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Update: Boll weevil in Brazil
Anthonomus grandis




Background on infestation in Brazil



- 1983: Pest first detected in Brazil
 - February: Campinas region – SP (Santa Bárbara D'Oeste county)
 - June: Campina Grande region – PB (Ingá county)



- 1987: Paraná
- 1990: Mato Grosso do Sul
- 1993: Goiás
- 2008: All cotton growing regions in the country




Economic Impact

- 500,000 ton EXPORTED X US\$ 6.57/POUND = US\$633,000 MI
- 1,000,000 ha
- x US\$ 2,400.00
- x 1.10 = US\$ 2,640,000,000 market
- LOSSES CAUSED BY THE BOLL WEEVIL: \$70 – 180 ha/year



Definitions

- SUPPRESSION:** "The application of phytosanitary measures in an infested area to **reduce** pest populations " (FAO, 1995; revised CEPM, 1999).
 - Secretariat of the International Plant Protection Convention (2006) *Glossary of phytosanitary terms*. ISPM No. 5, pp. 57-79, in: International Standards for Phytosanitary Measures 1 to 27 (2006 edition). Rome, Italy: Food and Agriculture Organization of the United Nations. **COPYRIGHT:** Food and Agriculture Organization of the United Nations.
- ERADICATION:** "Application of phytosanitary measures to **eliminate** a pest from an area" - (FAO, 1990; revised FAO, 1995).
 - Secretariat of the International Plant Protection Convention (2006) *Glossary of phytosanitary terms*. ISPM No. 5, pp. 57-79, in: International Standards for Phytosanitary Measures 1 to 27 (2006 edition). Rome, Italy: Food and Agriculture Organization of the United Nations.
- CONTROL:** "reduction of population density and abundance, in order to keep **damage at an acceptable level**" (Genovesi, 2001).
 - Genovesi, P. (2001) *Guidelines for Eradication of Terrestrial Vertebrates: An European Contribution to the Invasive Alien Species Issue*. Convention on the Conservation of European Wildlife and Natural Habitats Standing Committee. T-PVS (2000) 65 revised 2. Council of Europe, Strasbourg, France.



Regional Programs: GO, MT and BA




- GO: control and suppression**
 *AGOPA, FIALGO, FGO, Government...
- MT: control and suppression**
 *AMPA, FACUPL, IMA, Government...
- BA: control**
 *ARAPA, FDA, FUNDEAGRO, Consultants, Government...


EXAMPLE SET BY GOIÁS



- MONITORING**
 - pheromone trap
- DETECTION**
 - mapping: GIS/GPS
 - software
- CONTROL**
 - cultural practices
 - legislation
 - chemical control





STRATEGIC PLAN FOR CONTROLLING THE COTTON BOLL WEEVIL IN GOIÁS

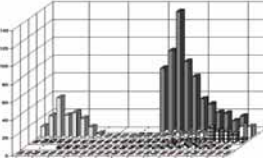


Emergency measures for infested regions

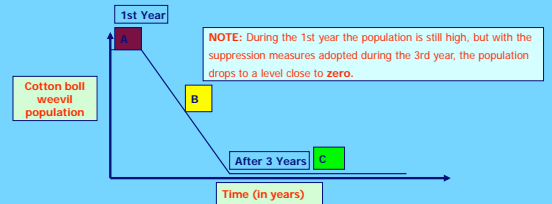
- ✓ Concentrated planting in some regions in up to 30 to 40 days;
- ✓ Use of insecticides at 5-day intervals, on the edges (a minimum width of 30 meters), beginning in the V2 stage (second leaf measuring 2.5 cm) until the first firm boll appears;
- ✓ Three applications of insecticides at 5-day intervals, at pinhead square stage (B1 stage), in traditionally infested areas;
- ✓ Constant crop monitoring, and the adoption of a control level of up to 5% of flower buds infested by the boll weevil. This level determines the need to reapply the insecticide;
- ✓ Three insecticide applications at 7-day intervals, when the first open boll is noted (*cut-out* = phase in which the plant finally ceases vegetative growth), and if the level of infestation affects approximately 5% of the flower buds;
- ✓ Reduce the pest population when the defoliant is applied
- ✓ Destroy cotton stalks by august 30th, or as stipulated by the Law.




Suppression - GO



Suppression



NOTE: During the 1st year the population is still high, but with the suppression measures adopted during the 3rd year, the population drops to a level close to zero.



Localized applications - Faz. Macaé

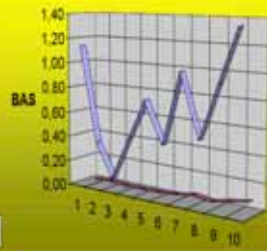


Traps where the cotton boll weevils were captured and where insecticide was applied in part of the plot.



Pre-crop trap setting

Cotton boll weevil infestation during the pre-harvest period for the last two years



■ 2006-07 harvest
■ 2007-08 harvest



Future outlook



• NATIONAL CONTROL PROGRAM

- Control
- Suppression
- Eradication (?) – we need more science

- FARMERS, GOVERNMENT AND SOCIETY

