

A Journal of the Weed Science Society of America

NUMBER 1

VOLUME 3 JANUARY—MARCH 1989

ISSN 0890-037X WETEE9 3(1)1-214 (1989)

WEED TECHNOLOGY

A Journal of the Weed Science Society of America

Weed Technology, published quarterly beginning each January, is included along with Weed Science and WSSA Newsletter to Weed Science Society of America (WSSA) members. Annual membership costs \$50 with \$20 student affiliate memberships on a calendar year basis only.

Weed Technology subscriptions are \$20 per year (four issues per volume). New subscriptions begin with the January issue. Subscribers, including libraries and institutions, can obtain both Weed Science (volume of six issues per year) and Weed Technology for \$80 annually.

Changes of mailing address, inquiries about copies lost in the mail, and requests for back issues and for information about placing advertisements and about receiving journals, membership and subscriptions should be sent to WSSA, 309 W. Clark St., Champaign, IL 61820. Send dues by December 1 each year. Claims for copies lost in the mail must be received within 30 days (90 days foreign) of the issue date to insure replacement at no charge.

Send manuscripts to Calvin G. Messersmith, Editor, Weed Technology, Crop and Weed Sciences Dep., North Dakota State Univ., Fargo, ND 58105. Directions for contributors are published each January in *Weed Technology*. Authors are charged \$50 per page (nonmembers \$100) to cover a portion of publication costs. The Editor can exempt page charges in advance when justified.

Weed Technology (ISSN 0890-037X) is published by the Weed Science Society of America. Copyright 1989 by the Weed Science Society of America. Printed in USA. All rights reserved. Reproduction in part or whole is prohibited. Return POD Form 3579 to WSSA, 309 W. Clark St., Champaign, IL 61820 (AC/217-356-3182).

WSSA OFFICERS

J. F. Ahrens, President
H. M. LeBaron, President Elect
L. W. Mitich, Vice President
J. H. Dawson, Past President
A. G. Dexter, Secretary
J. R. Abernathy, Treasurer
B. Truelove, Editor-in-Chief



Sustaining Members January 10, 1989

ABC Laboratories, Inc. A & L Agricultural Laboratories ACRES Agric. Custom Research Agri-Growth Research Inc. Allen Machine Works **ALMACO** American Agricultural Services, Inc. American Cyanamid Company American Hoechst Corporation The Andersons **BASF** Corporation Cenex/Land O'Lakes Chang Farms, Inc. Chemalysis Inc. Chevron Chemical Company CIBA-GEIGY Corporation Conviron Deere & Company DeLavan Corporation Dow Chemical USA E. I. DuPont deNemours & Company Eli Lilly & Company EPL Bio-Analytical Services, Inc. Fermenta Plant Protection Co. **FMC** Corporation **Gandy Corporation Griffin Corporation** Growmark Inc. Gylling Data Management, Inc. ICI Americas, Inc. LI-COR, Inc. Marbicon Inc. Minnesota Valley Testing Labs, Inc. Monsanto Company Mycogen Corporation Nippon Soda Company **NOR-AM Chemical Company OMNI-DATA** International Pan-Agricultural Labs., Inc. PBI/Gordon Corporation **Pennwalt Corporation** Pioneer Overseas Corporation R & D Sprayers Inc. Rhone Poulenc Inc. Rogers Engineering Inc. Rohm & Haas Company O. M. Scott & Sons Company Spraying Systems Company SSI Mobley Company, Inc. Stewart Agricultural Research Service Inc. Thomson Publications Uniroyal Chemical Corporation Virginia Chemicals Inc. Watson Consulting and Research Inc.

Wintersteiger America, Inc.



January-March 1989

Volume 3 Number 1

A Journal of the Weed Science Society of America

Table of Contents

Technology Notes _____

1 News Notes of General Weed Science Interest

Feature =

2 An Eradication Plan for Plant Invasions. David L. Zamora, Donald C. Thill, and Robert E. Eplee

• Research ———

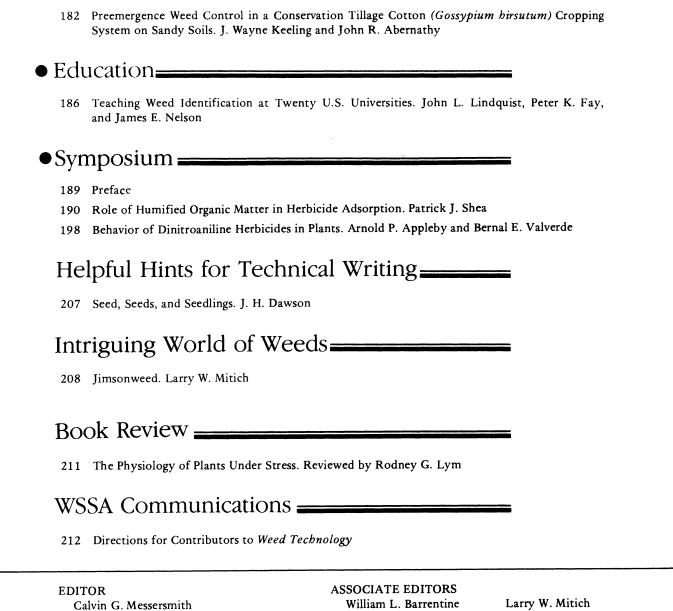
- 13 Herbicide-Oil-Water Emulsions. Frank A. Manthey, John D. Nalewaja, and Edward F. Szelezniak
- 20 Wheat (Triticum aestivum) Response to Triallate Plus Chlorsulfuron. Greg R. Gillespie and John D. Nalewaja
- 24 Enhanced Soil Degradation of Butylate and EPTC in Nebraska Fields. Fred W. Roeth, Robert G. Wilson, Alex R. Martin, and Patrick J. Shea
- 30 Tolerance of Transplanted Muskmelon (Cucumis melo) to Oxyfluorfen Applied Preemergent. John B. Masiunas and Stephen C. Weller
- 33 Seasonal Variations in Jack Pine (Pinus banksiana) and White Spruce (Picea glauca) Tolerance to Glyphosate and Triclopyr. R. G. Willis, G. R. Stephenson, R. A. Fletcher, and R. Prasad
- 39 Control of Seedling Grasses with Postemergence Grass Herbicides. Bill D. Brewster and Robert L. Spinney
- 44 Decision Criterion for Profitable Johnsongrass (Sorghum halepense) Management in Soybeans (Glycine max). Roland K. Roberts and Robert M. Hayes
- 48 Response of Centipedegrass (Eremochloa ophiuroides) to Plant Growth Regulators and Frequency of Mowing. Billy J. Johnson
- 54 Response of Tall Fescue (Festuca arundinacea) to Plant Growth Regulators and Mowing Frequency. Billy J. Johnson
- 60 Identification of Efficacious Adjuvants for Sethoxydim and Bentazon. Gunawan Wanamarta, Donald Penner, and J. J. Kells

•Peer reviewed papers.

Cover

Common crupina (Crupina vulgaris) seedlings following treatment with picloram (see feature article, p. 2). The seedling at the top escaped treatment and the two lower seedlings show typical picloram symptoms. Photo by Donald C. Thill, Univ. of Idaho, Moscow.

- 67 Soft Red Winter Wheat (Triticum aestivum) Response to Dicamba and Dicamba Plus 2,4-D. Jill Schroeder and Philip A. Banks
- 72 Roadside Management of Annual Fleabane (Erigeron annuus) and Wild Carrot (Daucus carota). Shelby J. Fleischer, Michael J. Gaylor, Ray Dickens, and David L. Turner
- 76 Relative Susceptibility of Oats (Avena sativa) and Wheat (Triticum aestivum) to Fluazifop, Haloxyfop, and Sethoxydim. Richard A. Beardmore and Dean L. Linscott
- 82 Metolachlor and Alachlor Persistence in Rice (Oryza sativa) Following Soybean (Glycine max). James L. Griffin and John F. Robinson
- 86 Antagonism of Johnsongrass (Sorghum halepense) Control with Fenoxaprop, Haloxyfop, and Sethoxydim by 2,4-D. Thomas C. Mueller, William W. Witt, and Michael Barrett
- 90 Winter Wheat (Triticum aestivum) Response to Herbicides Applied at Three Growth Stages. Duane A. Martin, Stephen D. Miller, and Harold P. Alley
- 95 Johnsongrass (Sorghum halepense) and Pitted Morningglory (Ipomoea lacunosa) Control with Imazaquin and Imazethapyr. Dennis G. Riley and David R. Shaw
- 99 Desiccation of Field Bindweed (Convolvulus arvensis) in Alfalfa (Medicago sativa) Seed Fields with Glyphosate. Douglas S. Packer and James M. Krall
- 102 Quackgrass (Agropyron repens) Control in Birdsfoot Trefoil (Lotus corniculatus) Seed Production. Dean L. Linscott and Richard Vaughan
- 105 Effect of Adjuvant Concentration and Carrier Volume on Large Crabgrass (Digitaria sanguinalis)
 Control with Fluazifop. Reid J. Smeda and Alan R. Putnam
- 110 Control of Wasatch Milkvetch (Astragalus miser var. oblongifolius) and Associated Species on Mountain Rangeland. M. C. Williams and M. H. Ralphs
- 114 A Statistical Analysis for Area-of-Influence Experiments. Nicholas Jordan
- 122 Rotational Crop Response to Repeated Applications of Norflurazon. J. Wayne Keeling, Randy W. Lloyd, and John R. Abernathy
- 126 Minimum Effective Rate of Chlorimuron and Imazaquin Applied to Common Cocklebur (Xanthium strumarium). William L. Barrentine
- 131 Fenoxaprop for Grass Control in Dry Seeded Rice (Oryza sativa). Khosro Khodayari, Paolo Nastasi, and Roy J. Smith, Jr.
- 136 Control of Triazine-Resistant Smooth Pigweed (Amaranthus hybridus) and Common Lambs-quarters (Chenopodium album) in No-Till Corn (Zea mays). Edward S. Hagood, Jr.
- 143 Growing Weeds in Nonaerated Nutrient Solution. Robert N. Andersen and Donald F. Ralston
- 146 Clomazone Dissipation in Two Montana Soils. Eric R. Gallandt, Peter K. Fay, and William P. Inskeep
- 151 Giant Foxtail (Setaria faberi) Control in Full-Season No-Till Soybeans (Glycine max). Ronald L. Ritter and Lisa M. Kaufman
- 155 Comparative Persistence and Mobility of Pyridine and Phenoxy Herbicides in Soil. James R. Jotcham, David W. Smith, and Gerald R. Stephenson
- Weed Control in Corn (Zea mays) as Affected by Till-Plant Systems and Herbicides. Edward E. Schweizer, Robert L. Zimdahl, and Rome H. Mickelson
- 166 Seed Bank Longevity of Common Crupina (Crupina vulgaris) in Natural Populations. David L. Zamora and Donald C. Thill
- 170 Volunteer Jerusalem Artichoke (Helianthus tuberosus) Interference and Control in Barley (Hordeum vulgare). David A. Wall and George H. Friesen
- 173 Loss of Metribuzin and Ethyl-metribuzin from Glass and Soil Surfaces. Daniel C. Peek and Arnold P. Appleby
- 177 Response of Common Cocklebur (Xanthium strumarium) to Alternaria helianthi. P. Charles Quimby, Jr.



TECHNICAL EDITOR
Charlene E. Lucken

William L. Barrentine
Lloyd Darwent
Ronald E. Doersch
Clyde C. Dowler
E. Patrick Fuerst
Russell R. Hahn

Larry W. Mitich Alex G. Ogg, Jr. Tim Obrigawitch John R. Teasdale Don C. Thill Robert G. Wilson