



IWSS Newsletter

International Weed Science Society

December 1994

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IWSS Newsletter
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California.

Profile of the New IWSS President

John Terry, currently Vice President of IWSS will succeed Dr. Leon Smith as President of the IWSS in January, 1995.

Terry has been involved in international weed science ever since his graduation from Brunel University, UK, in 1965. His first appointment was with the Tropical Pesticides Research Institute in Tanzania as a weed scientist. This was his introduction to the agriculture of Kenya, Uganda, and Tanzania and the wide range of crops and weeds found in East Africa. Much of his work was on the evaluation of herbicides but he also made specific study of sedge weeds, particularly the control, of *Cyperus rotundus*. In the 1970s he organized two regional weed conferences and was a founder member and first Chairman of the Weed Science Society for Eastern Africa.

In 1971, John joined the Tropical Weeds Group of the Weed Research Organization (WRO) in Oxford, from where he returned to Tanzania until 1975. This was followed by three years in the UK where he was acting head of WRO's Aquatic Weeds Group for 18 months, followed by a period of research on *Cyperus* spp. in the tropical glasshouses. In 1979, he went to The Gambia as a Weed Specialist in the Crop Protection Service, working on adaptive weed research and undertaking a comprehensive weed survey of the country.

Indonesia was his next long-term assignment. Based at the SEAMEO Regional Center for Tropical Biology (BIOTROP), John did research on a British aid project to study the biology and control of *Imperata cylindrica* during 1982-83. He is still associated with a successor to this project

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IWSS President Retires—Reviews Past Two Years in Office

As retiring President of IWSS, I offer a review of my term of office for the last two years. The highlight of this term, which is midway between the first and second International Weed Control Congresses, would be the executive meeting in St. Louis when it was agreed to have members sponsor weed scientists from third world countries. While the success of this proposal is not yet evident, I feel that the idea has considerable merit and with a bit of persistence and effort it will be of considerable help to weed scientists in developing countries as well as the Society. If we are to be truly international/global, we need to reach weed scientists in every country where people are concerned about weeds or where weeds are a problem and that surely must be every country on earth. The Society must have contacts in all these countries and with the help of FAO and our members, I believe we can do this and in the process help one another to learn more

about weeds and ways of managing them. A list of weed scientists in developing countries is being prepared and FAO has already supplied a list of focal points in over 30 countries.

Implementation of the Outcomes and Recommendations from the First International Weed Control Congress (FIWCC) in Melbourne has not progressed as well as I would have hoped, but it is becoming more difficult to get people to carry out such tasks in this world today. However, some progress has been made and three panels are in operation and I have offers of assistance from several people in other areas. With a bit more perseverance, I think we can make considerable progress in this area.

Planning for the Second IWCC in Copenhagen in June, 1996 is going along satisfactorily and I must thank Dr. Jens Streibig for his efforts in this direction. The second circular will be issued shortly and

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IWSS Newsletter

Is the biannual newsletter of the International Weed Science Society. IWSS is a membership organization dedicated to encourage, promote, and assist development of weed science and weed control technology.

Membership fees are US\$10 annually, with lifetime memberships available at US\$200. Subscription/membership information can be obtained from:

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Society Welcomes New President

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which is transferring the technology of *Imperata* management to farmers in Sumatra.

Closure of the WRO necessitated a move to the University of Bristol, Long Ashton Research Station in 1985 and an appointment as Head of the Tropical Weeds Unit. John's work now includes project management and the training of post-graduate students. He continues to travel widely to advise on weed problems throughout the tropics

and is hoping to broaden his project management experience to other tropical pests in the near future. He has made many contributions to weed science literature, including weed identification manuals for East and West Africa.

The IWSS Board and all members welcome Dr. Terry and look forward to working with him during his upcoming term in office. •

Former IWSS President Chairs First Formulations Forum '94

Dr. Chester L. Foy, Professor at Virginia Polytechnic Institute and State University, and former President of both the International Weed Science Society and the Weed Science Society of America chaired Formulations Forum '94. Held in Washington, DC on June 30 and July 1, 1994, it was the first-ever symposium specifically devoted to reviewing developments and issues in agricultural formulations. More than 200 formulations and agricultural chemists and related interests, representing 32 countries and 170 companies, were in attendance. The forum was organized and sponsored as a non-profit activity by International Specialty Products (ISP), Wayne, NJ. Dr. David W. Pritchard, Worldwide Director of Marketing of Agricultural Products for ISP was chairman of the Organizing Committee.

The theme of the very successful forum was "Agrichemical Formulations for the 90's and Beyond." The keynote speaker was Congressman Charles W. Stenhold of Texas, a 16-year member of the House Agriculture Committee and also chairman of the House subcommittee of Department Operations and Nutrition, which has jurisdiction over pesticides, food safety, and nutrition. Congressman Stenholm presented an overview of legislative activities affecting the agricultural industry.

Twenty distinguished speakers presented papers on new and emerging technology, changing market conditions, and expert views of regulatory trends in agricultural pesticide formulations. Specific topics included: trends in pesticide formulation; emerging technology, the bases for new generations of pesticide formulations; water dispersible granules; microencapsulation; formulations for the home and garden market; macro and micro-emulsion technology and trends; the market for inert ingredients; reduction of pesticide drift; protecting active ingredients from inactivation by post-spray environmental factors; influence of structure and surface chemistry on adjuvant performance; enhancing penetration and translocation of systemic actives; inhibiting leaching of pesticides for efficacy and environmental protection' adjuvants—current technology and trends; registration of inerts in the U.S.; European directives on inert ingredients and adjuvants; and encouraging improved pesticide formulations, data protection for inert ingredients. Foy's presentation was entitled, "Adjuvants: Current Technology and Trends."

Papers presented are being peer reviewed and publication by CRC Press of a high quality reference work co-edited by Foy and Pritchard is expected in early 1995. •

—submitted by C. L. Foy

Last Two Years in Review

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an interesting draft program has been arranged.

I must offer my sincere thanks to the members of the Executive Board of IWSS and especially Secretary, Raj Prasad and newsletter editor, Susan Larson. Because of the distances involved, Raj and Susan have to be the main contact with WSSA and other Societies, arrange meetings and venues, put the newsletter together and carryout the main business of the Society.

Susan Larson has done an excellent job compiling and editing the newsletter as well as the directory of IWSS members. The new format of the newsletter is very attractive but we need more contributions from Society members to make the newsletter relevant to a wider audience of weed scientists. A major objective of the Society is to foster weed science on a global basis, and to do this we need to exchange information between as many different weed scientists as possible. Often information which may not seem "big news" to you could be of considerable interest to others, so I implore members to try and produce one item for the newsletter in 1995.

I must also thank Sandoz Agric., Inc. for sponsoring the newsletter in 1994 and Ciba Geigy Ltd., for agreeing to sponsor it in 1995. With costs increasing all the time, it has become necessary to seek sponsorship to keep the newsletter afloat. Because the newsletter is often the only link that many members have with the Society, it is important to keep it going and to make it of interest to as wide a group as possible.

During the past two years, executive members Dr. Larry Foy, Dr. Prasanta Bhowmik, Dr. John Terry, and Dr. Raj Prasad have promoted the Society while attending international meetings such as the International Symposium on Integrated Weed Management at the CCS Haryana Agricultural University, Hisar, India. Also a special meeting of IWSS was held at the 14th Asian-Pacific/10th Australian Weed Conference in Brisbane in September, 1993. I believe more of these types of meetings are needed to promote

IWSS. Contact has been maintained with Dr. Labrada, FAO, Rome who has promoted IWSS at regional conferences and task force working groups. He also supplied the results of his survey on Weed Management Status in Developing Countries for publication in the newsletter (December, 1993) and I thank him for his support.

The IWSS Outstanding Achievement Award was bestowed on Dr. Chester McWhorter and Harry Combellack for their major contribution to weed science at the international level over the past 10 years. I must thank Dr. Bhowmik for reviewing the criteria for this award. He along with Dr. Clyde Elmore now represent IWSS interests on the WSSA International Relations Committee and I'm sure we can expect close cooperation with this group as in the past when Dr. Robert Williams was the representative.

What of the future? If the Society is to survive, I believe that we must consider doing the following: **Generating more income for the Society.** A considerable increase in finance is needed to keep the society afloat or it will stagnate and die. How can this be done? By seeking sponsorships and grants, raising membership fees, running seminars and conferences, publishing books and information.

Motivating members to participate more in the Society. We already publish a newsletter and directory of members, sponsor the IWCC every 4 years and have some panels deliberating on questions raised at the first IWCC. What do members expect from the Society? It seems to be that it is always "a few doing the job of many." Please let us know what you want the Society to do and how we can improve it.

Increasing membership to involve weed scientists in all countries of the world. This is the purpose of the sponsorship program currently being promoted. Can it be done in a better way?

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Donation of Weed Science Journals

If you are interested in donating your used and old issues of Weed Science/Weed Technology/Weed Research or other journals, please contact one of the following:

Prof. V. Nepalia, Dept. of Agronomy, Rajasthan Agriculture College, Rau, Udaipur, India, 313001

Prof. B.D. Choudhary, Director of Research, Haryana Agriculture University, Hisar, India, 125004

Prof. Rajvir Singh, Dept. of Agronomy, G.B. Pant Agriculture University, Western Campus, Modipuram, Meerut (UP), India, 250110

Prof. J.C. Patel, Principal, Gujarat Agricultural University, Navasari, Gujarat, India, 396450

Dr. N. Nimbkar, Nimbkar Agricultural Research Inst., PO Box 44, Phaltan, Maharashtra, India, 415523

Dr. D. Tsedev, State Plant Protection Service, Ulan Bataar 3P, Bruunselbe, Str-9, Mongolia

Prof. D. Ganeshan, Dept. of Agron., Eastern Univ., Chenkalady, Sri Lanka

Dr. T. Htay, Pest & Pesticide Devel. Centre, Mynamar Agric. Service, Yangon, Mynamar, Burma

Mr. I. Aminuddin, Fakultas Pertanian, Univ. Palembang, Jalan Dharampala No. 1A, Palembang 30139, Indonesia

Dr. R. Pradhan, Regional Plant Protection Centre, P.O. Wangdue Phodrang, Bhutan, India

Prof. K. Hameed, Instit de Biologie, Univ. de Tlemcen, BP 111, Tlemcen 1300, Algeria

Dr. S. Hassan, Rice Research & Training Centre, Sakha Kafr El Sheikh, Egypt

Dr. Jorge Garro, Dept de Fitoproteccion, Ministerio de Agricultura, Y Ganaderia, Apartado 10094, San Jose, Costa Rica

These journals will be used in the libraries for research and teaching and the recipients may share the cost of shipping. Your generosity is greatly appreciated by weed scientists in these developing nations.

—Raj Prasad, IWSS Secretary Treas.

Last Two Years in Review

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Involving a wider audience of people interested in weeds (not just weed scientists). There are many people in the community interested in various aspects of weeds, especially from an environmental point of view. How can we involve them in the Society? Weed societies in Australia are flourishing (increasing membership) because they are now catering for people with more than just an interest in weeds of agricultural situations. Activities such as special seminars, workshops, field days, and weed walks and publications, which appeal to various interest groups are involving a wide cross section of the community and at the same time increasing membership of the weed societies. Should we do this in IWSS?

Becoming more involved with FAO, regional and international societies, regional workshops, and other events. Many members are already involved with these, but IWSS does not have the finance to help. However, all IWSS members should promote or "fly the flag" for the Society at every opportunity. We have four sets of an IWSS poster, which can be presented at conferences and meetings around the world. Just contact one of the Executive for a copy.

Involving a wider audience of people interested in weeds (not just weed scientists). There are many people in the community interested in various aspects of weeds, especially from an environmental point of view. How can we involve them in the Society to become more of a Plant Protection Society. Plant protection (crop protection) is currently in a state

of change. Ideas on "integrated pest control" (integrated weed management), "sustainable agriculture," "biological control," have captivated the general public. Objections against the use of chemicals in plant protection are increasing and alternatives are widely sought. Political pressures are being brought to bear on these issues and governments are under pressure to initiate change. As weed scientists we must take stock of these developments and ask ourselves how will they impact on our society and/or how are we going to react.

Reviewing the composition of the Board of Directors of IWSS to more closely follow emerging areas of interest in weeds eg Near East.

These are just some ideas that I would like members to think about and comment on. You may have other ideas that would benefit the Society. Please put them on paper and send to me. I intend to write a discussion paper on this matter in 1995 and I would appreciate your thoughts.

The next General Business meeting of IWSS will be held on Tuesday, January 31, 1995 from 8:00 p.m. to 10:00 p.m. in Seattle, Washington, USA, in conjunction with the annual meeting of the Weed Science Society of America. At this meeting I will pass the gavel of office to Dr. John Terry. All members and interested individuals are invited to attend and participate, but should you be unable to attend, Dr. Terry and I would appreciate your comments in writing or by other communication. I have enjoyed the last two years as President and I hope that you support Dr. Terry as well as you have me. Best wishes to all members of IWSS. •

—Leon Smith

McWhorter Named 1994 USDA, ARS Hall of Fame Winner

Dr. Chester G. McWhorter, now retired from the Southern Weed Science Laboratory at Stoneville, Mississippi, will be inducted into the USDA, Agricultural Research Science Hall of Fame this fall. McWhorter is the only weed scientist to ever receive this honor. The induction ceremonies will be held on November 29, 1994 at the National Arboretum in Washington, DC. Dr. McWhorter's many accomplishments in weed science included pioneering work with herbicide adjuvants and formulations, cutting edge research in herbicide application technology, and outstanding basic research on the physiology and biology of weeds. His research has impacted weed control methods throughout the United States. He is a Fellow and former President of WSSA. •

—from WSSA Newsletter 22(4) Oct. 94

Four Crops Account for Major Pesticide Usage in U.S.

In 1992, field crop production in the U.S. consumed 328,446,000 pounds of pesticide, according to a government report.

Of the four crops listed—corn/maize, soybeans, cotton, and wheat—corn/maize, which was grown on the largest acreage of the four, accounted for 77% of all the pesticides used. Cotton was the most intensively treated crop: each cotton acre received 5.9 separate treatments and had 5.7 pesticides applied at least once during the growing season.

Wheat had the least amount of pesticide applied with 44% of wheat lands receiving no pesticides. All but about 2.5% of the corn, cotton, and soybeans received some type of pesticide treatment. •

Adapted from: **RTD Updates: Cropping Practices**, July 1993.

—from IPPC Integrator, Dec. 94

—WANTED— Newsletter Articles

Members—we need your help in making our newsletter more "newsworthy." Anyone interested in contributing to the next IWSS Newsletter can do so by completing the form found on page 10 of this newsletter. Articles will be accepted in any form, but preferably as a text file on diskette.

APWSS President Invites Fellow Scientists to Attend 15th APWSS Conference

All preparations for the 15th Asian-Pacific Weed Science Society Conference to be held July 24-28, 1995 in Japan are well on their way. The venue is Tsukuba, a recently established science-technology town located 60 km northeast of Tokyo.

It is the center of a large number of public and private research and educational institutions, surrounded by beautiful natural environments such as Mt. Tsukuba and Lake Kasumigaura, the second largest in Japan. Sorry to say, there is a bit of a shortage of entertainment.

Currently, economic and political scenes in Asian-Pacific region are changing and becoming increasingly important in the world. Agriculture is in a state of fluctuation, making weed management a significant but necessary discipline for technological direction.

The theme for the conference reflects the present concerns: Challenging Strategy for Weed Management-Reviewing Today's Activities and Bringing Out Tomorrow's Goal. Relevant symposium is also prepared under the title of "Innovative Weed Management Strategy for Sustainable Agriculture" consisting of two sessions entitled "Weed Problems for Sustain-

able Agriculture" and "Innovative Trends of Herbicide Use for Sustainable Agriculture."

The conference is co-organized by The Weed Science Society of Japan and the Japan Association for Advancement of Phyto-Regulators. The relevant symposium is co-sponsored by Japan International Research Center of Agricultural Sciences, Ministry of Agriculture, Forestry and Fisheries, and Food and Fertilizer Technology Center for the Asian and Pacific Region. Special appreciation is extended to The Asian Tropical Weed Science Fund's cooperative activity in the symposium.

The conference is open to all APWSS members and to fellow scientists with research related to weed science. I believe that it would be most beneficial for you to participate in the conference and to exchange information on recent developments in weed science and technology. I am very much expecting active participation from as many countries as possible.

On behalf of the Organizing Committee, I extend to you a warm invitation to participate in this conference.

Kozo Ishizuka
President, APWSS •

Regulation Urged for Pesticide-resistant Plants

In the U.S., environmentalist groups are urging the Environmental Protection Agency (EPA) to actively regulate new genetically-engineered plants that can tolerate higher levels of herbicide applications. The groups worry that wider usage of these plants could cancel the Agency's revamped goal of gaining reduced usage of agrichemicals nationally.

Several types of plants with increased resistance to commonly used herbicides are currently under development. A strain of cotton that has greater resistance to the herbicide bromoxynil is nearing commercial introduction.

Agricultural scientists point out that these plants are an important development as farmers move away from extensive soil tilling, thereby significantly reducing erosion and polluted runoff, but exacerbating weed management problems. The new plants would tolerate herbicidal treatments that previously harmed crops.

It's not clear whether EPA's authority to regulate pesticides also extends to more pesticide-tolerant plants. Sources within the Agency question whether genetically enhanced plants fall under EPA's jurisdiction. The matter is being studied. •

A New Perspective on Bushland Weed Management —"Urban Noxious Weeds"

Weed invasion into native bushland poses one of Australia's most serious conservation problems. Many familiar weeds are escapes from agricultural land (agrestals) and others are confined to wastelands and highly disturbed sites (ruderals) but many, possibly as much as two thirds of our weed flora, have been deliberately imported into Australia for ornamental or utility purposes. These bush invaders are called environmental weeds, or more simply, community pest plants.

Environmental weeds are plants that readily invade native vegetation, almost always adversely affecting the regeneration and survival of the indigenous flora and fauna. Often a serious invasion will threaten the survival of the whole community. Nowhere is this more evident than in Kakadu National

Park in the Northern Territory where *Mimosa pigra* has rapidly overtaken vast areas of tropical wetland or on the east coast of New South Wales, where Bitou Bush *Chrysanthemoides monilifera* is present in over 60% of the coastal vegetation and on 80% of the state's coastal headlands.

Naturalized species in the Australian flora range from about 5% in the Northern Territory to 31% in Tasmania and overall, constitutes about 15% of the indigenous flora. Of the total weed flora, about half readily invade bushland and probably about a quarter are considered to be serious environmental weeds.

Every state and district in Australia could nominate its own list of environmental weeds because what is weedy

IWSS Thanks Sandoz & CIBA

The International Weed Science Society takes this opportunity to thank Sandoz Agro Inc. and CIBA Plant Protection for their generous support for the 1994 and 1995 issues of the IWSS Newsletter. Funding received from Sandoz will cover costs for the 1994 issues, with CIBA sponsoring 1995. The Society truly appreciates their support in keeping our newsletter in print.

...Urban Noxious Weeds

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in one region may not necessarily be a problem in another. Undeniably, many nominated weeds would be agrestals or ruderals—plants that are readily recognized as "weeds"—but in bushland around urban areas, and increasingly in national parks and wilderness areas, the major weeds are garden escapes.

To compound the problem, many environmental weeds in this category are readily available in local garden centers and some are still used quite regularly in landscape design. A third, often overlooked point of distribution are the local fetes or markets where anything from Wandering Jew (*Tradescantia albiflora*) to Bridal Creeper (*Myrsiphyllum asparagoides*) and Privet (*Ligustrum* spp) can be bought for a few dollars, carefully potted into yogurt containers or milk cartons.

As the great majority of these pest plants are not declared as noxious, there has been no legal impediment to their sale and distribution throughout the community or even farther afield. The costs of controlling environmental weeds (through individual weed eradication and bush regeneration programs) is enormous. Sydney currently spends over \$7 million annually on bush regeneration activities alone and both state and federal

governments contribute \$3-5 million each year to New South Wales for similar bushland rehabilitation programs.

In New South Wales, the introduction of a new Noxious Weeds Act (July 1993), allows local council authorities (LCAs) to declare certain plants as community pest plants and provides them with the 'legal teeth' to enforce the containment and/or removal of those plants on private and public land. The Act allows plants that pose a threat to agriculture, the environment or the community, which have the potential to spread and for which there is a specific action, to be declared as W4 Noxious Weeds. The W4 category is an entirely new concept which allows LCAs to declare plants which pose a special problem in their own areas and to design management strategies within their own needs and resources.

—Abstract from *Weed Society of New South Wales, Australia Seminar. Paper delivered by Judith Rawling, Urban Bushland Management, Sydney, Australia. Reprinted with the author's permission. Judi Rawling has been contracted to carry out weed management programs on sections of the Olympics 2000 site in Sydney.* •

Canadian Funding Ended for SE Asia Center

The Canadian International Development Centre (IDRC) funding for the Southeast Asian Weed Information Center (SEAWIC) headquartered in Bogor, Indonesia, was officially terminated on 17 June 1994, according to the lead story in the periodical WEEDWATCHER.

IDRC's initiative was a major factor in helping launch SEAWIC in December 1985 as a collaborative effort between two other long-running programs at Bogor. SEAWIC was established to collect, analyze, and disseminate information concerning weeds—and related issues—of particular concern to Southeast Asian nations.

During the nine year grant period, IDRC helped support two programmatic phases that led to an expert system on weed identification and weed management; creation of two computer-based software programs; publication and dissemination of the WEEDWATCHER; and production of several weed information leaflets. •

—excerpted from WEEDWATCHER, 25/1994

Introduced Pests Blamed for Huge Control Costs

According to a recent U.S. Congressional Office of Technology Assessment study, more than 4,500 species of "foreign plant and animal invaders" have been introduced—accidentally or intentionally—into the U.S. resulting in pest control costs approaching US\$100 billion.

High on the "invaders" list are gypsy moth, kudzu, boll weevil, purple loosestrife, fire ants, and Mediterranean fruit fly.

Though some invading species accidentally entered the country,

others were intentionally introduced for a reason, only to "escape." Either way, the study calls the introduction of foreign species "a game of biological roulette;" introducing a species is a risky proposition.

In the case of boll weevil, introduced from Mexico 100 years ago, an integrated combination of plant breeding, predator insects, and pesticides is reported to show promise for reducing pest-caused losses in the cotton crop in the state of Texas. •

In print...

Southeast Asian Weed Control. FAO and CAB International jointly sponsored a May 1994 meeting in Kuala Lumpur, Malaysia, for which the Program and Abstracts have now been published as Workshop on Appropriate Weed Control in Southeast Asia. Key research specialists presented papers on a variety of weed management topics. For information, contact: CAB International Regional Office, PO Box 11872, 59760 Kuala Lumpur, Malaysia.

FAO has published a summary report for the Integrated Management of Striga for the African Farmer, Third General Workshop. The October 1993 workshop, held in Harare, Zimbabwe, includes a series of national programs reports, as well as other material. Paperbound, 1994, identified as: W/T4176E/1/6.94/500. From: Publications Div., FAO, Ville delle Terme di Caracalla, 00100 Rome, Italy.

Diagnosing Herbicide Drift and Carryover Injury in Potatoes, Eberlein, C.V., et.al. The publication is intended to address the problems that may occur when herbicides used on crops grown in rotation with potatoes drift onto potatoes or persist in the soil. Extension color plates detail the visual characteristics to look for. The 8-page leaflet is Agric. Exp. Station Bulletin No. 737. For more information, contact: College of Agriculture, Univ. of Idaho, Moscow, ID 83843, USA.

A Handbook for Weed Control in Rice by K. Ampong-Nyarko and S.K. DeDatta, International Rice Research Inst., Manila. 1991. In ten chapters, this book provides practical information on weed management in irrigated rice, rainfed lowland rice, upland rice and deepwater and floating rice. Chapters cover the effects of weeds, identifying 30 weeds and the principles of herbicide use. A special chapter is devoted to especially difficult-to-manage weeds such as *Scirpus maritimus*, *Cyperus rotundus* and *Rottboellia cochinchinensis*. 113 pp. Available from IRRI, Division PR, Information Center, PO Box 933, 1099 Manila, Philippines. US\$17.50 (includes shipping) for developed nations; US\$8.25 for developing nations.

Successful Implementation of Integrated Pest Management for Agricultural Crops defines integrated pest management (IPM) and discusses how it impacts on the use of pesticides in farming. It discusses the implications and use of IPM for home

gardens, presents success stories of farmers adopting and adapting IPM to their individual situations, identifies benefits of funding research for new IPM control methods. The book is essential for crop management practitioners, agricultural researchers, extension agents, farm and pest control advisers, legislators, funding agency personnel, farm and garden writers, farmers, ranchers, students and instructors. Available from CRC Press Inc., 2000 Corporate Blvd. NW, Boca Raton, Florida, 33431, USA. Approx. price US\$75.00, outside USA US\$90.00.

Weed Management for Developing Countries is FAO Plant Production and Protection Paper 120. It is edited by R. Labrada, J.C. Casely, and C. Parker. In this completely new volume it is pointed out that small holder farmers may spend more than 40 percent of their labor on weeding, yet still suffer serious losses. The aim of the book is to ensure that the most relevant information on weed management is available to all involved in helping farmers around the world. The volume comprises 18 chapters offering the latest opinions and information on virtually all aspects of weed management. There are short sections on 20 individual species or genera, with color plates, information on biology and specific control methods. Chapters on weed management practices discuss cultural, biological and chemical approaches and also address aquatic weed management and the economic principles of weed control. Also included are chapters on weed control in selected crops, grouped under cereals, legumes and vegetables, root and tuber crops, fruit crops, oil and fibre crops and industrial crops. There is a comprehensive species index. Emphasis is on cultural and biological control but the chapter on chemical control is an up-to-date review. Available from Publications Division, FAO, Via delle Terme di Caracalla, 00100 Rome, Italy, 1994. 384 pp.

Parasitic Weeds of the World by C. Parker and C. Riches. This book covers the identification, distribution, importance, biology and ecology and control of parasitic weeds of agricultural importance. These include Striga, Orobanche, and Cuscuta species, and some related genera, as well as mistletoes. There is an emphasis on problems in less developed

countries and control options for low resource-base farming systems. The book provides a broad, but not exhaustive review of relevant literature and is aimed at students, researchers, and extension workers involved in weed science, plant biology or crop protection. Available from CAB International, Wallingford, OXON, OX10 8DE, UK. 1993, 344 pp.

Management of Agricultural Weeds in Western Australia, edited by J. Dodd, R.J. Martin, and K.M. Howes. This book is an ideal reference for farmers, students, and others associated with broadacre cropping in southern Australia. The book stresses the need for integrated weed management which relies on the combination of agronomic, biological and chemical methods. If modern agricultural systems are to be sustainable, both environmentally and economically, then the information and principles as set out in this book show the path for the future. Available from Western Australian Department of Agriculture, 3 Baron-Hay Court, East Perth, WA 6151 for A\$50 plus postage. 1994, 280 pp.

Herbicide Resistance in Plants: Biology and Biochemistry, edited by Stephen B. Powles and Joseph A. M. Holtum. Weed control by herbicides is now an integral part of most modern agronomic systems delivering food and fibre. Additionally, it is acknowledged by practitioners, but not by all sectors of the community, that herbicides contribute to sustainable land use in that weed control can be obtained with minimal destructive soil cultivation in many systems. However, the persistent use of herbicides has resulted in the appearance of herbicide resistant weed populations. This adverse development is not dramatic in Australia, with resistant weed populations very numerous and widespread. This is the stimulus for this timely book in which resistance to various herbicides is discussed in detail, as well as the mechanisms responsible for cross resistance and multiple resistance. This important reference book will also prove to be valuable to those interested in evolution and the ability of species to adapt to the management practices imposed by man. Available from CRC Press Inc., 2000 Corporate Blvd., NW, Boca Raton, Florida 33431, USA. 1994, 353 pp. •

Dates and Events

1995

January 2-5, 1995

49th Annual Meeting of Northeastern Weed Science Society

Venue: Boston Marriott, Boston, Mass. USA
Contact: Jeffrey Derr, Virginia Tech., Tel (804) 363-3912

January 5-8, 1995

American Society of Zoology Symposium: Effects on Host Hormones and Behavior

Venue: Adam's Mark Hotel, St. Louis, MO, USA
Contact: ASZ, Tel (312) 527-6697
Fax (312) 527-6640

January 31-February 3, 1995

Weed Science Society of America Annual Meeting

Venue: Sheraton Hotel, Seattle, WA, USA
Contact: R. Parker, Washington State Univ., Rte 2 Box 2953A, Prosser, WA, 99350, USA. Tel (509) 786-2226.

February 5-10, 1995

Gordon Research Conference in Agricultural Sciences: Chemical/Biological Synergies to Reduce Inputs for Pest Control

Venue: Oxnard, CA, USA
Contact: D.A. Fischhoff, Monsanto Co., 700 Chesterfield Parkway North, St. Louis, MO, 63198, USA. Fax (314) 537-6047

February 8-10, 1995

EWRS Biological Control of Weeds Workshop

Venue: Montpellier, France
Contact: Dr. S. Hasan, CSIRO Biol. Control Lab. 34090 Montpellier, France

March 18-April 1, 1995

Pesticide Registration and Evaluation of Pesticide Effects on Natural Enemies

Venue: MARDI, Malaysia
Contact: S. Williamson, Intl. Institute of Biological Control, Silwood Park, Ascot, Berks, SL57TA, UK. Tel 440344872999 Fax 440344875007

March 28-30, 1995

Pacific Rim Pest & Weed Control Expo & Conference

Venue: Singapore
Contact: Advanstar Communications Asia, Ltd., 23 floor, Tai Yau Bldg., 181 Johnston Rd., Hong Kong

April 3-6, 1995

International Symposium on Weed & Crop Resistance to Herbicides

Venue: Univ. of Cordoba, Spain
Contact: J. Jorriin, Depto. de Bioquímica y Biología Molecular, Univ. of Cordoba, Apartado 3048, Cordoba, Spain. Tel 57218439 Fax 57218563

April 11-12, 1995

Understanding Crop Protection Mixtures

Venue: Silsoe College, Bedford, UK

Contact: A.D. Baylis, Zeneca Agrochemicals, Jealott's Hill Research Station, Bracknell, Berkshire, RG12 6EY, UK. Tel 440344424701 Fax 440344413737

May 9, 1995

47th International Symposium on Crop Protection

Venue: Univ. of Gent, Belgium
Contact: L. Tirry, Fac. of Agric. and Applied Bio. Sciences, Coupure Links 653, B-9000 Gent, Belgium. Tel 3292646152 Fax 3292646239

July 2-7, 1995

XIII International Plant Protection Congress

Venue: The Hague, Netherlands
Contact: J.C. Zadoks, C/O Holland Organizing Centre, Parkstraat 29, 2514 JD The Hague, Netherlands. Tel 31703657850 Fax 31703614846

July 10-12, 1995

9th International Symposium on Challenges for Weed Science in a Changing Europe

Venue: Budapest, Hungary
Contact: L. Radics, Kerteszeti es Elelmiszearipari Egyetem, Mezogazdasagi Termeles Tanszek, Budapest, Hungary.

July 24-28, 1995

15th Asian-Pacific Weed Science Society Conference

Venue: Dai-ichi Hotel, Tsukuba Science City, Japan
Contact: K. Usui, Inst. of Applied Biochemistry, Univ. of Tsukuba, Tsukuba, Ibaraki 305, Japan. Tel 81298534748 Fax 81298534605

October 3-6, 1995

Fourth International Symposium on Adjuvants for Agrochemicals

Venue: Sheraton Hotel, Melbourne, Australia
Contact: Bob Richardson, Keith Turnbull Research Institute, PO Box 48, Frankston, VIC 3199, Australia Tel 6137851037 Fax 6137852007

1996

January 21-26, 1996

IX International Symposium on Biological Control of Weeds

Venue: South Africa
Contact: Dr. J.H. Hoffman, Zoology Dept., University of Capetown, Rondebosch 7700, South Africa

February 6-9, 1996

Weed Science Society of America Annual Meeting

Venue: Marriott and Omni Hotels, Norfolk, VA, USA
Contact: WSSA, 1508 W. University Ave., Champaign, IL 61821, USA.

June 25-28, 1996

2nd International Weed Control Congress

Venue: Copenhagen, Denmark
Contact: ICS, PO Box 41, DK-2900, Hellerup, Denmark, or IWSS, C/O IPPC, Oregon State Univ., Corvallis, OR 97331-2915, USA. Tel (503) 737-3541 Fax (503) 737-3080



Application for Membership-International Weed Science Society
 Oregon State University
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Membership in the International Weed Science Society (IWSS) is open to individuals of all nations interested in encouraging and promoting the development of knowledge concerning weeds and their control. The annual membership dues are: Individual, \$10.00; Affiliate Membership, \$50.00; and Lifetime Membership, \$200.00. Payment of dues entitles active members to voting privileges and receipt of the IWSS Newsletter and Membership Directory.

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 International Weed Science Society
 Oregon State University
 Cordley Hall 2040
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**Deadline for June 1995 Newsletter Articles is
May 1, 1995**

**Send newsletter material to:
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IWSS Newsletter Editor
Oregon State University
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Corvallis, OR 97331-2915 USA**

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