Fourth Meeting of the Latin American Association for Cotton Research and Development

Girardot, Colombia, May 25-28, 1993

The Fourth Meeting of the Latin American Association for Cotton Research and Development (Asociación Latinoamericana de Investigación y Desarrollo del Algodón-ALIDA) was held in Girardot, Colombia, May 25-28, 1993, on the theme of integrated pest management in cotton. Earlier meetings had been held in Argentina (1986), Peru (1988) and Brazil (1991). The meeting was hosted by the Federación Nacional de Algondoneros (FEDERALGODON) of Colombia. As coordinator of the meeting, Dr. Guillermo Alvarez Alcaraz, Director, Division Tecnica, FEDERALGODON, made the local arrangements. The meeting was attended by delegates from Argentina, Brazil, Costa Rica, Guatemala, Nicaragua, Peru and Uruguay, in addition to a large number of local participants and two representatives from Stoneville Pedigree Seed Company, USA. ICAC was rep-

resented by Dr. M. Rafiq Chaudhry, Head, Technical Information Section. A list of participants is attached.

The meeting was formally inaugurated by Mr. Antonia Abello Roca, Director General, FEDERALGODON; Mr. Moises Brochero, representative of the Government of Colombia; Mr. Adolfo Monzaleano Gardoz, representative of the mayor of Girardot; Dr. Raimundo Braga, President of ALIDA; Dr. Chaudhry, ICAC; and Dr. Alvarez.

Dr. Alberto Murillo from the Group for Integrated Insecticide Management (GIMP) presented a paper on the activities of his group. He mentioned that, on average, 85% of sprays are used against boll weevil. One of the outcomes of heavy spraying against boll weevil, which was ignored while selecting insecticides to control boll weevil, is resistance in *Heliothis*. He commented that GIMP has been working since 1988 to determine and grade resistance to various pyrethroids and carbamates. The group, which is comprised o researchers from Instituto Colombiano Agropecuario, pesticide companies and farmer cooperatives, is working to establish strategies for the reduction of the cost of insect control, the preservation of beneficial insects and the rational use of insecticides. Concrete recommendations on

selective insecticides and critical periods for spraying are still to come from GIMP. The group currently works only on cotton but might expand to other crops and commercial flowers in the next few years.

Dr. Fernando Agudelo Silva, FAS Technologies, USA, in his presentation traced the history of the boll weevil in the USA and referred to the ecological approach to IPM adopted in the USA. He strongly supported the use of bait sticks for the control of boll weevil,. He said that the key elements in the use of bait sticks are concentration, formulation and speed of liberation of pheromone. He proposed that area-wide management programs should be launched in cooperation with extension people to have an effective control of the insect. He also suggested identifying local predators and planning control measures based on the ecological situation.

Dr. Ingeborg Zenner de Polania from the Instituto Colombiano Agropecuario made a presentation on the management of aphids, *Heliothis virescens* and *Spodoptera frugiperda* in Colombia. She reported that resistance to organophosphate insecticides has been noted in aphids in Colombia. Efforts are being made to manage this resistance through the augmentation and conservation of naturally occurring parasites and preda-

tors during the first 60 days after planting. *H. virescens*, which has confirmed resistance to pyrethroids, is managed by the weekly release of *Trichogramma* species. *S. frugiperda*, which has confirmed resistance to methomyl, clorpyrophos and cypermethrin in several cotton growing areas of Colombia, can be managed through diflurbenzuron of *Bacillus thuringiensis*. She mentioned that special emphasis is given to preservation of useful insects for the first 60 days, destruction of stalks after final picking, a longer host-free period, specific weed management and selective insecticides.

Mr. Guy Pauly from CIRAD-CA (formerly IRCT), presently working in Costa Rica, gave a presentation on "Experimentation with IPM Techniques on Cotton in Central America: Primary Results Obtained at the Level of Small Farmers in Honduras." The trials were conducted in 1991/92 to control boll weevil and whitefly in cooperation with the Cooperativa Algodonera del Sur Ltda. Cutting and incorporation of plant residues, isolation of cotton plots, sowing dates, varieties with special plant characters (okra leaf, nectariless, frego bract) and pheromone traps for the control of boll weevil were tried. Mr. Pauly reported that with the use of these techniques, insecticide spraying was delayed by 30 days (started 55 days after plant-

ing) and the number of applications was reduced from 15 to only 8. Okra leaf (TX-ORSBO) and frego bract (IG 1600) varieties showed very low infestation of boll weevil and whitefly in comparison with DPL-41. Compared with DPL-20, DPL-41 and Stoneville 213, U 80 from Nicaragua and P 288 from Paraguay demonstrated high tolerance to viruses transmitted by whitefly.

Ms. Maria Graciela Arias de Lavalle (Argentina) and Mr. Horacio Villavicencio (Guatemala) reported on IPM strategies in their countries. Mr. Villavicencio stated that area in Guatemala is decreasing due to the high cost of production. He also listed varieties grown, important recommended insecticides and their doses of application.

Dr. Francisco Rendon of FEDERALGODON, Colombia, presented a paper on boll weevil control in Colombia. He talked about the spread of boll weevil, its alternate host plants, its physical characters and their relationship to spreading the pest. A thorough report on IPM in Colombia was also presented by Dr. Alvarez.

Dr. George Rea Walker, Director, International Marketing, Stoneville Pedigree Seed Company, USA, attended the meeting along with an agronomist from the company. Dr. Walker, talking about his experience with cotton in many countries of the world, emphasized the role of efficient crop management in achieving higher productivity. He observed that only a good manager can be a successful farmer. Regarding Bt cotton, he noted that Stoneville Pedigree Seed Company is working on genetically-engineered cotton resistant to bromoxynil herbicide. He hoped that varieties with herbicide resistance will be released by Stoneville in 1994 or 1995. These varieties will be very useful for countries like Argentina and Greece where broad leaf weeds are a major problem. He said that Bt cotton resistant to *Heliothis* will be available to farmers in 4 to 5 years. He was of the view that, since the resistant gene will always be present, there are more chances for *Heliothis* to develop resistance to transgenic cotton. He further said that the benefits of transgenic cotton with Bt gene resistant to *Heliothis* cannot be utilized where the crop is attacked by other bollworms along with *Heliothis*. He recommended that new varieties be adopted only after at least 2 to 3 years of testing in their own countries.

Ing. Luis Gimenez from Uruguay gave an overview of cotton production and insect control in his country.

Mr. Jose Infantozzi, El Salvador, reported on strategies for the control of whitefly in El Salvador. He said that insect control consumes a major part of production inputs. Nitrogen doses, varietal resistance and sowing date are crucial for the control of whitefly in El Salvador. Completion of sowing by June 25 is recommended in order to get high yield and avoid heavy insect attack. He reported that, though area under cotton decreased in 1992/93, average yield and total production has increased. He noted that 90% of the 1992/93 produce was not contaminated from whitefly.

Ing. Bayardo Ruiz and Mr. Julio Bustillo Caceres from Nicaragua talked about IPM in Nicaragua. They reported that as a result of better management of insect control strategies in their country, it was possible to curtail the cost of insect control by almost 30% over 1989/90. In 1989/90, the average number of sprays was 26 which cost roughly US$600/ha. In 1992/93, the average number of sprays decreased to 14, thus reducing insect control costs to US$389/ha. Of the US$600, roughly US$395 had been spent on controlling boll weevil, which has now decreased to

US$107/ha. Accordingly, in three years, the total cost of production has decreased from US$1,200 to US$700/ha. This reduction has been possible only through an integrated approach to pest management. They said that area under cotton is decreasing in many countries of the region mainly due to the high cost of insect control. This decline can only be checked by the adoption of less expensive pest control measures. Use of bait sticks on an experimental basis was also recommended.

Mr. Juan Gonzalez Bachini from Peru presented a report on IPM in Peru. In Peru, he said, there is no scarcity of inputs, including water, but farmers do not have money to buy inputs. Hence, cotton is suffering and unfortunately, there is no government program to encourage cotton cultivation. He reported that the average cost of production in Peru is US$1,429/ha of which 20% is spent on insect control, the largest component of the cost of production. Average farm size in Peru is 4 ha; thus, farmers are encouraged to form cooperatives. Mr. Bachini said that the cotton production conditions are different in Peru from other countries. There is no boll weevil or *Heliothis*. The Peruvian boll weevil, *Anthonomus vestitus* Boheman, does appear in cotton, but the population remains below the threshold level. Important components of IPM are seed treatment with Aldrin to control suck-

ing insects, use of Arsentiano for the control of *Alabama* spp., collection of infested squares carrying insect larvae, low doses of pyrethroids on perennial cotton, use of pheromones like gossypliar and short season cotton. As some cases of aphid resistance have been reported in the past few years, there is an urgent need for a new strategy other than chemicals to control *Aphis gossypii*.

Dr. Raimundo Braga Sobrinho from Brazil spoke about management of boll weevil in Brazil. He was of the view that sufficient scientific information is available to control boll weevil effectively and efficiently. What is needed is the implementation of research findings in cooperation with extension workers. Talking about the production regions in Brazil and their characteristics, he highlighted the importance of agronomic practices which, according to him, are the most important tool for boll weevil control. He said that picking and destroying of shed buds which carry eggs and early stage larvae of boll weevil are very important to minimize the population of boll weevils.

Field Visit

May 28, 1993, was devoted to a field visit. The participants were taken to cotton fields around Espinal, Tolima, in Magdalena Valley of Colombia. At one farmer's field, where 475 hectares of cotton, mainly under DPL 61, were grown, the participants were informed that the average number of sprays per season is 10-12, of which usually 6 or more are against boll weevil. *Spodoptera* is also a problem of this area. Colombian pink bollworm, *Sacadodes pyralis*, though it appears at the end of the season, is a major pest and sometimes causes huge losses. Aphids are not a regular pest of this area. Whitefly was also observed in the field but probably below the threshold level for treatment. The crop, grown at row-to-row distance of 95 centimeters with a seeding rate of 12 kgs/ha and 75 kg nitrogen/ha, looked very healthy. It was a peak-boll formation stage.

The participants were also taken to two demonstration plots maintained by GIMP. The major pest at both the sites was *Alabama argillacea*. The variety grown was DPL 61, and all the agronomic treatments except plant protection operations were applied by the grower on the demonstration plots. GIMP was testing its integrated insecticide management techniques. Con-

trol of *A. argillacea* was attempted through the release of *Trichogramma* at the rate of 40 inches/week during the period 30 days to 100 days after planting. This technique helped to delay the initiation of spraying in the treated plots. The treated plots had 1-2 fewer sprays compared with farmers' check plots. GIMP used only selective insecticides. Various types of other beneficial insects (chrysopa, aranas, cicloneda and scymnus) were also recorded.

The field trip also included a visit to a demonstration plot of new varieties grown by Deltacol. Deltacol is a sister company of Delta and Pine Land Company which performs varietal trials to establish the best performing variety before it is promoted among growers. At one of the demonstration plots the participants were shown, Deltacol had grown four varieties: DPL 51, DPL 5415, DPL 5590 and DPL 5614. The crop was very clean and healthy, and it seemed as if DPL 5415 will out-yield the other varieties.

Administrative Issues

An exclusive meeting of the delegates to the conference was held on May 27, 1993, to elect a new president of ALIDA, decide the site of the Fifth

Meeting of ALIDA, decide the theme of the next meeting and resolve funding problems. The outgoing president of ALIDA, Dr. Braga, briefed delegates about the activities of ALIDA in the last two years. He said that the association's activities were affected by constraints of funds. In the absence of funds at his disposal for the association work, he had difficulties approaching the member countries by telephone or fax. Secondly, the responses from the member countries were also not encouraging. He was of the view that if these difficulties are overcome, member countries could be served better by the association.

Dr. Braga proposed generating a continuous source of funding for ALIDA's secretariat by levying some kind of contribution for each member country. The possibility was discussed at length but was not agreed. The delegates were of the view that ICAC should provide funds on a permanent basis to meet the miscellaneous expenditures of ALIDA. Dr. Chaudhry agreed with the delegates that there is a need for such funds but informed the delegates that ICAC does not have any provision in its budget to provide funds on a permanent basis. He noted the example of the Mediterranean region where it was decided that only those persons who are able to meet the necessary costs of the network from their own resources should accept re-

sponsibilities. However, he said that ICAC can help with the process of keeping communications open among members of ALIDA. He also proposed that, on behalf of the ALIDA, ICAC approach the FAO and seek their support for future activities.

Dr. Guillermo Alvarez Alcaraz was elected as the next president of ALIDA for a period of two years.

The possibility of holding the next meeting in El Salvador or Nicaragua was considered, but nothing could be decided as both countries wanted to consult the concerned authorities in their countries before making a commitment. It was agreed that they will inform the president of ALIDA or their decisions by September 1993.

There was discussion on the theme of the next meeting. All delegates admitted that a subject of broad scope, relating to all member countries, should be selected. It was finally agreed that the theme of the next meeting will be "Management of Varieties with Emphasis on Fiber Quality."

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