzed.

Recommendations:

SEEP developed eight recommendations based on the results of the Study. The recommendations are summarized below and are presented in full in the Interpretive Summary.

- i) SEEP recommends that WHO Hazard Class I pesticides be eliminated in countries where adequate provisions for their management are not in place (see section 6 of the Study/Alterra Report for details on "adequate provision").
- ii) SEEP recommends that cotton-producing countries where the use of pesticides is higher than 1 kg of a.i. per ha should analyse and address the causes of such use.
- iii) SEEP recommends that the use of active ingredients that account for the highest contribution to the environmental toxic load (listed under section 2.2 of the Summary) should be minimized to reduce the environmental hazards to aquatic organisms and bees.
- iv) SEEP recommends that pesticides known to pose possible risk of harm to unborn or breast-fed children should be eliminated from the cotton production system.
- v) SEEP recommends that governments, with the involvement of all concerned stakeholders in the cotton sector, make a strong effort to promote best management practices in plant protection and to reduce reliance on pesticides and subsequent risks to the environment and human health.
- vi) SEEP recommends that governments consider both environmental and health risks while formulating clear policy statements relative to pesticide risk reduction.
- vii) SEEP recommends that governments promote the collection of reliable crop-specific data related to pesticide use.
- viii) SEEP recommends that follow-up risk assessment studies be conducted.

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The Secretariat of the Committee publishes information related to world cotton production, supply, demand and prices, and provides technical information on cotton production technology. Detailed statistics are found bimonthly in *COTTON: Review of the World Situation*, \$185 per year via email, \$225 per year in hard copy. A monthly outlook is available by email for \$295 per year. Access to the latest weekly estimates of world cotton supply and use by the Secretariat is available on the Internet for \$460 per year. Access Secretariat reports at <www.icac.org>.