WEED SCIENCE SOCIETY OF AMERICA

VOLUME 38

JULY-SEPTEMBER 1990

NUMBER 4-5

PHYSIOLOGY, CHEMISTRY, AND BIOCHEMISTRY	
Moisture Stress Effects on the Absorption, Translocation, and Metabolism of Haloxyfop in Johnsongrass (Sorghum halepense) and Large Crabgrass (Digitaria sanguinalis). Robert S. Peregoy, Lynn M. Kitchen, Peter W. Jordan, and James L. Griffin	,
WEED BIOLOGY AND ECOLOGY	
Redroot Pigweed (Amaranthus retroflexus) and Barnyardgrass (Echinochloa crus-galli) interference in Potatoes (Solanum tuberosum). Mark J. Vangessel and Karen A. Renner	
Competitive Mechanisms of Common Cocklebur (Xanthium strumarium) and Soybean (Glycine max) During Seedling Growth. Robert C. Bozsa and Lawrence R. Oliver.	
Effects of Density and Species Proportion on Competition between Spurred Anoda (Anoda cristata) and Velvetleaf (Abutilon theophrasti). David T. Patterson.	
Common Lambsquarters (Chenopodium album) Competition and Time of Removal in Soybeans (Glycine max). Teresa M. Crook and Karen A. Renner	1
Effects of Day and Night Temperature on Vegetative Growth of Texas Panicum (Panicum texanum). David T. Patterson	
Texas Panicum (Panicum texanum) Growth as Affected by Irrigation Management and Planting Date. Jill Schroeder, Clyde C. Dowler, and James R. Stansell	
The Effects of Supplemental Nitrogen on Shoot Production and Root Bud Dormancy of Canada Thistle (Cirsium arvense) under Field Conditions, Léonie B. Nadeau and William H. Vanden Born	
Eastern Black Nightshade (Solanum ptycanthum) Interference in Processing Tomato (Lycopersicon esculentum). Frances G. M. Perez and John B. Masiunas	:
WEED CONTROL AND HERBICIDE TECHNOLOGY	
Postemergence Control of Weeds in Winter Rapeseed, <i>Brassica napus</i> , with DPX-A7881. Finlay S. Buchanan, Clarence J. Swanton, and Terry J. Gillespie	,
Green Foxtail (Setaria viridis) Competition in Potato (Solanum tuberosum). David A. Wall and George H. Friesen	
Emergence and Growth of Sicklepod (Cassia obtusifolia) with Various Planting and Herbicide Incorporation Depths. David R. Shaw Hector P. Rainero, Clyde A. Smith, Marshall B. Wixson, W.R.A.S. Ratnayake, Stacey A. Bruff, and Larry J. Newsom	,
Droplet Makeup and the Effect on Phytotoxicity of Glyphosate in Velvetleaf (Abutilon theophrasti). John R. Cranmer and Deal L. Linscott	t
SOIL, AIR, AND WATER	
Dissipation of Flurtamone in Three Georgia Soils. Thomas C. Mueller, Philip A. Banks, and David C. Bridges	
Transformation of Alachlor by Microbial Communities. Hone L. Sun, Thomas J. Sheets, and Frederick T. Corbin	
SPECIAL TOPICS	
High-Temperature Effects on Germination and Survival of Weed Seeds in Soil. Grant H. Egley	i
Edward E. Schweizer	
Validation of Four Bioeconomic Weed Management Models for Sugarbeet (Beta vulgaris) Production. John M. Shribbs, Edward E Schweizer, Lauren Hergert, and Donald W. Lybecker	
Use of the Arcsine and Square Root Transformations for Subjectively Determined Percentage Data. William H. Ahrens, Darrell J. Cox and Girish Budhwar	3

WEED SCIENCE

Published six times a year by the Weed Science Society of America

R. J. Aldrich, Editor

Associate Editors

Michael Barrett, Department of Agronomy, University of Kentucky, Lexington, KY 40546

- G. Euel Coats, P.O. Drawer PG, Department Pl. Path. and Weed Sci., Mississippi State University, Mississippi State, MS 39762
- J. F. Derr, Hampton Roads Ag. Exp. Station, 1444 Diamond Springs Road, Virginia Beach, VA 23455

Charlotte Eberlein, University of Idaho, Aberdeen Research and Extension Center, Aberdeen, ID 83210

Sidney S. Harper, Tennessee Valley Authority, National Fertilizer Development Center, Muscle Shoals, AL 35660

R. S. McAllister, National Agr. Chem. Assoc., 1155 Fifteenth St. N.W., Washington, DC 20005

Paul W. Santelmann, Department of Agronomy, Oklahoma State University, Stillwater, OK 74078

- A. K. Watson, Department of Plant Science, Macdonald College of McGill University, 21111 Lakeshore Rd., Ste. Anne de Bellevue, PQ, Canada H9X 1C0
- S. C. Weller, Department of Horticulture, Purdue University, West Lafayette, IN 47907

Allen F. Wiese, Texas Agricultural Experiment Station, Texas A&M University System, P.O. Drawer 10, Bushland, TX 79012

Jerry Oot, *Technical Editor* AC/217-892-4329

Reviewers

W. H. Ahrens L.W.J. Anderson Robin Bellinder David Bridges D. D. Buhler G. Crabtree A. G. Devter	Greg Gillespie K. N. Harker Kent Harrison W. Carroll Johnson William C. Koskinen R. J. Kremer Rey Liebl	Wondi Mersie Tom Moorman L. J. Moshier U. Nandihalli D. T. Patterson Dale Shaner P. J. Shea	C. E. Snipes R. F. Turco M. K. Upadhyaya Glenn Wehtje G. A. Wicks John W. Wilcut Alan York
A. G. Dexter Raymond Forney	Rex Liebl	P. J. Shea	Alan York Frank Young

Officers of the Weed Science Society of America

L. W. Mitich, President

J. R. Abernathy, President-Elect

J. Antognini, Vice President

H. M. LeBaron, Past President

A. S. Hamill, Secretary

J. F. Ellis, Treasurer

B. Truelove, Editor-in-Chief

R. A. Schmidt, Executive Secretary

Weed Science (ISSN 0043-1745) is an official publication of the Weed Science Society of America, 309 West Clark Street, Champaign, IL 61820 (AC/217-356-3182). It contains referred papers describing the results of research that elucidates the nature of phenomena relating to all aspects of weeds and their control. It is published bimonthly, one volume per year, six issues per year beginning in January.

Membership is \$50 per year, student affiliate membership \$20, which includes receipt of Weed Science, Weed Technology, and WSSA Newsletter Dues should be sent to WSSA, 309 West Clark Street, Champaign, IL 61820 not later than December 1 of each year. Membership in the society is on a calendar-year basis only.

Subscriptions (institutions, libraries, etc.) are \$80 per year, one volume per year of six issues beginning in January. New subscriptions and renewals begin with the first issue of the current volume and should be sent to WSSA, 309 West Clark Street, Champaign, IL 61820.

Change of address affecting the mailing list for members, students, and subscribers, inquiries about copies lost in the mail, requests for back issues, and all matters pertaining to the receipt of the Journal, membership and subscription information should be sent to WSSA, 309 West Clark Street, Champaign, IL 61820. Claims for copies lost in the mail must be received within 30 days (90 days foreign) of the date of issue to insure replacement at no charge.

Manuscripts must be sent to the Editor, Richard J. Aldrich, 701 Wildwood Drive, Columbia, MO 65203 (Oct. 16 to April 30); or Box 236, Marcell, MN 56657 (May 1 to Oct. 15). Directions for contributors are published in the January issue of *Weed Science*. Authors are asked to pay \$50 (member) or \$100 (nonmember) per page tharge as a portion of the cost of publication. The Editor can make exceptions in advance when justified.

Weed Science published by the Weed Science Society of America.
 Second class postage paid at Champaign, IL and at additional mailing offices.
 Copyright 1990 by the Weed Science Society of America. Printed in USA.
 All rights reserved. Reproduction in part or whole prohibited.
 Return POD form 3579 to WSSA, 309 West Clark Street, Champaign, IL 61820.

Sustaining Members WEED SCIENCE SOCIETY OF AMERICA August 28, 1990

A & L Agricultural Laboratories ACRES Agric. Custom Research

Agri-Growth Research Inc.

Agrolinz Inc.

Allen Machine Works
American Agricultural Services Inc.

American Cyanamid Company

The Andersons

BASF Corporation

Battelle

Calgene

CIBA-GEIGY Canada Inc.

CIBA-GEIGY Corporation

Deere & Company

De Soto, Inc.

E. I. DuPont de Nemours Company

Eli Lilly & Company

Environmental Technologies Institute Inc.

Fermenta ASC Corporation

FMC Corporation

Gandy Corporation

Griffin Corporation

Growmark Inc.

Gylling Data Management, Inc.

Heartland Technologies, Inc.

Hoechst-Roussel Agri Vet

ICI Americas, Inc.

ICMS Inc.

Kincaid Equipment Manufacturers Landis International Inc. LI-COR, Inc.

Marbicon Inc.

Micro Simplified Inc.

Minnesota Valley Testing Lab

Mobay Corp./Ag Chem. Div.

Monsanto Company

Mycogen Company

Nippon Soda Company Ltd.

NOR-AM Chemical Company

OMNIDATA International Inc.

Pan-Agricultural Labs., Inc.

PBI/Gordon Corporation

Pioneer Overseas Corporation

Plant Sciences Inc.

Research Development Alternatives

Research Options, Inc.

Rhone Poulenc Ag Company

Rogers Engineering Inc.

Rohm & Haas Company

Sandoz Crop Protection

O. M. Scott & Sons Company

Spraying Systems Company

SSI Mobley Company, Inc.

Stewart Agricultural Research Service Inc.

Sumitomo Chemical America Inc.

Terra International Inc.

Uniroyal Chemical Corporation

Watson Consulting and Research Inc.

Weed Systems, Inc.

Wintersteiger America Inc.