



IWSS Newsletter

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International Weed Science Society

January 2002

President Duke's Comments

Recent weed-related meetings

Since the July Newsletter, I have been involved in several international meetings that were quite weedy. In June, I attended a NATO Advanced Studies workshop on Enhancing Biocontrol Agents and Handling Risks in Florence, Italy. This meeting, organized by Jonny Gressel and Maurizio Vurro, was attended by almost a hundred international scientists, who spent most of a very intensive week discussing the latest research of this topic. Jonny, a past president of IWSS and Chair of the 3rd IWSS Congress scientific program, made sure that weeds were given equal billing with insects and plant pathogens. The book from the meeting just appeared (IOS Press).

After that meeting, I attended the First European OECD Symposium on Allelopathy organized by Manuel Reigosa in Vigo, Spain. This was the best meeting on this topic that I have attended. A book from this meeting is in the works. In November, I was privileged to attend the biannual ALAM (Latin American Weed Science Society) congress in Maracaibo, Venezuela. The Venezuelan Weed Science Society did an excellent job in organizing the meeting for ALAM. IWSS subsidized the attendance of young weed scientists from Ecuador and Brazil to this meeting. The next ALAM meeting will be held in Manzanillo, Mexico in 2003. I observed that weed science is clearly vibrant and active in Latin America. Bernal Valverde, Ricardo Labrada, and I discussed with participants at a special session ways that IWSS might assist in strengthening ALAM.

Young Scientists Participate in IWSS Short Course

Before the ALAM meeting, IWSS held another short course (Fundamentals of Modern Weed Control with Herbicides) for young weed scientists. This one was for Latin American scientists, with participation from Nicaragua, Costa Rica, Mexico, Colombia, Venezuela, Brazil, Uruguay, Argentina, and Chile. The course was organized by Bernal Valverde and held in San

Jose, Costa Rica. Bernal Valverde has a more detailed commentary of this activity in this newsletter. I gave some of the lectures at the meeting. I was impressed by the thirst for knowledge of these young scientists. Lectures went far into the evening on some of the days. The course was subsidized by a donation from CropLife International. IWSS thanks this organization for their generosity.

Due to the success of the two short course held in 2001 (Thailand and Costa Rica), the Board of Directors of IWSS is considering holding similar workshops in Africa and Eastern Europe in the future. In each of these cases, we will need a local person to volunteer their time and expertise in helping to arrange the activity. If you have a suggestion, please contact Bernal Valverde (bev@kvl.dk) or me (sduke@olemiss.edu).

IWSS will have a public business meeting at the WSSA meeting in Reno, Nevada on February 11, 2002, from 6 until 8:00 p.m. in the Whitney Room. We urge those of you who will be in Reno for the WSSA meeting to take the time to attend our business meeting. Baruch Rubin and Charlie Reinhardt, the Co-Chairs of the Scientific Program Committee for the 4th IWSS Congress will be there. Please come with ideas. After this meeting, we hope to get the preparations for 2004 in Durban in high gear.

It is time for 2002 dues

Our activities cost money. So, please pay your 2002 dues. Instructions for dues payments are provided elsewhere in the newsletter and on our web page. When you renew, please send us your email address. And please let us know if your postal or email addresses have changed.

Your input is requested

Please let us hear from you regarding potential IWSS activities and your interest in participating in them. I will be calling on more of you in the near future for your assistance. Have a good rewarding 2002.

President, Steve Duke

ALAM holds its 15th congress

The Latin American Weed Science Society (ALAM) held its 15th congress in Maracaibo, Venezuela, 26-30 November 2001. More than 450 delegates and invited speakers from 20 countries participated at the meeting co-organized by Universidad del Zulia (in Maracaibo) and the Venezuelan Weed Science Society. A book of proceedings compiles the extended abstracts of invited lectures and abstracts of oral and poster presentations. It will be placed in our web as a PDF file for downloading very soon.

Among keynote speakers, three IWSS officers addressed topics of interest to the Latin American audience. Ricardo Labrada, Past-President and FAO Weeds Officer (Rome) delivered the opening lecture on Current problems in weed management. Dr. Labrada emphasized the need to include improved weed management practices as part of integrated crop management, especially in developing countries where weeds cause severe yield losses despite control efforts, sometimes involving an important share of manual weeding. Stephen Duke (USDA's Natural Products Utilization Research Unit), President of IWSS, lectured on weed management based on natural products, including the foreseeable commercial exploitation of allelopathy. Natural compounds can be used directly as herbicides but most importantly as leads for new chemistries. He also discussed the possibility of producing transgenic allelopathic crops that could be used as tactic for weed management.

The hazards and benefits of herbicide resistant rice varieties in the Latin American context were discussed by Bernal Valverde (Royal Veterinary and Agricultural University, Denmark), Secretary-Treasurer of IWSS. Transgenic glufosinate resistant rice and mutation-bred imidazolinone resistant rice will soon be available in Latin America. The most important perceived benefit of herbicide resistant rice is the possibility to control conspecific red rice (*Oryza sativa*) and other congeneric weedy rices (mainly *O. latifolia* and *O. rufipogon*). The most relevant hazard, however, is the possible gene flow from resistant varieties to weedy *Oryza* species.

Other keynote speakers were Dr. Rafael de Prado (Universidad de Cordoba, Spain), Dr. Albert Fischer (University of California at Davis, USA), Dr. Luis Márquez (Universidad Politécnica de Madrid, Spain), Dr. Julio Medal (University of Florida, USA), and Dr. Gregory MacDonald (also from University of Florida). Dr. de Prado discussed the future of herbicides in the integrated management of weeds in his invited lecture. Dr. Fischer lectured on competitive cultivars as a low-cost, environmentally benign tactic for integrated weed management. Competitive cultivars could decrease the need for chemical control as demonstrated with some

rice cultivars. Dr. Luis Márquez stressed the importance of mechanical control as a key component of integrated weed management. He stated that primary tillage is the basis for successful weed management but in several locations has resulted in severe soil losses and other environmental damages. Improved secondary tillage equipment can be very useful for weed control and new mechanical equipment allows better application of herbicides. Although biological control is an important strategy for vegetation management, very little is being done in Latin America to develop biocontrol agents for important weeds. Dr. Medal addressed the perspectives and limitations of biocontrol of weeds for this region. Finally, Dr. MacDonald discussed management of aquatic weeds, describing types of aquatic weeds and methods currently used for their management, including a limited number of herbicides.

Weed surveys in crops were reported, all indicating ample species diversity. One of them reported 266 species belonging to 169 genera and 64 families associated with coffee production in Cuba. An Acanthaceae species, *Asystasia noliae* was new to science.

The impact of weeds on crop yield continues to be the focus of research in several crops. Interference of *Echinochloa colona* during the entire rice crop cycle resulted in a 49% reduction in yield in Venezuela. Lack of weed control also resulted in an 86% yield reduction in peanuts, 40% in maize, 29% in sugar cane, 84 in eggplant, 90-96% in cotton, and 87% in sorghum.

New herbicide resistance cases in Latin America were disclosed and known cases were further detailed. *Phalaris* spp. and *Avena fatua* resistant to systemic graminicides continue to affect wheat-growing areas in Mexico. There are also populations of *A. fatua* resistant to ACCase herbicides (fops and dims) in Chile. A new case of ACCase herbicide resistance in Brazil was disclosed: *Digitaria ciliaries* resistant to sethoxydim was confirmed in beans fields. In Bolivia, three Sorghum species (*S. sudanense*, *S. vertilliflorum* and *S. saccharatum*) were confirmed resistant to ACCase inhibitors.

Weed shifts have been documented in cropping systems that rely heavily on the use of glyphosate: no-till and glyphosate-resistant soybeans and maize. In Argentina, late-emerging *Solanum chacoense* and *Conyza bonariensis* increased in density in no-till plots; *Parietaria debilis* and *Viola arvensis*, naturally tolerant to the herbicide, prevailed after 4 years of continued use of glyphosate. *Commelina erecta* also thrives in glyphosate-resistant soybean in Argentina and exhibits increased tolerance with plant age. The congeneric species *C. benghalensis* is disseminating rapidly in no-till production in Brazil.

Interest in allelopathy is increasing in Latin America. Researchers in several countries are studying the allelopathic potential of weedy species including *Amaranthus dubius*, *Cyperus iria*, *C. rotundus*, *E. chinochloa colona*, *Finbristylis sp.*, *Pteridium aquilinum* and *Trianthema portulacastrum*. Forages and cover crops (e.g., *Calopogonium mucunoides*) are also of interest regarding allelopathy.

Weedy *Oryza* species (weedy rice, red rice) are becoming a major problem in rice production in several Latin American countries. Researchers from the Universidad Central de Venezuela presented several papers characterizing red rice biotypes of the species *O. sativa*, *O. latifolia* and *O. rufipogon*. Under experimental conditions, weedy *O. sativa* reduced commercial rice yield by about 30%. Ample variability among red rice biotypes from Colombia was also reported.

IWSS sponsors participation of young weed scientists in ALAM congress

IWSS provided financial assistance (USD 500) to three young weed scientists from Latin America to participate in the ALAM congress, held in Maracaibo, Venezuela. **Ms. Ondina Landazuri** is from Quito, Ecuador. She obtained her BS in Biology and Chemistry at Central Univ. of Ecuador in 1993. Since 1995 she has been working at the Charles Darwin Research Station as a volunteer, field assistant and, currently, as a graduate student under the direction of Dr. Alan Tye. **Mr. Renan Gravena**, from Brazil, obtained his BS at the College of Agricultural & Veterinary Sci. of the Univ. São Paulo State, Brazil in 1997, his MS in citriculture at the Polytechnic Univ. of Valencia, Spain in 1999. Currently, Mr. Gravena is a graduate student at the University of São Paulo State. He coauthored five papers presented at ALAM. **Ms. Nubia Correia**, also from Brazil, completed her BS at Univ. of Uberlândia, Brazil, in 1999. She is currently working on her MS at Lavras Agricultural Univ. Following are the abstracts of ALAM presentations by these participants. IWSS congratulates them for their achievement.



Landazuri, O. Ecology of *Rubus niveus* in Santa Cruz Island, Galapagos.

Rubus niveus was introduced to Galapagos about 30 years ago. It is considered highly aggressive and is rapidly spreading in San Cristobal, Santa Cruz, Isabela and Santiago islands, where it out-

competes and displaces native species and crops, in the Galapagos National Park (GNP) and agricultural areas. Basic ecological studies of the species are

needed to design an effective management plan. The density-based distribution of *R. niveus* in the GNP in Santa Cruz Island was determined using a transect mapping method on a 2-ha plot, from November 2000 until June 2001. Reproductive phenology and seed bank dynamics (factors determining reinfestation) were studied, including replenishment of the seed bank, dormancy, longevity and germination of seeds. These factors were related to date of introduction at three sites, plant density and environmental factors such as temperature and precipitation. The relationships were analyzed by a Kruskal Wallis, regression and Tukey. Production of flowers and fruits was lower in the most recent introduction site and was influenced by temperature and precipitation. The seed bank is large and perennial, and replenished throughout the year, November being the month of greatest seed contribution. Germination rate is high (high seed viability) and depends on environmental conditions such as temperature and rainfall.

Gravena, R., M. A. Kuva and R. A. Pitelli. Interference periods of *Cyperus rotundus* in sugarcane (*Saccharum spp.*)

A field trial was carried out in Rafard county, SP, Brazil, to evaluate the critical periods of *Cyperus rotundus* interference in sugarcane. The crop was planted in January 1996 and was harvested in August 1997. Treatments consisted of increasing periods of weed presence or weed control. At the end of each weed presence period, the weed community was evaluated, establishing the importance of each weed population on sugarcane growth. The only species observed was *C. rotundus*, occurring in high densities (more than 1000 shoots/m² at the beginning of sugarcane growth). Even at such high densities, *C. rotundus* caused low reductions on sugarcane yield. When the crop grew entirely with the weed the yield loss was about 10%. Sugarcane could grow with the weed for up to 136 days after emergence, without any significant reduction of productivity. The initial period of control of 25 days was sufficient to secure maximum productivity. Thus only one control of *C. rotundus* between 25 and 136 days, was sufficient to assure the sugarcane yield.



Correia, N. M. and Ferreira de Souza, I. Sorghum straw and imazamox herbicide for weed control in soybeans.

Plant residues or mulch from a winter crop may interfere with weed infestations of in the subsequent summer crop. A field trial was conducted in the

agricultural year 2000/2001 at Uberlândia, MG – Brazil to determine the effect of winter grown sorghum straw and imazamox on weed control and crop development in soybeans planted as a rotation crop. Main plots were residues of three sorghum hybrids (Saara, DK 860 and Ambar) and a residue-free control (winter fallow) and three rates of imazamox: 0 g/ha (untreated control), 15g/ha (half the recommended rate) and 30 g/ha (recommended rate). Without imazamox, the straw of Saara and Ambar were the most efficient in controlling weeds. Weed control by Ambar straw was improved by using the half dose of imazamox; however, at the recommended herbicide dose the best control was obtained in combination with the straw of DK 860. The straw of winter-grown sorghum did not affect soybean plant height, shoot dry matter or yield. Imazamox negatively affected all variables evaluated in soybean.

Weed science courses and workshops

Pakistan Weed Science Workshop.

A six-day training workshop in weed science sponsored by University Grants Commission, Ministry of Education, Government of Pakistan was held from Oct. 1-6, 2001 at NWFP Agric. Univ., Peshawar, Pakistan. Thirty-seven teachers and research workers from different Agricultural Universities, Colleges and Research Institutes participated in the workshop. This was the first course in weed science sponsored by University Grants Commission. (Submitted by Dr. Asif Tanveer, Pakistan.)

IWSS Short Course Held in Costa Rica. The IWSS held its second short course on **Fundamentals of Modern Weed Control with Herbicides** at Hotel Martino Spa & Resort in Costa Rica, 19-23 November 2001. Similar to the first course conducted in Bangkok in May 2001, the Costa Rican course also was financially supported by CropLife International (formerly Global Crop Protection Federation, GCPF). The 13 participants from Argentina, Brazil, Chile, Costa Rica, Mexico, Colombia, Nicaragua, Uruguay and Venezuela. One of the Mexican participants, Dr. Juan Manuel de la Fuente (Monsanto), lectured on *Biotechnologically derived crops*, emphasizing aspects related to herbicide-resistant crops. Mr. Freddy Fernández, Director for Public Relations and Communications of CropLife Latin America, presented the opening talk on *The development of a crop protection product: Herbicides*, coauthored with Mr. Carlos Hidalgo (Dow AgroSciences and CropLife representative).

The program was similar to that of the Bangkok course but adapted to Latin American crops and conditions, including basic topics on herbicide

characteristics, formulation, soil behavior, mode of action and resistance. Drs. Bernal Valverde and Steve Duke, IWSS Secretary-Treasurer and President, respectively, were the main instructors. We were also very fortunate of having IWSS Past President, Dr. Ricardo Labrada, lecturing on *Herbicides and Integrated Pest Management*.

With this course, IWSS continues to reach young weed scientists in its effort to advance weed science and to stimulate weed scientists to become involved in applied research and improve their extension capabilities for the benefit of their own countries and regions. IWSS acknowledges the support of CropLife International. Dow AgroSciences (Costa Rica) provided the required audio-visual equipment.



Participants and instructors of IWSS course on *Fundamentals of Modern Weed Control with Herbicides* during a field visit to the rice farm *El Pelón de la Bajura* in Guanacaste, Costa Rica.

New publications

Weed Biology and Management is a new journal and is the “official English-language journal of the Weed Science Society of Japan.” It will provide weed scientists primarily in the Asian-Pacific region an avenue to publish reviewed research articles, reviews, reports and short notes on all aspects of weed science. The journal began in March 2001 and is published quarterly. Check out the table of contents and find subscription information at www.blackwell-science.com/wbm.

Alien Weeds and Invasive Plants. The main objective of this book is to enable public and law enforcement officers to identify the declared weeds and invaders covered by the recently amended weeds legislation in South Africa. Some of the features of the new book are:

- Descriptions, distribution maps and line drawings of 234 species of alien weeds and invasive plants in South Africa
- All 198 species of declared weeds and invaders, and a complete copy of the regulations concerning their control
- Color photographs of 100 less familiar species

The author is L. Henderson and this 2001 book was published by the Plant Protection Research Institute as Handbook No. 12. Pretoria, South Africa.

Buzzword, by Walton Cook, is a novel involving biocontrol of narcotic plants and public policy about narcotic plants. It was recently favorably reviewed by Jonny Gressel in *Trends in Biotechnology* (December 2001). *Buzzword* is published by Public Policy Press. \$15.95--Quality Paper bound, 380 pp. ISBN 0-9709832-0-4). Toll-free order number: 1-800-247-6553.

Other News

The **International Parasitic Plant Society** (IPPS) was recently created in Nantes (France), and it is now officially registered in Amsterdam as a nonprofit scientific and educational organization. The Society's objectives include:

- Promote the study and understanding of parasitic plants and the exchange of information and transfer of technologies concerning parasitic plants and their control.
- Promote the exchange of biological material relevant to parasitic plant research.
- Form and maintain an international network for the advancement of parasitic plant research and control.

Much of the IPPS activity is dedicated to the biology and control of *Striga*, *Orobanche*, *Cuscuta* and the weedy mistletoes. The IPPS has many common interests with weed science and we would be happy to collaborate with the IWSS, perhaps as an affiliated society, and to coordinate some of our activities with the IWSS.

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Another Pioneer Lost. Reinaldo Forster died in July 2001 in Campinas, Sao Paulo, Brazil. Mr. Forster was the son of Swiss immigrants and received his BS degree in agronomy in 1936. He started working as an agronomist at the Instituto Agronomico in Campinas in 1937 and rose to become the director of the Division of Basic Technical Activities of the institute. Upon retiring from the Institute in 1982, he carried out technical and scientific tasks in EMBRAPA, the national agricultural research organization in Brazil for 11 years. Thus, his contributions to Brazilian agriculture and weed science in particular spanned 56 years.

Mr. Forster was a pioneer in weed science research at the time our discipline was taking shape. Reinaldo was present when the Brazilian Herbicide and Weed Science Society (SBHED) was born and he

was elected president of the society 18 times and vice-president twice. He will be missed in Brazil and beyond.

New Developments

Glyphosate-resistant Italian Ryegrass (*Lolium multiflorum* Lam.) in Chile. Alejandro Pérez J. y Marcelo Kogan A. (Pontificia Universidad Católica de Chile; aperezj@puc.cl) Italian ryegrass (*Lolium multiflorum* Lam.) seeds were collected from fruit orchards at two locations, San Bernardo (SB) and Olivar (OL), that have been treated an average of three times per year with glyphosate during the past 8 to 10 years. Seeds of each population were placed on filter paper in petri dishes and moistened with 5 ml of glyphosate solution at 0, 10, 20, 40, 80 and 160 ppm (acid equivalent). Eight days after treatment (DAT), seedling coleoptile elongation was recorded. Coleoptile elongation of accession collected from SB and OL were four and six-fold less affected after glyphosate treatment, respectively, compared to the susceptible population Tama (TM). Dose-response experiments were conducted at the greenhouse. Beginning at the tillering stage, ryegrass plants received 0; 0.48; 0.96; 1.92; 3.84 and 5.76 kg/ha glyphosate. Plant fresh weight for each pot was recorded and the dose needed to achieve a 50% reduction was determined for each ryegrass population 21 DAT.

SB and OL populations were two and four-fold, respectively, more resistant to glyphosate compared to the susceptible population TM, corroborating observations obtained in the laboratory. After evaluation, the pots were maintained in the greenhouse for plant regrowth, and 20 days later, the number of plants able to regrow was recorded and their fresh weight was determined. Plants from TM population did not regrow at 1.92 kg ia/ha or higher, while plants from SB and OL regrew up to 3.84 and 5.76 kg ia/ha, respectively. The OL biotype presented the highest resistance level of the two populations under investigation.

Editor's Notes. Oops! I failed to give credit where it was due in July. In addition to those credited, I should have thanked Dionisio Gazziero of Brazil and Daniel Dlouitier of Canada for their contributions. All IWSS members are invited to submit items of interest to the Newsletter. Instructions on how to do so are found on the last page.

Coming Events

2002

Feb. 10-13 Weed Science Society of America annual meeting

Reno Hilton, Reno, Nevada

Contact: Joyce Lancaster, Exec. Sec. WSSA, P.O. Box 7050 Lawrence, KS 66044 USA

Email: jlancaster@allenpress.com tel: 785 843-1235, extn. 250 FAX 785-843-1274

March 11-13 European Weed Research Society Workshop on Physical & Cultural Weed Control

Pisa, Italy

Contact: P. Bàrberi, Scuola Superiore di Studi Universitari e Perfezionamento S. Anna, Via G. Carducci 40, 56127 Pisa, Italy

Tel. +39 050 883 449 Fax: 39 050 883 215

Email: barberi@sssup.it Web site: www.ewrs.org/physical-control

June 24-27 12th European Weed Research Society Symposium

Wageningen, The Netherlands

Contact: EWRS Symposium W2002, P.O. Box 28, NL-6865 ZG Doorwerth, The Netherlands

Email: ingrid.sanders@wxs.nl; FAX +31 317 319652

August 5-8 XXIII Brazilian Weed Science Congress

Gramado (near Porto Alegre), State of Rio Grande do Sul, Brazil

Contact: Dr. Erivelton Roman (eroman@cnpt.embrapa.br) or

the Brazilian Weed Science Society (SBCPD) at: (sbcpd@cnpso.embrapa.br)

August 4-9 10th IUPAC International Congress on the Chemistry of Crop Protection - Innovative Solutions for Healthy Crops

Basel, Switzerland

Contact: IUPAC 2000, c/o Novartis CP AG, WRO-1060.1.42, CH-4002 Basel, Switz.; Fax: 44 61 697 7472

Web page: www.cp.novartis.com/iupac2000

August 27-29 3rd IOBC Working Group Meeting for the Biological and Integrated Control of Water Hyacinth

Entebbe, Uganda

Contact: Dr. Martin Hill, Plant Prot. Res. Institute, Private Bag X134, Pretoria 0001, South Africa

FAX: +27 12-329-3278; email: rietmh@plant2.agric.za

August 26-30 3rd World Congress on Allelopathy

Tsukuba, Japan (Tsukuba International Congress Center)

Contact: Yoshiharu Fujii; Fax: +81-298-38-8338; email: isa@affrc.go.jp

Sept. 8-13 11th International Symposium on aquatic Weeds

Moliets, France

Contact: M-H. Montel, Water Quality Res. Unit, Cemagref Groupement de Bordeaux; Fax: +33-5-578-

90801; email: Marie-Helene.Montel@cemagref.fr; Web: <http://www.cemagref.fr/>

2003

March 18-22 19th Asian Pacific Weed Science Society Conference, Manilla, Philippines

Contact: Mr. Lorenzo Fabro, National Crop Protection Center, Univ. Philippines, Los Banos, College, Laguna, Philippines FAX: 6349-536-2409

lfabro@yahoo.com; amb@mudspring.uplb.edu.ph

April 27- May 2 11th Symposium on Biological Control of Weeds, Canberra, Australia

Contact: Sharon Corey; Fax: +61-02-6246-4177; Web: <http://www.ento.csiro.au/weeds2003/index.html>

July 6-11 15th International Plant Protection Congress, Beijing, China

Contact: Wen Liping, IPPC Secretariat, Insti. Plant Protection, Chinese Academy Agric. Sci., #2 West Yuanmingyuan Rd., Beijing 100094, China. FAX: 86 10 62895451; email: cspp@ipmchina.cn.net

web: <http://www.ipmchina.cn.net/ippc>

The IWSS Newsletter is published in January and July to foster communication among and give information to our members and others around the globe interested in Weed Science.
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Thanks to the contributors to the Jan. 2002 issue: Steve Duke, Anis Rahaman, Bernal Valverde, Aldo Alves, Chris Mulder, Daniel Joel, Asif Tanveer and Martin Hill.

Deadline for items for the next Newsletter is 15 June 2002.

IWSS Newsletter by Internet

Our newsletter is available online on our web site: www.olemiss.edu/orgs/iws/DEFAULT.HTM. You will be able to print it as a pdf file. Please notify Steve Duke (sduke@olemiss.edu) if you are willing to have notification of the next newsletter by e-mail rather than have it sent by regular mail. This will speed up your access to the Newsletter and save the IWSS money.

Proceedings CD Now Available

The CD ROM of Proceedings of the **3rd International Weed Science Congress** held in Brazil in 2000 are now available. It contains all of the abstracts found in the printed version, as well as several full-length papers that were not in the printed version. It is available for \$10 USD for individuals from developed countries and will be sent free to scientists from undeveloped countries. Libraries, institutes, and laboratories may request a gratis copy.

Please send your requests with complete mailing addresses to: Stephen Duke, P. O. Box 8048, University, MS 38677, USA or by email to: sduke@olemiss.edu

2004 IWSS Congress

The International Weed Science Society Conference of 2004 is to be held in Durban, South Africa from 19 to 25th June 2004. Every weed scientist should start thinking of attending and contributing to this event. We have sufficient time to prepare for this conference; we can consider a wide variety of weed problems since the program will be wide enough to cover all aspects of weed science.



The Congress will be held at the International Convention Centre which can be viewed at: <http://www.icc.co.za/default.asp>

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Application for Membership -- International Weed Science Society

Membership in the International Weed Science Society (IWSS) is open to individuals of all nations interested in any aspect of weeds and their management. Payment of dues entitles active members to voting privileges and receipt of the IWSS Newsletter and Membership Directory.

Membership fees are:

Individual Membership, US \$10.00 annually

Affiliate Membership (for companies, institutions, and national and regional weed science societies) US \$50.00

Lifetime Membership, US \$200.00.

Payment must be in U.S. currency. *Credit card payments cannot be accepted.*

Your name _____
Company/Organization _____
Address _____
City _____
State/Zip/Country _____
Phone _____ Fax _____ Email _____

Amount enclosed \$ _____

Type of Membership: Individual Affiliate Lifetime

Mail your check payable to the International Weed Science Society and mail to one of three people:

1. In North America:

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2. In the rest of the World:

Bernal E. Valverde
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Agrovej 10, DK-2630 Taastrup, Denmark

3. To your national correspondent or regional representative in local currency. We have such representatives for South America, Central America and the Caribbean, the Middle East and North Africa, West and Central Africa, East and Southern Africa, West Europe, East Europe, India and South and SE Asia, and Central and North Asia. Their names and addresses are found on the IWSS Web site: www.olemiss.edu/orgs/iws/DEFAULT.HTM