



From Editor's Desk

After a very successful meeting in Picturesque Prague, we are now looking forward to another equally attractive meeting in Bangkok in 2020 and expecting maximum participation in a culturally rich country. IWSS strive hard to gather useful information throughout the world catering the needs of weed scientists from across the globe and desire increased contribution from weed scientists. There are many important meetings/conferences/events happening in different parts of the world and we would greatly appreciate contributions to update our members. We have tried our best to compile useful information for our readers in this issue of the Newsletter.



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With the prime objective of IWSS to promote, encourage and interact with regional weed science societies to stimulate scientific activities through regional weed science meetings and trainings to assist young weed science students as they will be the one to carry forward the torch in managing future weed science problems? We have sponsored young weed science students for international conferences of IWSS and other regional societies particularly from developing countries through travel support to participate in their international conferences. For the first time IWSS with the support of host society, decided to support potential young scientists from the developing countries to participate in the 8th IWSS of Bangkok.

The IWSS Board members (Drs. Nilda Burgos, Baruch Rubin, Do-Soon Kim, and myself) have made scientific presentations at several platforms to promote Weed Science activities and to encourage participation in the 2020 IWSC of Bangkok, Thailand for which different committees are established and they are working hard to have an interactive meeting. You can learn more about these activities and other newsworthy developments, in the articles inside this issue.

We are mid-way into our next International Weed Science Congress in Bangkok. The Scientific Program Committee (headed by Dr. Luis Avila of UFPel, Rio Grande do Sul, Brazil), the Local Organizing Committee (headed by Dr. Chanya Maneechote, President of the Weed Science Society of Thailand), and the IWSS Board are working sincerely in preparing for another excellent Congress. The Theme of our Congress will be '*Weed Science in a Climate of Change*'. The meeting dates will be June 22-26, 2020. Mark your calendars for tourism, before or after, to enjoy the Thai culture and beautiful landscape.

For more information visit our website and be ready for 2020 IWSC.

Truly yours,

Samunder Singh, Vice- President, IWSS and Newsletter Editor



IWSS CONSTITUTIONAL AMENDMENTS

Dr. Burgos presented the major constitutional amendments for the approval of General Assembly (GA). The last amendments in the constitution were made on 8 June 2000.

Article IV – Membership proposed amendment to give honorary life membership: the GA modified this as ‘The Board of Directors, based on a unanimous vote, may award lifetime membership to any member, or an individual who is not a member of the Society, who had done exemplary service for the Society’.

Article VI – Officers. The proposed amendment was as: Section 1. The Officers of the Society shall be the President, Past President, Vice-President, Secretary, and Treasurer. Each officer shall serve without financial compensation of any kind.

The GA approved this with the addition of immediate past-president as:

Section 1. The Officers of the Society shall be the President, immediate Past President, Vice-President, Secretary, and Treasurer. Each officer shall serve without financial compensation of any kind.

Article VII – Amendments

Section 2. The GA suggested that for a majority vote for the constitutional and by-laws amendments, a minimum of 60 persons are required. The GA also suggested to remove the last sentence (If it is impossible to obtain a vote from at least a majority of the voting members, the Board of Directors may act on behalf of the membership, provided such action does not affect the legal status of the Society).

Article VII – Amendments

Section 3. The amendment shall be submitted to the voting membership, with recommendations, either at the next General Assembly, or by e-mail/online ballot within 30 days of the voting date. The GA modified this as: The amendment shall be submitted to the voting membership, with recommendations, either at the next General Assembly, or by e-mail/online ballot at least 30 days before the voting date.

The GA also desired to vote on Standard Operating Procedures (SOP); the motion proposed by Dr. Bernal Valverde and seconded by Dr. Franck Dayan was that the BOD will circulate the SOP to the members for voting, 30 days before the voting.

The other items not mentioned above were approved by the General Assembly and are reflected in the amended version of the Constitution and By-Laws.

Amended CONSTITUTION

INTERNATIONAL WEED SCIENCE SOCIETY

RATIFIED February 17, 1992

Revised June 23, 2016

ARTICLE I – Name, Language and Seat

Section 1. The name of the society shall be the “International Weed Science Society” (IWSS) hereinafter called the “Society.”

Section 2. The official language of the Society shall be English. All official documents shall be published in English. English is also the sole language of the International Weed Science Congress.

Section 3. The seat of the IWSS shall be in the state of Oregon, United States of America where it is registered as a non-profit organization.

ARTICLE II – Purpose

Section 1. The purpose shall be to encourage, promote, and catalyze the advancement of weed science and the development of weed control technology.

Section 2. The Society is organized exclusively for educational and scientific purposes, including, for such purposes, the making of distributions to organizations that qualify as tax exempt organizations under section 501(c)(3) of the Internal Revenue Code of 1986 (or the corresponding provision of any future United States Internal Revenue Law).

ARTICLE III – Objectives

Section 1. To encourage and assist in the development of national and regional weed science societies.

Section 2. To organize the International Weed Science Congress every four years and to promote and assist the development of regional meetings, conferences and special symposia on topics of international interest.

Section 3. To promote exchange and participation among individual members and weed science organizations by developing a directory of weed science personnel and projects, and publishing a Newsletter that contains news, events and issues related to weed science as well as a calendar of important weed science future events.

Section 4. To encourage excellence, high standards, and creativity in weed science/technology research.

Section 5. To maintain liaison with relevant national and international organizations for the purpose of identifying, monitoring, and solving existing and emerging weed problems.

Section 6. To promote, encourage, and assist in the education and training of weed science students, researchers, educators, extension workers, practitioners, and the public, in weed science and technology.

ARTICLE IV – Membership

Section 1. Membership shall be open to any person or organization interested in the objectives of the Society. There are three types of memberships: (1) Individual, or voting member, (2) Affiliate, and (3) Sustaining.

Section 2. Individual Member. Any individual interested in participating and supporting the aims and objectives of the Society. There are two types of individual membership – lifetime and annual. Active individual members can attend IWSS open meetings and general assemblies and will have the right to vote on issues pertaining to business matters of the Society. The Board of Directors, based on a unanimous vote, may award lifetime membership to individuals outside of the Society who had done exemplary service for the Society.

Section 3. Affiliate Member. Any weed science Society, Association, Institute, or Department that wishes to support and participate in the functions of the Society.

Section 4. Sustaining Member. Any industry or commercial organization, foundation, development bank, government department, or agricultural organization interested in the objectives of the Society and wishing to provide financial support.

Section 5. Termination of membership. Membership terminates through:
a. death of the individual member or dissolution of affiliate, or sustaining member;
b. resignation by the member;

- c. cessation or expulsion by the Board of Directors; or
- d. failure to pay the established dues for more than two years, and after two months of being notified by the Treasurer.

ARTICLE V – Dues

Section 1. Dues for different categories of membership and method of collection shall be determined by the Board of Directors. Annual membership dues can be paid any time of the year, but the term of annual membership is based on a calendar year (January 1 – December 31).

Section 2. In the event of the dissolution of the International Weed Science Society, the physical assets shall be sold and after payment of all debts, monies possessed by the Society shall be given in equal amounts, without let or hindrance, to the active affiliate members of weed science societies by the Board of Directors holding office at the time of the dissolution. Documents of the dissolved Society shall be kept for ten years after the settlement by a party designated by the Board of Directors or those involved in the settlement.

Section 3. No part of the net earnings of the society shall inure to the benefit of, or be distributable to, its members, trustees, officers, or other private persons, except that the Society shall be authorized and empowered to pay reasonable compensation for services rendered and to make payments and distributions in furtherance of the purposes set forth in Article II hereof. No substantial part of the activities of the Society shall be the promotion or use of propaganda, and the Society shall not participate in, or intervene in (including the publishing or distribution of statements) any political campaign on behalf of any candidate for public office. Notwithstanding any other provision of these articles, the Society shall not conduct any other activities not permitted to be carried on (a) by a corporation exempt from Federal income tax under section 501 (c)(3) of the Internal Revenue Code of 1986 (or any corresponding provision of any future United States Internal Revenue Law) or (b) by a corporation, contributions to which are deductible under section 170(c)(2) of the Internal Revenue Code of 1986 (or the corresponding provision of any future United States Internal Revenue Law).

ARTICLE VI – Officers

Section 1. The Officers of the Society shall be the President, immediate Past President, Vice-President, Secretary and Treasurer. Each officer shall serve without financial compensation of any kind.

Section 2. The election of officers shall be by individual members by postal, e-mail, or online ballot. Election shall be held in May of the Congress year.

Section 3. Terms of office. The President, immediate Past President, Vice-President, Secretary and Treasurer will hold office for four (4) years. These terms of office shall begin at the conclusion of the International Weed Science Congress following the election. All Officers shall be elected at the time of regular election according to the stipulations of the Manual of Operating Procedures (MOP).

ARTICLE VII - The Board of Directors

Section 1. The Society will be governed by the Board of Directors composed of the following members: Immediate Past President, President, Vice-President, Secretary, and Treasurer.

ARTICLE VIII - By-Laws

Section 1. The Society may adopt By-Laws proposed by the Board of Directors or by member societies and approved by the Board of Directors.

ARTICLE IX – Meetings

Section 1. To achieve its goals and objectives, meetings of the Board of Directors may be held at such times and places as may be determined by the President in consultation with the Board of Directors.

Section 2. The Society shall hold a Congress every four years at a location that is voted on by the majority of members and approved by the Board of Directors. The process of selecting a future Congress site is described in the MOP – Bidding for Future Congress Site.

ARTICLE X – Committees and Appointments

Section 1. The President, in consultation with the Board of Directors, may appoint individuals or committees to conduct activities of the Society.

Section 2. The Chair of each Committee will work with the Board of Directors in defining or redirecting the goals and objectives of the Committee to better support the goals and function of the Society. Proposed changes to Committee composition and function will be approved by a majority vote of the Board of Directors.

Section 3. The standing committees of the Society shall be:

1. Finance
2. Nominations
3. Awards
 - a. Outstanding International Achievement Award
 - b. Student Awards
 - c. Lifetime Achievement Award
4. Constitution, By-laws and Operating Procedures
5. Newsletter Editorial

ARTICLE XI - Accounting Period

Section 1. The accounting period shall be from January 1 to December 31.

ARTICLE XII – Amendments

Section 1. Any group of at least five voting members of the Society may propose an Amendment of the Constitution.

Section 2. The Constitution and By-Laws may be amended only by a majority vote of the membership. If it is impossible to obtain a vote from at least a majority of the voting members, the Board of Directors may act on behalf of the membership, provided such action does not affect the legal status of the Society.

Section 3. The amendment shall be submitted to the voting membership, with recommendations, either at the next General Assembly, or by e-mail/online ballot within 30 days of the voting date.

Section 4. Adoption of proposed amendments shall require a majority affirmative vote of those voting on the amendment.



MANUAL OF OPERATING PROCEDURES

International Weed Science Society

Revised June 8, 2000

Revised June 23, 2016

CHANGES IN OPERATING PROCEDURES

This document contains general and specific guidelines for the successful and efficient operation of the Society. Changes to these guidelines may be made, as needed, upon recommendation of the Constitution and Operating Procedures Committee and subsequent approval by a majority vote of the Board of Directors. Any member or group of members may submit proposed changes to the operating procedures to the Constitution and By-Laws and Operating Procedures Committee.

Changes may be acted upon by the Board of Directors at any of its meetings, or by the assembled membership during the quadrennial IWSS congress.

BOARD OF DIRECTORS

The Board of Directors shall:

1. Be responsible for changes in the Manual of Operating Procedures (other than the Constitution and By-Laws) after review and recommendation by the Constitution, By-Laws, and Operating Procedures Committee.
2. Appoint the Chairperson of the Constitution and Operating Procedures Committee to serve for a term of four years.
3. Review and approve the list of nominees that was submitted by the Nominating committee
4. Appoint the Newsletter Editor to serve for a term of four years.
5. Review and confirm IWSS award recipients as recommended by the Awards Committee.

NOMINATION AND ELECTION OF OFFICERS

1. All IWSS Officers (President, Vice-President, Secretary, Treasurer) shall be elected by the voting members via electronic voting process every four years. This change will take effect during the 2020 elections, except for the Vice-President elected in the current year (2016) who shall proceed to serve as President in 2020 – 2024, as stated in the Constitution at the time of the election. The incumbent Vice-President elected in 2020 will not become President at the end of the term unless directly elected for the charge in 2024.
2. The Nominations Committee shall solicit, and present, at least two candidates for each position to the Board of Directors. A maximum of three candidates will be included in balloting.
3. In case there are more than three candidates for a position, the Nominations Committee will rank each candidate according to the following criteria:
 - a. President – must have served previously in a role of great consequence to the Society, for example: served as an Officer of IWSS, Chaired the Scientific Program Committee, served in the Finance Committee, or Chaired the Constitution and By-Laws Committee. Previous leadership roles in a regional or national society, in addition to having served the IWSS as mentioned above, will be a great asset of the candidate.
 - b. Vice-President – must have served in a leadership role in a national or regional society.

- c. Secretary and Treasurer – must possess the necessary technical, scientific, and personal aptitude and dedication to performing the duties and responsibilities of these positions.
 - d. Each candidate must submit a one-page biodata with a photo to the Nominations Committee.
4. The Board of Directors shall review the qualifications of candidates and approve the candidacies by a majority vote. In case there is only one candidate, the Board will review the qualifications and approve the candidate for balloting to give the members a chance to know the candidate and indicate their vote of confidence.
 5. Solicitations for candidates shall be initiated no later than three months from the start of election.
 6. Review and approval of candidates by the Board shall be done in April of the Congress year. Thereafter, the Secretary shall submit the names and biodata of candidates to the Webmaster who will enable the online voting process.
 7. The election shall be held for two weeks, ending no later than 30 days before the Congress starts.

GENERAL ASSEMBLY

1. The Board of Directors shall hold a General Assembly in conjunction with the International Weed Science Congress. All members of the IWSS and others invited by the Board of Directors shall be admitted to the General Assembly.
2. The General Assembly shall be presided by the President, or by the Vice-President when the President is absent, or by the Secretary when both the President and Vice-President are absent.
3. At the General Assembly, the membership shall receive the latest annual reports from the President, Secretary, and Treasurer. Reports from previous years should be readily available for consultation if required by the membership. The assembly also discusses and decides on member-submitted motions, including requests for amendments to decisions previously made by the Board of Directors, votes on significant issues submitted by the Board of Directors, approved changes in membership dues, By-laws or the Constitution.
4. Voting is by simple majority except in the case of dissolution of the Society that requires the approval of at least two-thirds of the quorum. The quorum for the meeting of the General Assembly shall not be less than 50 members of the Society at the first call. If a quorum is not reached, a second call shall be made within 30 minutes; at which time, the decision shall be made with the members who are present.
5. The General Assembly recommends the venue of the next IWSC, after an open vote and according to the MOP, to the Board of Directors who will make the final decision based on all information contained in the bid.
6. Minutes of the General Assembly shall be recorded by the Secretary or a person designated by the presiding officer. The Board of Directors shall approve the minutes and distribute them to the membership by including them in the Newsletter and in the society's website.

DUTIES OF COMMITTEES

Unless otherwise stated, Committee members shall serve on four-year terms, in parallel with the timeline of the International Congress.

Constitution, By-Laws, and Operating Procedures Committee

1. Review the Manual of Operating Procedures, as well as the Constitution and By-Laws once a year, and develop recommendations for improvements or changes.
2. Once a year, remind the Officers and Chairs of committees to consult the Constitution, By-Laws, and Manual of Operating Procedures regarding their specific duties. Likewise, the Committee shall solicit recommendations, consolidate these ideas, and submit to the Board of Directors for discussion and further action in the next Board meeting.
3. Receive copies of the minutes of the Board meetings and reports of all committees and take appropriate action on all recommendations regarding changes in the Manual of Operating Procedures.
4. Prepare ballots for proposed amendments to the Constitution and By-Laws, and after approval by a majority of the Board of Directors, send to the Secretary to be reviewed and to the Webmaster for circulation to the membership.
5. In December of each year, make all authorized revisions of the Manual of Operating Procedures and forward to the Secretary for uploading to the IWSS website.
7. Perform an appellate function on behalf of the President; in this respect the Chairperson shall serve as an ex-officio member and parliamentarian of the Board of Directors with no voting rights.
8. Attend all meetings of the Board of Directors.
8. Prepare a report of the committee's activities and recommendations to be presented to the Board of Directors for inclusion in the minutes.

Nominations Committee

The Nominations Committee shall:

1. Be Chaired by the Past President, and composed of two other members selected by the Chair, and approved by the Board of Directors. Each committee member must be active members of IWSS and shall represent a different Continent.
2. Select nominees for IWSS Officers from the general membership and present these for approval by the Board of Directors. Self-nominations are accepted.
3. The slate of candidates for IWSS Officer shall include no more than three for each office to be filled at the next International Congress.
4. The Chairperson shall ask the nominating Committee member to submit a one-page biographical sketch of the nominee qualified for the position to be filled. The total list of nominees shall be emailed to each member of the Committee. Each member shall rank the nominees and the top three shall be submitted for Board approval.
5. Candidates for IWSS Office will be voted on by active members. See the section on **Elections**.
6. The Nominating Committee shall also present to the Board of Directors, at least two candidates for each Committee Chair position to be filled. The Board of Directors shall then vote on these candidates.

Outstanding International Achievement Award Sub-Committee

The Outstanding International Achievement Award is to recognize significant contributions to international weed science. Outstanding contributions must be in at least three of the following areas: Research,

Extension, Teaching, Publications, Administration, and Service to Regional Societies and/or the International Weed Science Society, or Involvement in industry or commercial sectors.

The selection committee shall consist of the IWSS Board of Directors plus two external members appointed by the Nominations Committee Chair. The Committee shall be chaired by one of the external members. Nomination packets should be sent to the Committee Chair.

The recipients will be selected according to the following criteria:

1. Must have been active in Weed Science but need not be a member of IWSS.
2. Must be nominated by a member of IWSS. Self-nominations are not acceptable.
3. The nominating letter and supporting materials (including two letters of support, a complete curriculum vitae, publication record, employment history, current position, academic credentials, other awards and honors, and justification) must explain in general and in specific terms the nominee's outstanding contributions to international weed science beyond its call of duty.
4. Must have contributed to, or been active in, international weed science for at least 10 years.
5. Must not be a current elected officer of the Board of Directors nor current member the Awards Committee.

The Awards Committee shall solicit nominations for the Outstanding International Achievement Award. The award will be given only when suitable candidates are identified. Winners will be decided by overall ranking according to the selection criteria.

Up to four awards will be given at the Congress. The number of awards to be given shall follow the formula: $N-2$ where N = the total number of qualified nominees.

All awardees will be honored during the IWSSC. Packets of nominees who are not chosen will be retained and carried to the next round of selection provided that their documents are updated.

The Outstanding International Achievement Award Committee shall serve on a four-year term, with members rotating off after each Congress.

Lifetime Achievement Award Sub-Committee

A Lifetime Achievement Award will be given during the Congress year. This will be given to an individual who hails from the region where the Congress is held and will be chosen by the Local Organizers. The Local Organizing Committee Chair shall determine the composition and Chairmanship of this Committee. This special committee shall establish its own selection criteria, and choose the recipient, independent of the IWSS Board of Directors.

The Lifetime Achievement Awardee shall receive a plaque from the IWSS.

Student Awards Sub-Committee

This is a Travel Grant Award supported by special funds allocated by the International Weed Science Society, National or Regional Weed Science Societies, and other entities desiring to promote and support student participation in the Congress. The Student Awards Committee shall be composed of at least three, and not more than five, members. Each society contributing to the award will appoint a representative to be a member of the Selection Committee. Additional members will be appointed by the IWSS President. The IWSS representative shall serve as the Chair of the Committee. Members of the committee should be individuals who are recognized for excellent contribution to the field of weed science.

Each committee member shall sign a Disclosure of Conflict-of-Interest Statement and shall not judge students whom they had mentored or advised, or with whom they had collaborated.

Solicitations for this award will be disseminated in July of the year prior to the Congress, with the deadline of submission of student papers set on January 1 of the Congress year. The award will be based on the quality of research conducted by the student and proposed to be presented at the Congress.

The following qualifications and requirements will apply:

1. The candidate must be enrolled as a M.Sc. or Ph.D. student up to one year after completing a degree related to weed science as of January 1 of the Congress year.
2. A five-page manuscript, with the candidate as first author, describing the candidate's own original research including tables, figures and photos (PDF file, 12 pt font, 1.5 line spacing, and 2.5-cm margin all around), with Abstract, Introduction, Materials and Methods, Results and Discussion, and References.
3. The application packet should also include a letter of commitment from the major Professor, or institution, to provide additional travel support should the student receive the award, curriculum vitae of the student, and a rough estimate of travel cost to the Congress venue.
4. The application packet should be sent via e-mail in one PDF file, no later than January 1 of the Congress year, to the IWSS Secretary who will examine its conformation to the rules. Packets not following the rules will be rejected. Qualified packets will be sent by the Secretary to the Chair of the Selection Committee and its members. Late applications will be rejected.
5. Manuscripts will be evaluated by the Graduate Student Award Committee based on the following merits: 1) quality of work (methodology, materials used, etc.); 2) novelty or innovation; 3) relevance or contribution to the discipline of weed science; 4) quality of the manuscript itself.
6. The committee shall decide on the most unbiased process of evaluating the student papers. In case of tied rankings, the Chair shall reconvene the committee to decide on the best approach to break the tie.

Each committee member will rank the manuscripts from highest to lowest according to the established criteria. Each member will then submit their rankings independently to the committee Chair (IWSS representative), who will tally all the scores. The Committee Chair will then submit the scores and overall rankings to the IWSS Board of Directors. The scores will be reviewed, and ratified, by the Board of Directors. The winners will be announced by the IWSS President no later than March 1st of the Congress year.

The student submitting the most outstanding paper will receive the "**IWSS Larry Burrill Graduate Student Travel Award**", which covers all expenses to attend the Congress.

All other awardees will receive support according to availability of funds, aiming at but not committed to, providing 50% of travel, 50% of a modest accommodation available for up to six nights, and 100% of registration fee. The Board of Directors can change the level of support according to the availability of funds.

The top five students will receive a plaque of recognition for Best Paper and a Certificate for the Travel Grant Award. The plaque for the top-ranked student will indicate the special honor of being the **Larry Burrill Awardee**. All other awardees will receive a Certificate for Travel Grant Award.

Finance Committee

The Finance Committee shall consist of the Treasurer (Chair), the President, and two others appointed by the President. The Finance Committee will be responsible for directing the affairs of the Society in a way that provides the financial resources to meet the goals of the Society. The Finance Committee members shall serve for a four-year term.

The Finance Committee shall:

1. Analyze the financial situation of the Society and develop a long range financial plan for sound and orderly growth of the Society.
2. Develop recommendations for a calendar year budget, financial reserves, investments, and dues for all levels of membership annually for approval by the Board of Directors and subsequently presentation at the annual meeting.
3. Receive all requests for expenditures for non-budgeted items before payment.
4. Develop approval and reporting processes for all non-recurring expenditures (primarily travel).
5. Participate with the Treasurer for the audit at the end of the four-year period.
6. Generate more revenue through a pro-active campaign with individual members and the donor community.
7. Work with the Board of Directors to increase membership and ease the collection of members' annual dues by encouraging regional societies to collect dues in local currencies and exchange one lump sum into US dollars.
8. The Finance Committee Chair shall play a role in financial management of the IWSS Congress and will work with the Local Organizing Committee in raising funds for the Congress.

Newsletter Editorial Committee

The Newsletter Editorial Committee shall be comprised of a Newsletter Editor (Chair), and at least two other members representing different world regions. The Newsletter Editor shall be appointed by the Nominations Committee and approved by the Board of Directors. The Editor shall appoint the Editorial Committee members and present these to the Board of Directors for approval.

The Newsletter Editor shall:

1. Maintain a Newsletter Information Network comprised of persons appointed by the Newsletter Editor from across the globe that may provide material for the Newsletter.
2. Collect information to keep the membership of the Society aware of various activities including events of the IWSS and national or regional Societies and relevant news in the academic and industry realms; retirements; awards; Obituaries; etc.
3. Obtain appropriate digital images for use along with Newsletter articles.
4. Electronically assemble and edit submitted articles and work with the Webmaster for uploading the Newsletter to the IWSS website.
5. Prepare a report for the Board of Directors regarding significant accomplishments of the Newsletter, summarize newsletter activities at the business meeting, and regularly encourage

member participation in publishing information in the Newsletter.
The Editorial Committee members shall:

1. Submit at least one article from his/her region to the Newsletter Editor for each issue of the Newsletter.
2. Maintain contact with key members of his/her regional society to keep abreast with recent developments.

Verification of accuracy of content, securing permissions, and verification of non-infringement of copyrights of submitted articles shall rest upon the Newsletter Editor and the Editorial Committee members.

PUBLICATIONS

The IWSS shall publish a Newsletter twice a year (April and October). Publication of the Newsletter shall be the responsibility of the Newsletter Editorial Committee. The Board of Directors shall approve the content of the Newsletter prior to publication, but the editing the content is the sole responsibility of the Newsletter Editor and the Editorial Committee.

The IWSS shall maintain an updated website, under the oversight of the Secretary. The structure and content of the website shall be approved by the Board of Directors prior to publication.

DISPUTES

In the case of a dispute that is not covered by the Constitution, By-Laws or Operating Procedures, the decision rests with the Board of Directors acting on behalf of the membership.

OPERATING PROCEDURES FOR THE IWSS CONGRESS

A document that outlines the main features of a quadrennial IWSS Congress is available to any individual or national or regional weed science society that wishes to prepare an invitation to host a Congress. A copy may be obtained from any member of the Board of Directors.

Revised June 23, 2016



BY-LAWS

INTERNATIONAL WEED SCIENCE SOCIETY

RATIFIED February 17, 1992

Revised June 8, 2000

Revised June 23, 2016

ARTICLE 1 – Membership Fees

Section 1. Membership fees for individual, affiliate, and others shall be established by the Board of Directors as recommended by the Finance Committee.

ARTICLE II -Duties of Officers

Section 1. The President shall be the executive officer of the Society. He/She shall act as chairperson of the Board of Directors; carry out the spirit of the Constitution and the decisions of the Board of Directors, prepare an agenda and preside at all meetings of the society and appoint Chairs of standing and special committees; appoint members of committees based on recommendation from committee Chairs; appoint an external auditor at the end of four-year cycle; and perform other usual duties of the office.

Section 2. The Vice-President shall perform the duties of the President if the President cannot serve and shall perform other duties as requested by the President or the Board of Directors. The Vice-President shall also serve as the Society’s Foreign Liaison; represent regional opinions during the Board meeting; provide regional linkage; formulate activities that can be done to increase and maintain visibility of the Society; and work together with the Treasurer to maintain contact with donors or sustaining members between Congresses. The Vice President shall prepare a report of liaison activities and present it at the annual meeting of the Board of Directors.

Section 3. The Secretary shall prepare minutes of the Society and Board of Directors meetings; prepare and maintain an up-to-date list of officers; other members of the Board of Directors and members of committees; send regular communications to members pertaining to business matters of the Society; work with the President in setting up meetings and agenda, schedule and arrange locations for Board meetings, keep minutes during meetings, and disseminate minutes; work with the webmaster on keeping the website up-to-date; archive information, be the “memory” of the Society; keep track of the constitution and constitutional amendments, keep track of procedures and *modi operandii*; work with local Congress organizers in preparing the circulars; work with the Treasurer in keeping a current membership database and listserv for general communication to which both have access at any time.

Section 4. The Treasurer shall be responsible for day-to-day activities pertaining to financial matters, filing of income tax returns, and documentation of financial transactions. Specifically, the Treasurer shall: keep an updated membership database and communicate with the Secretary to keep the database current; network with potential donors, keep abreast with donor information; serve as the Chair of the Finance Committee; maintain an active membership by establishing a schedule of payment reminders; and link with sustaining societies that collect dues for IWSS. At the end of the term, the Treasurer shall undergo a financial audit.

Section 5. The immediate Past-President shall serve as overall Chair of the Awards Committee; Chair of the Nominating Committee; and member of the Board of Directors during the term following the end of office. As overall Chair of the Awards Committee, the Past President shall appoint the Chair of the Graduate Student Travel Award Sub-Committee and serve as Chair of the Outstanding International Achievement Award Committee as stipulated in the MOP. In case the immediate Past-President cannot perform this function, the current President shall assume the role of the Past-President, or nominate a replacement, after consultation with the Board of Directors.

ARTICLE III - The Board of Directors

Section 1. The Officers of the Society shall comprise the Board of Directors.

Section 2. The Board of Directors shall meet at least once a year to conduct the business of the Society in accordance with the Constitution and By-Laws.

Section 3. The Board of Directors shall have power to incur expenditure of funds in pursuance of the objectives of the Society. The annual budget will be prepared by the Treasurer and Finance Committee and authorized by the Board of Directors. Funds not included as line items in the budget may not be spent without prior written authorization by a majority of the Officers after consultation with the Finance Committee.

Section 4. The Board of Directors shall call for nominations of Officers not less than three (3) months before elections.

Section 5. The selection of candidates for President, Vice-President, Secretary, and Treasurer shall be made by the Board of Directors from those nominated by members of the Society or the Nominations Committee. As much as possible, the candidates for President and Vice President shall not be from the same *world* regions.

ARTICLE IV – Quorum

Section 1. A simple majority (half, plus one) of the Board of Directors, shall constitute a quorum for transaction of business. In the event a quorum is not obtained, the decisions of the Board of Directors must be ratified in writing by a majority of the remaining committee members.

ARTICLE V - Amendments

Section 1. These by-laws may be amended by a majority vote of the members present at the General Assembly, or by a majority of all votes returned within 30 days after an electronic/online ballot is conducted.

Section 2. No amendment shall be put to a vote unless written notice has been sent to each member via electronic mail or posting in the IWSS webpage at least 30 days before it is to be voted on, and the proposed amendment stated in said notice.

ARTICLE VI – Authorization

Section 1. The adoption of this Constitution and By-Laws shall render null and void all previous rules and regulations of the Society.



AUSTRALIA

Abiotic stress tolerance and yield improvement in crops

Dr. Surya Kant, a senior Research Scientist at Agriculture Victoria in Horsham, Australia, was invited by Haryana Agronomists Society and International Weed Science Society to deliver a talk on abiotic stress tolerance and yield improvement in the Department of Agronomy, CCS Haryana Agricultural University, Hisar on April 4, 2018. Dr. Suryakant did his PhD from HAU Hisar and PDF from Ben-Gurion University of Negev, Beersheva, Israel (2002-2006), Research Associateship from University of Guelph, Canada (2006-2011) and joined Agriculture Victoria in 2011 has expertise in plant phenomics, molecular biology,



genomics, physiology and agronomy and researching on improving multiple traits such as nitrogen use efficiency, abiotic stresses (salinity, drought, and heat), flowering time, stay green, yield and quality improvement in wheat, barley, canola, safflower, pulses, rice and corn. He discussed the role of phenomics in improving nitrogen and water use efficiency, response of wheat to elevated CO₂, salinity tolerance and designer wheat improvement for tolerance to abiotic stress and accelerated precision breeding of high oleic safflower. His team specialized in digital phenotyping, which is

automatic, more reliable and efficient compared to manual phenotyping, which is laborious, destructive and less reliable. They used UAV phenotyping for measuring traits of 270,000 precision sown wheat plants in 6 ha field trials for water stress; 1200 wheat varieties for salt tolerance and wheat performance under control condition with enhanced CO₂ level and nitrogen use efficiency. Their group also characterized the role of OsENOD93 gene in rice for higher growth and yield, especially under low nitrogen conditions due to greater transport of amino acids from roots to shoots. Similarly, they have identified several genotypes of canola for tolerance to water stress as well as over expression of IPT gene in canola and wheat that

increased yield by 8-15% in wheat and 10-17% in canola under irrigated and rain-fed conditions, respectively.

In a three-year study (2012-2015) with 6,800 diverse wheat varieties collected from across the globe that had large differences in height (dwarf to 2 m), diverse phenology (60 days difference in heading, 45 days difference in physiological maturity), and various plant architectural, spike shape and colour variations as well as differential response (positive for 7-12 cultivars) for elevated CO₂ level. These large variations can easily be exploited in wheat improvement to better manage different levels of stress, disease resistance, higher yield and better quality. Dr. Suryakant



Samunder Singh introducing Dr. Surya Kant (L) for his presentation before students and faculty members of Agronomy Department, HAU Hisar

studied the phenotypic potential of 433 diverse genotypes of safflower collected worldwide for evaluation under nitrogen, water and salt stress to select the traits for higher yield and super-high oleic content for industrial applications. He also observed that some accessions had higher heat tolerance and outcompeted weeds. Dr. Samunder Singh, Vice-President, IWSS congratulated him for his sustained efforts in the best use of phenotyping for selecting agronomic traits for stress tolerance and his significant achievements for which he was honored with Norman Borlaug Impact award at Parliament house, Melbourne, 2015; Statewide achievement award for science excellence in plant phenomics capabilities, 2016 and Victorian Wheat Research Foundation Award for Research Excellence to prominent scientist, 2017. (Photos credit - Dr. Samunder Singh)



BRAZIL

***Conyza sumatrensis*: a new case of multiple resistance in Brazil**

Sumatran Fleabane (*Conyza sumatrensis*) is a dicot weed of the Asteraceae family. In Brazil, this weed first evolved multiple resistance to 5 herbicide sites of action in 2017 in Soybean fields, located in Assis Chateaubriand – Paraná State and subsequently multiple resistance has to herbicides in the Groups PSII inhibitor (Ureas and amides) (C2/7), PSI Electron Diverter (D/22), PPO inhibitors (E/14), EPSP synthase inhibitors (G/9) and Synthetic Auxins (O/4).

These particular biotypes are known to have resistance to 2,4-D, diuron, glyphosate, paraquat, and saflufenacil and they may be cross-resistant to other herbicides in the Groups C2/7, D/22, E/14, G/9, and O/4.

Greenhouse trials comparing a known susceptible Sumatran Fleabane biotype with this Sumatran Fleabane biotype have been used to confirm resistance.

Complete report can be found in the International Survey of Herbicide Resistant Weeds website: <http://www.weedscience.org/details/Case.aspx?ResistID=17135>

Research is underway to elucidate the mechanisms of resistance present in these *C. sumatrensis* biotypes with multiple resistance. At this moment, actions are being taken to monitor the areas where the resistant biotypes were collected as well as other areas with suspected resistance. This work has been carried out by Camila Ferreira de Pinho (UFRRJ), Pedro Christoffoleti (ESALQ/USP), Aroldo Machado (UFRRJ), Claudia De Oliveira, (UFRRJ) Jéssica Leal (UFRRJ), Amanda Souza (UFRRJ) and Luiz Zobiolo (Corteva Agriscience™, the Agriculture Division of DowDuPont™).

Camila Pinho camilafepi@hotmail.com

Weed Contest: From the USA to Brazil

The Weed Contest is a long standing tradition of annual competition of Weed Science students from various universities in the Southern Weed Science Society, USA since the early 1980s. It has since been practiced also by other regional Weed Science Societies of the US (*i.e.* North Central and the Northeast) and a National Weed Olympics has been held twice since 2011. This exciting and highly challenging educational activity has now taken roots in Brazil, thanks to the initiative and leadership of Dr. Carlos Schaedler, a former graduate student from the Federal University of Pelotas (UFPEL), Rio Grande do Sul. Dr. Schaedler did his one-year sandwich Ph.D. program at the University of Arkansas, Fayetteville, USA in 2010-2011 under the mentorship of Dr. Nilda Roma Burgos. During his stay at the University of Arkansas, Carlos participated in the Weed Contest and placed 9th overall. The value of this activity inspired him to start the same in Brazil. Thus, the Brazilian Weed Contest was born in 2015. This has been made possible by the collaboration among at least eight universities from various states across the country, the Brazilian Weed Science Society, and the private agricultural industry led by Dow AgroSciences.



The third National Brazilian Weed Contest was held on November 20, 2017 at the Dow AgroSciences research station in Mogi Mirim, Sao Paulo State. Dr. Burgos, President of the International Weed Science Society, was invited to witness the event. The contest was comprised of five categories:

- 1) weed identification,
- 2) herbicide identification by symptomology on crops and weeds,
- 3) herbicide sprayer calibration team event,
- 4) solving mathematical problems pertaining to pesticide application,
- 5) diagnosing and solving farmer problem scenarios,
- and 6) mystery event. For the last event, the contest organizers conducted a quiz bowl.



Photo A. Herbicide symptomology plot overview (P 18 above).

Photo B. Reviewing crop and weed response to herbicides (Left).

Nilda Roma Burgos
nburgos@uark.edu



INDIA

(All photos and text credit to Dr. Samunder Singh, CCSHAU Hisar)

INTERNATIONAL CONGRESS on COTTON and Other Fibre Crops

An international Congress was organized by the Cotton Research and Development Association, India from February 20-23, 2018 in collaboration with the Indian Council of Agricultural Research at Research Complex for North Eastern Hill Region in Umiam (Barapani) Meghalaya. The congress was inaugurated by the Governor of Meghalaya, Sh. Ganga Prasad who emphasized that scientists should develop appropriate technology and strategy for the production of jute (*Corchorus* spp.), ramie (*Boehmeria nivea*), mesta (*Hibiscus sabdariffa* var. *altissima* and *Hibiscus cannabinus*) with same importance in NEH as that of cotton in other parts of India and the world. The meeting was attended by 278 people with 50 lead/invited papers, 147 oral and 62 poster papers.

Cotton is one of the most ancient and very important commercial crops of global importance with a significant role in Indian agriculture, industrial development, employment generation and improving the national economy. It is cultivated for domestic consumption and exported in about 111 countries worldwide and hence called the “King of Fibres” or “White Gold”. Millions of people depend on cotton cultivation, trade, transportation, ginning and processing for their livelihood. India is the only country in the world growing all the four cultivated species of cotton along with their



hybrid combinations in the vast Agro-climatic conditions. Cotton cultivation for its fibre a raw material textile industry is cultivated from Punjab in the north to Kanyakumari in the south and Assam in the east to Kutch (Gujarat) in the west.

India, the second largest producer, consumer as well as exporters of cotton next to China with 34% of world area and 21 % of world production and continue to maintain the largest area under cotton. Within a span of fifteen years, the cotton production in the country has been doubled though more than 70% area is under rain fed cultivation. Not only weeds, new diseases and insect pests in transgenic cotton are emerging threats (biotic and abiotic) that need proper understanding to develop effective strategies for proper redressal.



Dr. Samunder Singh, Vice-President, IWSS was invited to present a lead paper on integrated weed management in cotton. Weeds in cotton not only reduce the yield by 30-85%, but also

usurp 42 kg nitrogen 18 kg phosphorus and 100 kg/ha potassium. Every 100 kg weed biomass was estimated to remove 0.81, 0.32 and 2.11 kg N, P₂O₅ and K₂O, respectively. Similarly, every one kilogram of nitrogen removed by weeds lowered cotton yield by 12 kg/ha. There are more than three dozen major weeds infesting in different cotton growing regions and their effective management will not only increase cotton yield but also lower the infestation of insects and diseases. Early season weed control is most important as weeds *viz. Trianthema* sp. emerging with cotton crop is most competitive and the seed produced within 2 weeks has no dormancy thus *Trianthema* can have several flushes in the growing season. Spraying of PPI/PRE dinitroaniline herbicides for grasses and broadleaf weeds is available, but no herbicide is available to control sedges which are spread in most cultivated regions necessitating mechanical control methods or use of protected spray of non-selective herbicides.

Timely plantation (early May in N. India) raised bed plantation, mulches, intercultural operations using hoe, power tiller, cultivator, sequential application of herbicides (PRE followed by POE) and their mixtures are the best options for an integrated approach to manage weeds in cotton.



Weed Management Trainings

Losses caused by weeds in India were estimated at USD 17 billion, that is even more than the central government budget for agriculture. These losses are more in slow growing, wide spaced crops where the choice of herbicides is limited. Maximum use of herbicides in India is under rice, corn, wheat, cotton, soybean and sugarcane which are irrigated crops. Under non-irrigated conditions manual and mechanical weed control is largely prevalent. Weeding is less remunerative operation in agriculture; hence a large number of females and child work force is engaged in this back breaking operation. Though herbicide use has increased significantly over the years, the total annual consumption in India is still less than Mexico, Poland, Guatemala and Kazakhstan.

More than 90% of rice and wheat crops in Punjab and Haryana are sprayed with herbicides. A study published in 2018 reported that hardly 34% farmers used recommended pesticides in



Farmers training for proper spraying of herbicides, KVK Fatehabad Haryana, 9 February 2018

Punjab. On the other hand, 65% of farmers were reported to use optimum dose of herbicides in Haryana. There are several issues as spraying machine, volume of water (also quality) for spraying, nozzle types, application time and methods to have desired results of herbicides. More than 80% of farmers are still using backpack sprayers and only 64% farmers are using flat fan/cut nozzles for spraying as hollow cone nozzles are generally supplied with backpack sprayers which are good for insects, but not weeds. Application time is also important to manage several flushes of emerging weeds and again it was found that only 40% farmers were applying herbicides at recommended time. Despite several years of training/campaigns, there is still a need to train the applicators and motivate them for proper spraying as any deviation can result in poor weed control and further aggravate resistance problems as observed in wheat weeds. Already five weeds have become resistant to multiple herbicides viz. *Phalaris minor*, *Rumex dentatus*, *Polypogon monspeliensis*, *Avena ludoviciana* and *Chenopodium album* in Haryana.



Mechanical weeding in mustard crop



Women training in KVK Panipat for efficient weeding in different crops, 13 February, 2018

Trainings were organized for women with the help of district Coordinators of Krishi Vigyan Kendra (Agriculture Science Centers of the University) for proper weeding in different crops. Similarly, training camps were organized by Agronomy Department at different KVK's and farmers villages with the help of pesticide companies in Haryana for spraying using backpack sprayers and free nozzles were distributed. Also, marginal farmers were provided with free backpack sprayers after successful training for proper spraying.

Trainings were also organized for farmers and dealers for effective spray in collaboration with pesticide companies (UPL and Pesticide India) in Karnal and Kaithal districts of Haryana that was attended by >350 persons at each locations. Hands on training was organized for spray calibration, water volumes, nozzles, and selection of proper herbicide or their mixture to take care of mixed weed flora in different crops. UPL offered cheapest spraying cost through their new machine with tailor made pesticides from the company. The new machine is more effective with wide swath and uniform application, particularly for herbicides.



Tractor sprayers are good for PPR/PRE spray (L), but not preferred by farmers for narrow row spaced crops, the new machine imported from Japan by UPL is very effective for POE herbicides spray (R)



Dr. Samunder Singh delivering talk on spray technology on May, 15, 2018



Pesticide India sponsored training program for spray Tech and proper herbicide application.



National Seminar on Meeting the Challenges in Weed Management in India

A national seminar was organized by Haryana Agronomists Association at CCSHAU Hisar on 20 August 2018 to update students and scientists involved in weed management by Dr. Samunder Singh, Vice-President, IWSS and President Haryana Agronomists Association. Dr. Rajshekhar Sakhalkar, Head of Bayer Crop Science Product Development, Asia Pacific-II, Mumbai delivered an invited talk on 'the Present Status in Crop Protection and Future Challenges in Indian Agriculture'. Lead lectures were presented by Dr. Dharambir Yadav on direct seeded rice, Dr. Satbir Punia on the management of parasitic weed '*Orobanche* in mustard', Dr. Rajbir Brar on Resource Conservation Technology, Dr. Samar Singh on weed management challenges in plantation crops, Dr. Rajul Edoliya (Pesticide India Ltd.) on Technological innovations in Weed Management, Dr. Rakesh Goel (Sumitomo Chemical Ltd) on Max 50 SC PRE (flumioxazin) wheat

herbicide, Dr. Samunder Singh on Weed resistance challenges in India. Scientists for best Research/Extension/Teaching and performing students were honoured at this occasion. Before the lecture schedule, a field visit to Research Farm of the Agronomy was organized to show the trials on weed management in different crops, farming system approach for yield maximization and crop physiology field laboratory. Dr. Samunder Singh, Professor of Weed Science and Head of Agronomy and President of Haryana Agronomists Association thanked all the participants, organizers and sponsors (all photos credit to Dr. Samunder Singh)..



Rapid Screening test for Resistance Detection in *Avena ludoviciana*

Dr. Samunder Singh, Prof. & Head Agronomy, CCSHAU Hisar 125004, India

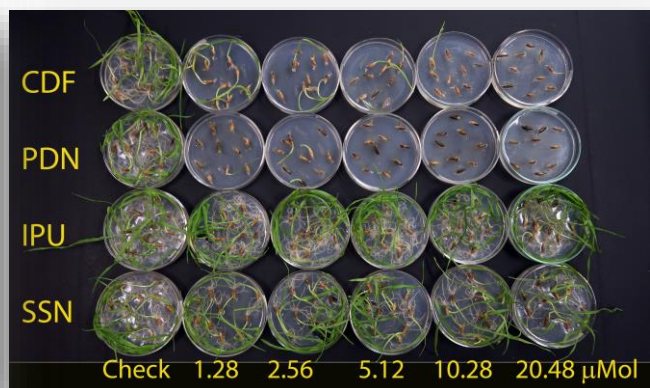
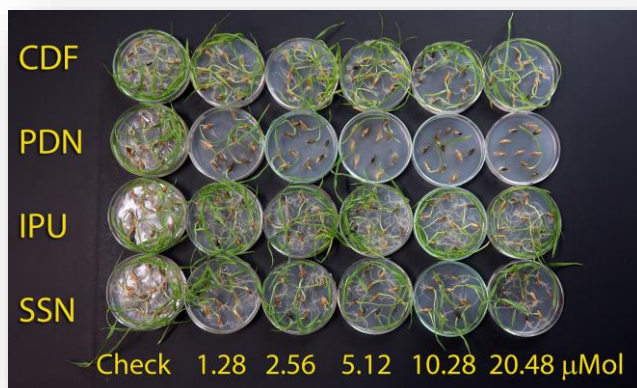
Avena ludoviciana (wild oat) is a major weed of wheat and other winter season crops in India. It is the most competitive grassy weed of wheat in north India and the first case of clodinafop-propargyl resistance from Haryana (cotton-wheat rotation fields) was recorded in (2014-15) followed by multiple herbicide resistance to ACCase inhibitors



Clodinafop-propargyl + metribuzin and clodiafop+2,4-D treated *A. ludoviciana* from Hisar (L) and Sirsa District (R) farmer's fields, Haryana, respectively, March 2018

(2015-16) and ALS inhibitors (2016-17). Herbicide resistance has also been reported in *A. ludoviciana* from Australia (flamprop-methyl, iodosulfuron-methyl-Na, clodinafop, diclofop-methyl, and glyphosate), France (fenoxaprop-ethyl) and Iran (clodinafop, diclofop, fenoxaprop, haloxyfop-methyl, pinoxaden, sethoxydim, tralkoxydim, iodosulfuron-methyl-Na, and mesosulfuron-methyl).

A rapid screening test was developed by using seed and cut leaves in the growth room of Agronomy Department, CCS HAU, Hisar, India. Seed of putative resistant populations were collected from farmers' fields where complaints of poor control was reported and compared with University Research farm population (susceptible). Ten seeds of *A. ludoviciana* collected from field in the previous season were treated with clodinafop (CDF), pinoxaden (PDN), isoproturon (IPU) and sulfosulfuron (SSN) at 0, 1.28, 2.56, 5.12, 10.28, 20.48 μMol .



***Avena ludoviciana* populations from Hisar District (Left) and Sirsa District (R) fields, Haryana (SSN-sulfosulfuron, IPU-isoproturon, PDN-pinoxaden, CDF-clodinafop)**

10.24 and 20.48 μmol solution prepared in Agar media and germination revealed that both populations were effectively controlled by only pinoxaden, though some seedlings germinated up to highest concentration in Hisar district population. The differences in both populations to clodinafop varied where Hisar population had no control in the field and Sirsa population was partially controlled. Poor control under field conditions (field photo above right side) with clodinafop could also be due to tank mix spray with 2,4-D as it has antagonistic effect on grassy weeds. The level of resistance to clodinafop has parallels to response with sulfosulfuron and isoproturon in both the populations. The concentration of isoproturon was lower in this study to differentiate between susceptible and resistant populations. Similar results were observed in pot studies where maximum efficacy after three weeks of spraying was with pinoxaden (PDN), followed by sulfosulfuron + metsulfuron (SSN+MSM) and mesosulfuron + iodosulfuron (Meso+Iodo) and minimum mortality with clodinafop (CDF).

The above studies reveal that pinoxaden efficacy is also declining in clodinafop resistant population as visible in pot studies and Petri dish study where seed germinated even up to highest concentration (20.48 μmol) used (Top left, Petri dish photo).

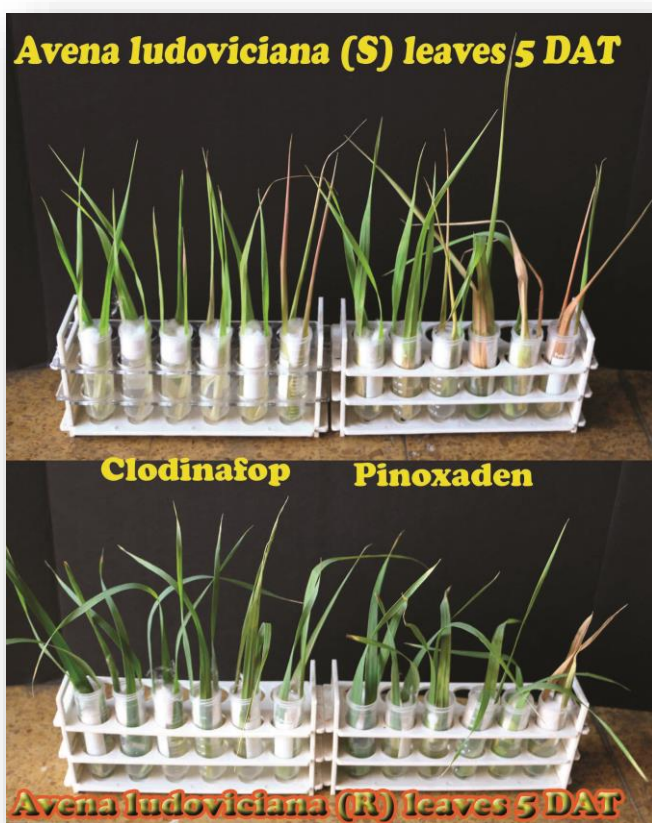


***Avena ludoviciana* population from Hisar district treated with four herbicides in pots**

A second population from a different location (30 km away from the first population) in Hisar district that was not controlled with clodinafop followed by pinoxaden (below right photo from field) was used for comparison in the lab studies using cut-leaves treated with the same concentrations of clodinafop and pinoxaden in water (as in Petri dish studies) and compared with a susceptible population from HAU Research farm (below left, upper plate, RHS). The cut leaf results were discernable after five days of treatment and

revealed that the S population was effectively controlled by both clodinafop and pinoxaden, but the clodinafop followed by pinoxaden treated field population had no effect of clodinafop and only 20.48 μ mol of pinoxaden showed some mortality.

The results of Petri dish, pots, cut leaf in volumetric flasks and field had similar results for clodinafop, pinoxaden and sulfosulfuron and can be used as an advisory to the farmers based on rapid screening test to select the best herbicide as population response varied with different herbicides. Results were rapid with cut leaf followed by Petri dish than pot studies, though herbicide effect may vary depending on the stage of leaf and cutting leaf can also cause some injury; the Petri dish study is more robust and results are visible in 7-10 days after treatment.



Avena ludoviciana field in Kuleri (Hisar) treated with clodinafop followed by pinoxaden (top R plate)

A. ludoviciana population (S) treated with clodinafop and pinoxaden (Left, top plate) and R population (Left bottom plate, respectively)



USA

WSSA 58th annual meeting was held in Arlington, Virginia in February 2018. The meeting had 571 participants with 400 4 papers and posters. Dr. Scott Senseman took over as President of WSSA with new office bearers, Larry Steckel (President-Elect), Bill Curran (Vice-President), Darrin Dodds (Secretary), Phil Banks (Treasurer), Eric Gustafson (Executive Secretary), Dawn Refsell (Member-at-Large), Jess Bunchek (Graduate Student Member), Marty Schraer (Western Weed Science Society), Francois Tardif (Canadian Weed Science Society), Greg Elmore (North Central Weed Science Society), and Rakesh Chandran (Northeastern Weed Science Society). Many congrats to the new team and wish them well.



The meeting was well received with six exceptional and well attended symposia related to important and impactful subjects. These included: 1) Grade Report for New Dicamba Technology in 2017; 2) Herbicide Metabolism in Crops and Weeds: A Revisit, Current Understanding, and New Insights; 3) Learning by Listening: Herbicide Resistance Listening Sessions; 4) Pesticide Registration in the U.S. and How the WSSA Can Inform the Process; 5) Fostering Sustainable Programs to Improve Pesticide Applications and Promote Resistance Management; and 6) The State of the Weed Control Industry in 2018 along with a

Teaching workshop.

Dr. Senseman thanked the outgoing Board members, Kevin Bradley (Past President), Hilary Sandler (Secretary), Rick Boydston (Treasurer), Andrew Kniss (Member At-Large), Chase Samples (Graduate Student Member), Eric Page (Canadian Weed Science Society), and Reid Smeda (North Central Weed Science Society) for their wonderful work.

WEED SCIENCE SOCIETY OF AMERICA ANNOUNCES 2018 AWARD

The Weed Science Society of America (WSSA) honored more than two dozen individuals for their outstanding contributions to the field of weed science. The awards were presented during the organization's annual meeting in Arlington, Virginia for the outstanding and innovating work in advancing weed science through their research..

FELLOW AWARDS were presented to:

Hugh Beckie, Ph.D., Agriculture and Agri-Food Canada and the University of Alberta (Fellow)



Jason Norsworthy, Ph.D., University of Arkansas
OUTSTANDING EXTENSION AWARD (Fellow)

OUTSTANDING Extension AWARD

Christy L. Sprague, Ph.D., Michigan State University

OUTSTANDING RESEARCH AWARD

Jason Norsworthy, Ph.D., University of Arkansas

OUTSTANDING TEACHER AWARD

Anita Dille, Ph.D., Kansas State University

OUTSTANDING GRADUATE STUDENT AWARD

Chris Meyer, Ph.D. candidate, University of Arkansas

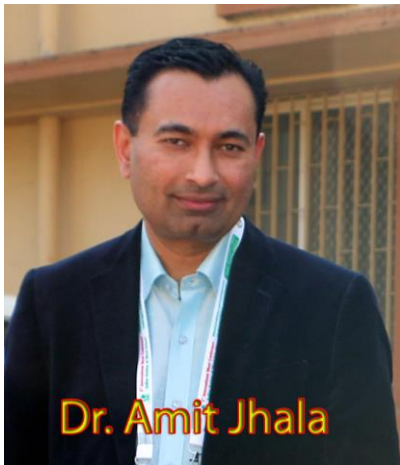
Outstanding Early Career Weed Scientist Award

Prashant Jha, Montana State University-Bozeman.

OUTSTANDING INDUSTRY AWARD

Mark Peterson, Ph.D., Dow-DuPont

Outstanding Reviewer Award



Amit Jhala, Ph.D.,
University of Nebraska-Lincoln.

Nicholas Korress, Ph.D., University of Arkansas.

Honorary Membership Award 2018



Rafael De Prado, Spain

WSSA Public Service Award

Dr. . Phil Stahlman
Retiring Associate Editor,
Weed Technology

Ian Burke, Washington State University



WSSA Student award was also given to 25 students.



WSSA student Contest Awardees for 2018

HONOR TO STEVE DUKE



Dr. Stephen (Steve) Duke was bestowed with two prestigious awards in 2017. In August, he became a Fellow of the American Chemical Society, the largest scientific society in the world (ca. 160,000). He was recognized by this award for his research on the modes of action of herbicides and for his service to the Agrochemical Division of ACS.

In September, he was inducted into the USDA, Agricultural Research’s Science Hall of Fame. This recognition was for outstanding research on natural and synthetic tools for pest management. Dr. Duke is a past president of WSSA and fellow of WSSA

Steve Duke also served as President of International Weed Science Society (IWSS) from 2001 to 2004. For his significant services to the Society and Weed Science globally, he was honored with IWSS Outstanding Achievement Award in the 6th International Weed Science Congress in Hangzhou, China in 2012. Many congratulations again Steve on your prestigious award.



EUROPE

Jens Carl Streibig

EWRS Honorary Member from June 2018



Jens Carl Streibig did his Ph.D. in Agricultural Botany in 1977 and acquired his Dr. agro. (D.Sc.) in the area of herbicide selectivity in 1992. In 1996 he was appointed Professor (Weed Science) of the Royal Veterinary and Agricultural University (KVL), Copenhagen, Denmark. After having retired from fulltime professional work in 2015 he currently holds a position as Professor emeritus of Weed Science at the Faculty Science, University of Copenhagen (UCPH).

Jens' major research has been in the area of herbicide selectivity, joint action of pesticide mixtures and ecotoxicology of pesticides. He has also worked with genetically modified crops and risk assessment. He has been involved in various national and international projects within his area of research and has had assignments in

Africa and Asia. His teaching has primarily involved Weed and Crop Science, with an emphasis on pesticide use, mode of action and ecotoxicology.

Jens has 40 years of EWRS Membership, and he has always been an enthusiastic contributor to the Society. He was Scientific Secretary of the Society's Scientific Committee for 8 years (1994-2001) succeeding Dr. Ray Hance and before Dr. Paolo Bàrberi took over this task. He served as Secretary during those periods when the EWRS Vice-Presidents Prof. Dr. Karl Hurle, Dr. Helmut Walter, Prof. Dr. Martin Kropff, and Dr. Jean-Pierre Claude were Chairmen of the Society's Scientific Committee.

Jens served for 15 years (1982-1995) as editor of the Society's journal WEED RESEARCH, and 3 years (2011-2015) as subject editor Weed Science of the journal Crop Protection. Together with Dr. Jon Marshall, Editor-in-Chief of the Society's journal WEED RESEARCH, Jens developed a short course on how to write a paper for an international journal like WEED RESEARCH, aimed at PhD students. This course was offered at various EWRS Symposia, like the one in Samsun, Turkey, in June 2013 and that of Montpellier, France, in June 2015.

Jens was coordinator of the EWRS Working Group Education and Training at least from 2008 through to 2017. He himself was also very much involved in the education of PhDs engaged in weed science, specifically in a course that focused on the advantage of modern non-linear statistical software to analyze and interpret experiments. Non-linear dose response curves are fundamental to understanding herbicide selectivity and efficacy. This principle can easily be extended to various other

branches of weed management ranging from allelopathy to flame weeding and from weed-crop competition to laser cutting. Jens frequently organized workshops on this topic, also outside of Europe, like in June 2008 in conjunction with the International Weed Science Congress in Vancouver. In these workshops he closely collaborated with Christian Ritz. A homepage on Statistical Analysis of Agricultural Experiments with R was established.



Prof. Jonathan Gressel, Samunder Singh, Baruch Rubin and Jens Streibig during the 2nd IWSC in Copenhagen, Denmark

His publication list contains more than 360 papers, mainly on Crop and Weed Science. These papers are written not only in English, but also in Danish in respect of specific agricultural problems in Denmark and the other Scandinavian countries.

In 1998, Jens became Honorary Member of the Weed Science Society of America (WSSA). Recently, the International Weed Science Society (IWSS) bestowed Jens the Outstanding Achievement Award 2016 in Prague during the 7th International Weed Science Congress (IWSC). Every four years, the IWSS bestows awards on weed scientists who exemplify outstanding performance in science and service. Very relevant for receiving this particular award are the candidate's contributions to weed science made outside of one's job description, and

outside of their employer's working hours.

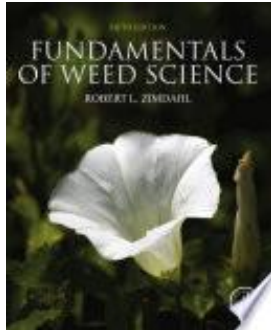
Also nowadays, Jens is still very active. He is technical adviser for Idea Tropical, a leading provider of research and consulting services in weed management and herbicides for tropical crops. Jens is member of the board and statistical advisor of Agrolab AS being the leading research organization in the EU north zone with experience dating back to 1984. Since then, Agrolab has successfully helped companies by testing, developing and registering plant protection products in the European Union.

Jens successfully organized the 2nd IWSC in Copenhagen, June 25-28, 1996.

Many congratulations Jens on behalf of the International Weed Science Society and wishing you a happy, healthy and fruitful time ahead.

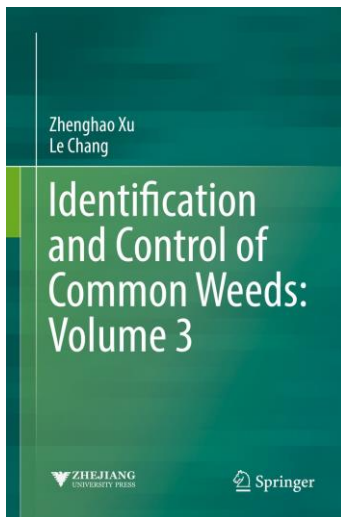


NEW BOOKS



Fundamentals of Weed Science by Robert Zimdahl, 5th Ed. 2018 Elsevier, 735 p. <https://doi.org/10.1016/C2015-0-04331-3>, ISBN 978-0-12-811143-7

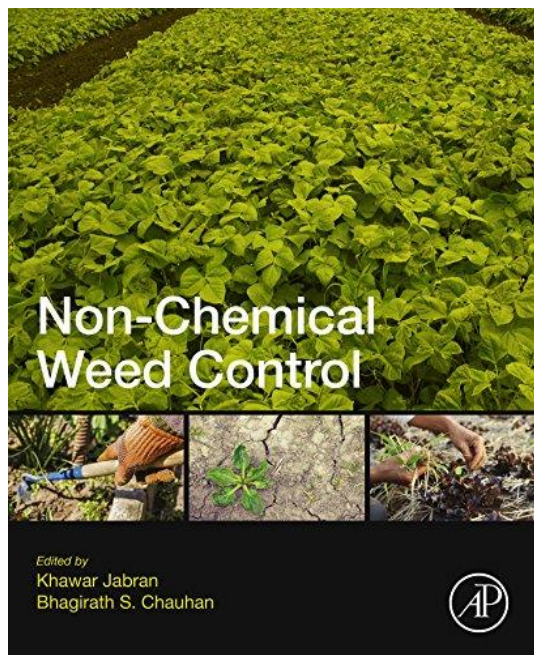
Fundamentals of Weed Science, Fifth Edition, provides the latest information on this constantly advancing area of study. Placing weed management in the largest context of weed research and science, the book presents the latest advances in the role, control and potential uses of weed plants. From the emergence and genetic foundation of weeds to the latest control measures and environmental impact, the book uses an ecological framework to explore the role of responsible and effective weed control in agriculture. In addition, users will find discussions of related areas where research is needed for additional understanding. The book covers a wide variety of issues including culture, economics and politics in weed management, all areas that enable scientists and students to further understand the larger effects on society.



Identification and Control of Common Weeds: Volume 3, Zhenghao Xu and Le Chang, 2017, Springer, ISBN: 978-981-10-5403-7.

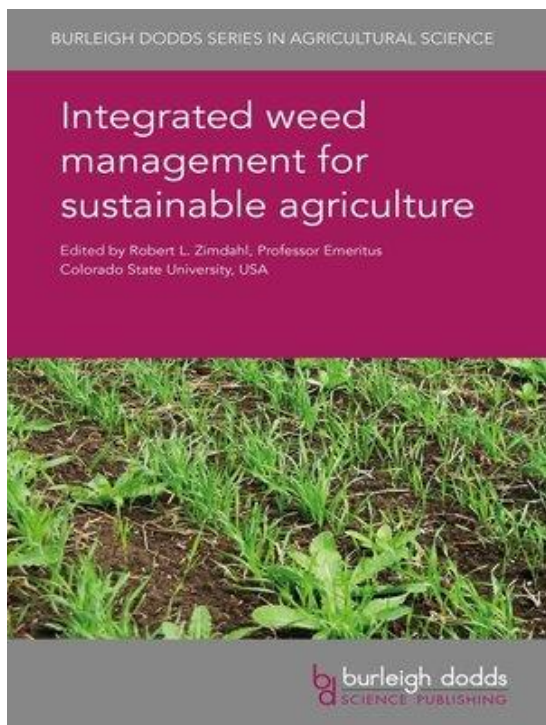
This book introduces readers to nearly 600 common weeds. In addition to essential information, each chapter includes photos for a specific type of weed with its morphology in different growth periods, such as seedling, root, flower, fruit, and mature plant. The book also discusses control measures, including agricultural, chemical, physical, biological, and comprehensive methods. The Volume 3 mainly focuses on 252 Species of Dicot and Monocot Weeds along plus 2 Species of Liverworts and Mosses.

With the development of society and economics, weeds have become a recurring problem. In particular, the exotic, invasive, and quarantine weeds have spread dramatically and rapidly. On the other hand, many people, even those who are engaged in weed control, find it hard to distinguish between weeds. Thus, there is significant demand for illustrations of weed morphologies, as well as information on their control measures. This book offers a valuable, practical guide for all those working in the fields of crop cultivation, plant protection and quarantine management.



Non-Chemical Weed Control, Khawar Jabran and Bhagirath S. Chauhan, ISBN 978-0128098813, Elsevier, 3 January 2018.

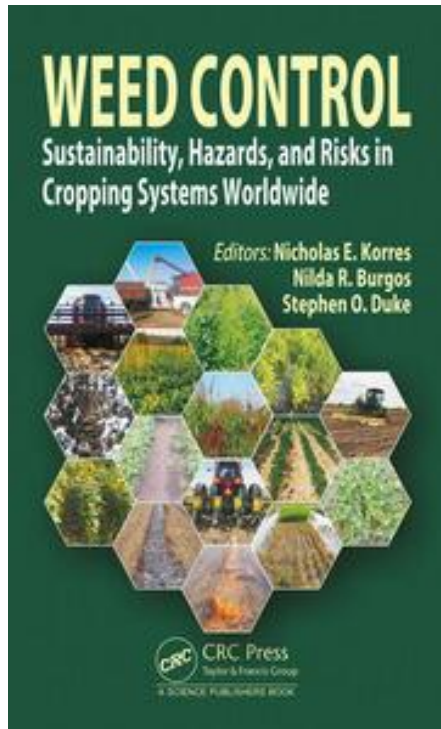
Non-Chemical Weed Control is the first book to present an overview of plant crop protection against non-food plants using non-chemical means. Plants growing wild—particularly unwanted plants found in cultivated ground to the exclusion of the desired crop—have been treated with herbicides and chemical treatments in the past. As concern over environmental, food and consumer safety increases, research has turned to alternatives, including the use of cover crops, thermal treatments and biotechnology to reduce and eliminate unwanted plants. This book provides insight into existing and emerging alternative crop protection methods and includes lessons learned from past methodologies. As crop production resources decline while consumer concerns over safety increase, the effective control of weeds is imperative to insure the maximum possible levels of soil, sunlight and nutrients



INTEGRATED WEED MANAGEMENT FOR SUSTAINABLE AGRICULTURE by Prof. Robert L. Zimdahl. <https://doi.org/10.4324/9781351114417> 480 pages, Burleigh Dodds Science Publishing Limited, ISBN-13: 9781786761644, eBook ISBN 9781351114417

Weed remains a major obstacle to increasing yield and sole reliance on herbicides is no longer sustainable in managing them owing to increased weeds resistance and there are also environmental issues. An integrated weed management approach is better suited in targeting weeds and increasing the shelf life of herbicides plus minimum impact on environment. Use of cultural, biological and mechanical methods with herbicides also improves soil physical and microbial condition and is more sustainable in the long run to lower the cost of weed management. Successful IWM strategies can only be developed in an interdisciplinary context and based on principles of weed ecology, including population, community and agroecosystem ecology, appropriately presented along with Ethical issues in integrated weed management. The contribution of chapters by renowned experts in the book adds to its utility for

farmers, students, scientists and pesticide industry.

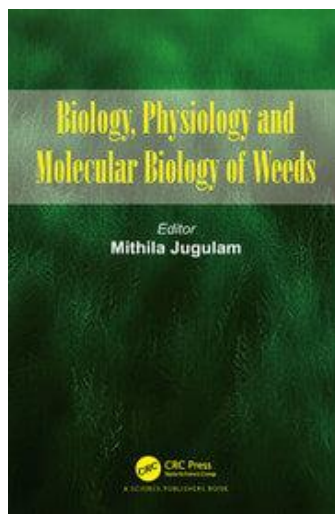


WEED CONTROL

Sustainability, Hazards, and Risks in Cropping Systems Worldwide, Ed. **Nicholas E. Korres, Nilda R. Burgos, Stephen O. Duke**, CRC Press Boca Raton, 2018, <https://doi.org/10.1201/9781315155913>, eBook ISBN 9781315155913.

In the light of public concerns about sustainable food production, the necessity for human and environmental protection, along with the evolution of herbicide resistant weeds, call for a review of current weed control strategies. Sustainable weed control requires an integrated approach based on knowledge of each crop and the weeds that threaten it.

This book will be an invaluable source of information for scholars, growers, consultants, researchers and other stakeholders dealing with either arable, row, cash, vegetables, orchards or even grassland-based production systems. The uniqueness of this book comes from the balanced coverage of herbicide effects on humans and environment in relation to best weed control practices of the most important cropping systems worldwide. Furthermore, it amalgamates and discusses the most appropriate, judicious and suitable weed control strategies for a wide range of crops. It reviews the available information and suggests solutions that are not merely feasible but also optimal.



BIOLOGY, PHYSIOLOGY AND MOLECULAR BIOLOGY OF WEEDS,

Ed. Mithila Jugulam, 2017, CRC Press Boca Raton, 230 P, <https://doi.org/10.1201/9781315121031>, The book provides comprehensive information on a wide range of topics from biology, physiology, genetics to the use of genomic tools in weed science. The book covers information at a more advanced level than the previously published books in weed science. It covers not only weed genetics and genomics research, but also weed management from an ecological perspective. Furthermore, the book also gives a broad coverage of novel mechanisms of weed resistance to herbicides. More importantly, it includes next generation sequencing techniques and

bioinformatics of herbicide resistant genes in weeds.



Mark the calendar for 2020

The 8th International Weed Science Congress will be held in beautiful Bangkok, Thailand from 21st-26th June 2020. Other than Weeds, you will have plenty to engage with exotic locations, Thai cuisines, culture and much more.

You are welcome in a city bursting with awe-inspiring temples, bustling local markets, vibrant nightlife, vast shopping complexes, and hard to choose from fascinating attractions. Looking forward to seeing you all in Bangkok in June 2020.



OTHER MAJOR UPCOMING EVENTS

2018

- Feb 27 – Mar. 1, 2018 28th German Conference on Weed Biology and Weed Control, Braunschweig, Germany www.unkrauttagung.de
- Mar 19-22, 2018 9th International IPM Symposium, Baltimore, Maryland, USA <https://ipmsymposium.org/2018/>
- Mar. 7, 2018 European Agrochemical Adjuvants Innovation Meeting (EAA-INNOVATIONS 2018), LantarenVenster in Rotterdam, The Netherlands <https://www.eaa-innovations.eu> or h.deruiter@surfaplust.com
- June 18-21, 2018 18th EWRS Symposium, New Approaches for Smarter Weed Management in Ljubljana, Slovenia. Contact: Dr. Andrej Simončič, ewrs@kis.si, <http://www.ewrs2018.org/>
- July 15-18, 2018 Aquatic Plant Management Society, Annual Meeting (APMS), Hyatt Regency Hotel, Buffalo, New York, www.apms.org
- Aug 12-16, 2018 XXX International Horticultural Congress Istanbul, Turkey, <http://www.ihc2018.org/en/default>.
- Sept. 9-12, 2018 21ST AUSTRALASIAN WEEDS CONFERENCE Sydney, NSW, Australia <http://www.21awc.org.au/>
- Sept 4 – 7, 2018 NEOBIOTA 2018 (10th International Conference on Biological Invasions) Dublin, Ireland, <http://www.neobiota2018.org/>
- Sept. 26-28, 2018 Joint Esenias and Dias Scientific Conference and 8th Esenias Workshop, Bucharest, Romania, www.esenias.org
- Oct. 4 – 7, 2018 9th International Agriculture Symposium - AGROSYM 2018, Jahorina, Bosnia and Herzegovina <http://www.agrosym.rs.ba/index.php/en>

- Nov. 19-22, 2018** **Canadian Weed Science Society, Annual Meeting (CWSS), Marriott on the Falls, Niagara Falls, Ontario, www.weedscience.ca**
- Dec. 3–6, 2018** **North Central Weed Science Society Annual Meeting (NCWSS), Hyatt Regency Hotel, Milwaukee, Wisconsin, www.ncwss.org**
- 2019**
- Jan. 7-10, 2019** **Northeastern Weed Science Annual Meeting (NEWSS), Delta Hotels, Baltimore, Maryland, www.newss.org**
- Feb. 3-7, 2019** **Southern Weed Science Society Annual Meeting (SWSS), Renaissance Oklahoma City Convention Center Hotel Oklahoma City, Oklahoma, www.swss.ws**
- Feb. 11-14, 2019** **59th Weed Science Society of America Annual Meeting (WSSA), Sheraton New Orleans, Louisiana, www.wssa.net**
- Mar. 11-14, 2019** **Western Society of Weed Science Annual Meeting (WSWS), Hyatt Regency Downtown Denver, Colorado, www.wsweedscience.org**
- May 19-24, 2019** **14th IUPAC International Congress of Crop Protection Chemistry, Ghent, Belgium, www.iupac.org**
- Nov.10 – 14, 2019** **XIX International Plant Protection Congress – 2019, Hyderabad, India, [https://www.plantprotection.org/Meetings/InternationalCongress%28IPPC%29/XIXIPPC, Hyderabad,1014November2019.aspx](https://www.plantprotection.org/Meetings/InternationalCongress%28IPPC%29/XIXIPPC,Hyderabad,1014November2019.aspx)**
- Dec. 3 -5, 2019** **24th COLUMA Conference, Orléans, France.**



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The IWSS Newsletter is available on the Internet at:
<http://www.iwss.info/newsletters>

The Newsletter is published twice a year to foster communication among and give information to our members and others around the globe interested in Weed Science.

Thanks to the contributors who helped with the present issue. We would love to hear activities in your areas, please contribute and share with all weed science fraternity.

Deadline for items for the next Newsletter is September 30, 2018

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TO JOIN THE IWSS

Complete the following information and send your dues to Dr. Ian Burke, the IWSS Treasurer:

Name: _____
Affiliation: _____
Address _____
City _____
State _____

Zip/Postal code _____
E-mail address: _____

Membership Form is also available at Society's website. Annual membership is from January to December. Checks, bank drafts, or money orders in US\$ should be made payable to: International Weed Science Society. For ease of payments, dues can now be paid by credit card at our webpage by following the link:
<http://www.iwss.info/membership.asp>