



VOLUME IV JANUARY 1956 NUMBER 1

Journal of the Weed Society of America

https://doi.org/10.1017/S0096719X00013766 Published online by Cambridge University Press

Weeds

Issued Quarterly by the Weed Society of America

K. P. BUCHHOLTZ, Editor, Dept. of Agronomy, University of Wisconsin, Madison, Wisconsin.

W. C. JACOB, Business Manager, Dept. of Agronomy, University of Illinois, Urbana, Illinois.

EDITORIAL COMMITTEE

R. J. ALDRICH, Weed Investigations Section, U.S.D.A., New Jersey Agr. Exp. Station, New Brunswick, New Jersey.

O. C. LEE, Dept. of Botany, Purdue University, Lafayette, Indiana.

W. C. ROBOCKER, Weed Investigations Section, U.S.D.A., Nevada Agr. Exp. Station, Reno, Nevada.

W. K. PORTER, JR., Dept. of Plant Pathology, Univ. of Louisiana, Baton Rouge, Louisiana.

WEEDS is a quarterly journal published by the Weed Society of America. Editorial offices are located at the University of Wisconsin, Madison, Wisconsin. Printing is by the W. F. Humphrey Press Inc., Geneva, New York. Subscription price is \$6.00 yearly for four issues; single copies \$1.50. Address all communications regarding subscriptions, advertising and reprints to W. C. Jacob, Department of Agronomy, University of Illinois, Urbana, Illinois. Inquiries concerning information on manuscripts and other material for publication should be addressed to the Editorial offices. All checks, money orders and other remittances should be made payable to WEEDS, Journal of the Weed Society of America.

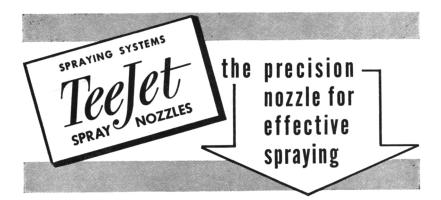
> Entered as second-class matter at the post office at Urbana, Illinois and Geneva, New York.

Table of Contents

	Page
Taxonomic and Genetic Studies on Wild Oats. D. R. Lindsay	1
Influence of Soil Type on Soil Sterilization with Sodium Arsenite. R. E. Frans, C. R. Skogley, and G. H. Ahlgren	
Evaluation of Selective Weed Control in Wheat. Lowell W. Rasmussen	15
Studies on Herbicidal Absorption and Translocation in Velvet Mesquite Seed- lings. Herbert M. Hull	22
The Carbohydrate Content of Corn Plants as Affected by Isopropyl N- (3-chlorophenyl) Carbamate. J. A. Meade amd A. O. Kuhn	43
The Use of C ¹⁴ Carbonyl Labeled 3 (p-chlorophenyl)-1, 1-dimethyl Urea in a Leaching Study. H. R. Sherburne, V. H. Freed and S. C. Fang	50
Chemical Studies on Halogeton glomeratus. W. B. Dye	55
The Effect of 2,4-D and Several Other Herbicides on Weeds and Soybeans when Applied as Post-emergence Sprays. F. W. Slife	61
News and Notes	69
Sustaining Members	72
Bibliography of Weed Investigations for July, August and September 1954. October, November and December 1954.	73

Advertisers Index

Spraying Systems Co	ii
Carbide and Carbon Chemicals Co.	iii
du Pont de Nemours & Co	iv
Standard Agricultural Chemicals Inc.	v
Chipman Chemical Co	vi
Diamond Alkali Co	vii
American Cyanamid Co	viii



Supplied in a full range of interchangeable orifice tip and strainer sizes to mert every capacity requirement. Tee-Jet Spray Nozzles for Weed Control by spraying make it possible to take maximum advantage of the chemical and sprayer unit. TeeJet nozzles are precision built and provide a flat spray with uniform distribution. Atomization is properly controlled to give coverage with an absolute minimum of driftage. Patented tip design, with set-back orifice opening protects precision orifice from accidental damage. TeeJet spray nozzles are built for use on spray booms and portable sprayers.

OFF-CENTER SPRAY NOZZLES

Spraying Systems Spray Nozzles with Teejet tips are supplied in a variety of special body types to meet any unusual spraying requirement. For example, one type of off-center spray nozzle with swivel body provides a flat spray up to 35 feet wide for spraying areas with a single nozzle, that are not accessible with a boom.

SUPPLEMENTARY EQUIPMENT

Complete accessories relating to nozzle use are supplied. These include strainers, special nozzle fittings, and hand valve equipment.

TeeJet Spray Nozzles are supplied for Weed Control... as well as all other types of agricultural spraying. For complete information and reference data write for Catalog 30.

DPRAYING SYSTEMS CO. Engineers and Manufacturers

3275 RANDOLPH STREET

BELLWOOD, ILLINOIS

TEEJET SPRAY NOZZLE

male pipe

TEEJET SPRAY

NOZZLE female pipe

INTER-CHANGE-ABLE ORIFICE TIPS

flat and cone

spray types

connection

connection

ii



TOMATOES and TRANSPLANTED CROPS

Experimental Herbicide Natrin^{*} (sodium 2,4,5-trichlorophenoxyethyl sulfate). Apply after clean cultivation to get a weed-free harvest without crop injury.

SUGAR BEETS and CUCURBITS

Experimental Herbicide DCU^* (dichloral urea) mixed with the top layer of soil before planting gives annual grass control for as long as three months.

PEANUTS and SEED CORN BREEDING STOCK

CRAG Herbicide-1 (SES) cuts peanut production costs. Bigger yields result from increased weed control and less Southern Blight. In corn it is safe on sensitive inbreds, single and double crosses.

★ For experimental use only by or under the supervision of Federal or State agencies authorized by law to conduct research in the field of economic poisons. Treated crops should not be used for food or feed.

CRAG AGRICULTURAL CHEMICALS

CARBIDE AND CARBON CHEMICALS COMPANY

"Crag" is a registered trade-mark of Union Carbide and Carbon Corporation.

For Industry and Agriculture ...

Du Pont UREA HERBICIDES

offer new economies and efficiency in killing weeds, grass and brush

KARMEX® DL for pre-emergence weed control in cotton.

"KARMEX" W for weed control in asparagus, sugar cane, and pineapple. Also for irrigation and drainage ditch weed control.

TELVAR® for industrial weed and grass control. Also in certain areas, it is recommended for brush control. Available in two formulations: "Telvar" W and "Telvar" DW. The urea herbicides, products of Du Pont research, kill vegetation through the roots. Their efficiency is demonstrated by the relatively low dosages required to do the job. They can be easily applied, are non-flammable, non-volatile, non-corrosive and extremely low in toxicity.



Better Things for Better Living. . . Through Chemistry E. I. DU PONT DE NEMOURS & CO. (INC.) GRASSELLI CHEMICALS DEPT. WILMINGTON 98. DELAWARE

iv

depend upon	SINOX
for	DINITRO
for	WEED
	CONTROL
٩	

Our field research technical experts—alert to all current developments—constantly strive toward improved chemical products and techniques. We are devoted to the idea of *progress* in weed control.

SINOX W For selective spraying of seeding alfalfa, onions, flax, peas and grain seeded to legumes.

SINOX PE For pre-emergence spraying of potatoes, beans, corn and peas; control of winter annuals in fall seeded alfalfa and clover.

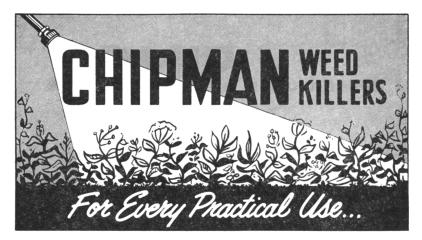
SINOX GENERAL As a desiccant for Seed Alfalfa, Clovers, Sudan Grass, Milo, and Flax. Used for general weed control in orchards, vineyards, irrigation ditches and roadsides. —Potato Vine Killing.

STANDARD AGRICULTURAL CHEMICALS, INC.



1301 Jefferson St., Hoboken, N. J.

429 Forum Building, Sacramento, Calif.



ATLACIDE: A chlorate weed killer ...widely used for non-selective eradication of bindweed, Canada thistle, quack grass, Johnson grass and other tough perennials. Kills roots...discourages regrowth. Applied as spray or in original dry form.

ATLACIDE WITH 2, 4-D: A combination of Atlacide and 2,4-D acid. Particularly recommended for Canada thistle control.

CHLOREA: A uniform, non-separating combination of sodium chlorate, borate and CMU. Kills *all* types of weeds and grasses. Combines the proven effectiveness of chlorate on deep-rooted weeds with the soil-surface action of CMU on shallow-rooted grasses and annual seedling growth. Has lasting residual effect to inhibit new growth. Does not create a fire hazard when used as directed. Applied dry or as a water-mixed spray. For industrial, railroad and certain agricultural uses.

CHLORAX "40": A non-separating composition of sodium chlorate and borate...for weed and grass control. Has a lasting residual effect. Does not create a fire hazard. Applied dry or as a spray. **CHLORAX LIQUID:** Similar to Chlorax "40"...in liquid form for easy mixing with water.

ATLAS "A": A 40% sodium arsenite solution (4 lbs. arsenic trioxide per gal.). Destroys certain submersed vegetation in ponds and lakes. Controls crabgrass, chickweed and clover in turf. Used as general weed killer and to kill trees and stumps. Also used to kill potato vines prior to harvesting.

SODIUM ARSENITE: A powder containing 75% arsenic trioxide. Used for the same purposes as Atlas "A". Applied dry or as a spray.

2, 4-D WEED KILLERS: Available as 2,4-D Amine and 2,4-D Ester liquids; also 2,4-D Ester dusts.

METHOXONE: Contains 2 pounds of MCP sodium salt per gallon. Used for weed control in small grains, flax, rice and grass. Controls same weeds as 2,4-D; considered safer for selective spraying.

Low Volatile 2,4,5-T Low Volatile Brush Killer Sodium TCA • IPC 25% Liquid Chipman General (Dinitro)

— Write for New Weed Control Booklets –

CHIPMAN CHEMICAL COMPANY, INC. Chicago, Ill. BOUND BROOK, N. J. Portland, Ore. Palo Alto, Calif. Pasadena, Tex. Bessemer, Ala. Manufacturers of Weed Killers Since 1912

vi

For Herbicides

DIAMOND'S facilities for manufacturing and distributing agricultural chemicals for weed and brush control assure formulators a dependable source of supply for these important materials.

2,4-D and 2,4,5-T Weed Killers and Brush Killers

Isopropyl Ester Butyl Ester Butoxy Ethoxy Propanol Esters (low volatile type)

think first of DIAMOND

DIAMOND ALKALI COMPANY Organic Chemicals Division 80 LISTER AVE., NEWARK 5, NEW JERSEY

Plants: Newark, N. J., Houston, Texas Chemicals you live by

DIAMOND CHEMICALS

vii



for effective, economical weed control

POTASSIUM CYANATE

for pre-emergence contact weedkilling, post-emergence selective contact weedkilling, top-killing and defoliation. Breaks down rapidly on contact with soil.

AERO[®] CYANAMID, Granular

Contains 20% nitrogen and 70% hydrated lime. For pre-emergence weed control in peas, corn, asparagus and other crops. For pre-seeding weed control in tobacco and other plant beds, for establishing or renovating weed-free turf. In granular form for easy handling and application.

AERO[®] CYANAMID, Special Grade

Contains 21% nitrogen and 70% hydrated lime. In dust form for pre-emergence residual and contact weed control. Defoliates cotton, field beans and other crops. For pre-harvest top-killing of tomatoes and potatoes.

AMINO TRIAZOLE (3-amino-1,2,4-triazole) (LIMITED QUANTITIES AVAILABLE FOR COMMERCIAL AND EXPERIMENTAL USE)

Herbicide, Defoliant, Growth Regulator

Amino Triazole has demonstrated effectiveness in control of a number of troublesome weeds, including Canada thistle, sow thistle, poison ivy, poison oak, quack grass, nut grass and certain woody species. By virtue of a short residual life in the soil, Amino Triazole can be sprayed on weed infestations a short time before planting without injury to the crop.

Amino Triazole translocates readily through the plant and produces unusual systemic effects, manifested by albinism or chlorophyll inhibition in new growth. This typical effect has continued to show up as long as one year after spraying certain species.

At rates of $\frac{1}{2}$ to $\frac{1}{2}$ pounds per acre, cotton has been defoliated and regrowth controlled for a sufficient time to permit harvest.

AMERICAN Cyanamid COMPANY

AGRICULTURAL CHEMICALS DIVISION

30 Rockefeller Plaza, New York 20, N.Y.

viii