



# *Weeds*

VOLUME 7  
APRIL 1959  
NUMBER 2

*Journal of the Weed Society of America*



# Weeds

*Issued Quarterly by the Weed Society of America*

**C. J. WILLARD**, *Editor*, Department of Agronomy, H. & F. Bldg., The Ohio State University, Columbus 10, Ohio.

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

## EDITORIAL COMMITTEE

**O. C. LEE**, Department of Botany and Plant Pathology, Purdue University, Lafayette, Indiana.

**R. A. PETERS**, Department of Plant Science, University of Connecticut, Storrs, Connecticut.

**W. C. ROBOCKER**, Crops Research Division, ARS, USDA, State College of Washington, Pullman, Washington.

**E. G. RODGERS**, Department of Agronomy, University of Florida, Gainesville, Florida.

WEEDS is a quarterly journal published by the Weed Society of America. Editorial office is located at Department of Agronomy, H. and F. Bldg., The Ohio State University, Columbus 10, Ohio. 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 Office. All checks, money orders, and other remittances should be made payable to the Weed Society of America.

Entered as second-class matter at the post office at Urbana, Illinois with additional entry at Geneva, New York.

## Table of Contents

	<i>Page</i>
Screening Procedure for Determining the Activity of Chemicals Against Imbibed Dormant Seeds. Stanley J. Pieczarka and G. F. Warren . . . . .	133
Selective Control of Wild Oats in Grain Crops by Use of Maleic Hydrazide. A. C. Carder . . . . .	141
Cytological Effects of CDAA and IPC on Germinating Barley and Peas. D. T. Canvin and G. Friesen . . . . .	153
The Decomposition of Herbicides in Soils. Peter Burschel and V. H. Freed . . . . .	157
Control of Johnsongrass ( <i>Sorghum halepense</i> L. Pers.) in Ohio by Herbicides and Cultural Practices. E. O. Burt and C. J. Willard . . . . .	162
Some Interactions Between Nutrient Level (N, P, K, Ca) and Diuron in the Growth of Cotton and Italian Ryegrass. S. W. Bingham and R. P. Upchurch . . . . .	167
Determining Minimum Amounts of Herbicide Needed for Aerial Brush Control. Eugene I. Roe . . . . .	178
Mechanical Preparation of Pine Planting Sites in Florida Sandhills. Harold E. Grelen . . . . .	184
The Comparative Toxicities of Monuron and Simazin in Soil. T. J. Sheets . . . . .	189
Foliar Penetration of Herbicides—Review and Present Status. H. B. Currier and C. D. Dybing . . . . .	195
A Fluorescent Dye Method for Foliar Penetration Studies. C. D. Dybing and H. B. Currier . . . . .	214
The Control of Weeds in Newly Established Sour Cherries. Franklin A. Gilbert, LeRoy Holm, and Ernest Haltvick . . . . .	223
Brief Paper:	
Metal Plot Stakes for Rocky Soils. V. F. Bruns and C. E. Anderson . . . . .	230
News and Notes . . . . .	231
Sustaining Members . . . . .	viii
Bibliography of Weed Investigations, July to September, 1958 . . . . .	233

## Advertisers Index

Union Carbide Chemicals Co. . . . .	ii
duPont de Nemours & Co. . . . .	iii
U. S. Borax & Chemical Co. . . . .	iv
Stauffer Chemical Co. . . . .	v
Chipman Chemical Co. . . . .	vi
Spraying Systems Co. . . . .	vii

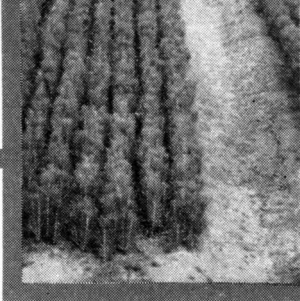
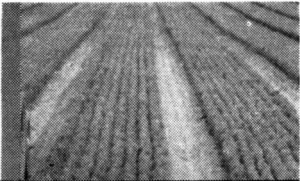




HELPS

FOREST TREE SEEDLINGS

GET OFF TO A BETTER START



In numerous tests throughout the country, formulations with CRAG Mylone soil fumigant have given excellent control of weeds, nematodes, and soil fungi in forest tree seed beds. Seedlings have a better chance to grow without interference from these pests.

When formulated, Mylone is an easy-to-handle powder that can be applied to the soil with a fertilizer spreader or as a drench. Application should be made at least three weeks before seeds are planted, except tobacco seed. Soil mixing is not necessary; no plastic cover is needed over the bed.

Formulations of CRAG Mylone are now commercially available for use in certain ornamental propagating beds, tobacco seed beds, and in tomato, pepper, egg plant, lettuce, and cabbage seed beds. It is also sold for weed and dry rot control in gladiolus in Florida. Experimental work is continuing with other crops.

Write to the address below for formulations in test quantities or more information. Names and addresses of commercial formulators are also available.

"Crag", "Mylone", and "Union Carbide" are trade marks of Union Carbide Corporation.

FORMULATIONS CONTAINING MYLONE NOW AVAILABLE FOR VEGETABLE SEED BEDS

A commercial label has been accepted for Mylone pre-planting use in seed beds of certain vegetables. Growers can now use it for the control of weeds, nematodes, and soil fungi in tomato, pepper, cabbage, egg plant, and lettuce seed beds.



CRAG Agricultural Chemicals
Union Carbide Chemicals Company

Division of Union Carbide Corporation
180 South Broadway, White Plains, New York



**For Agriculture and Industry . . .**

# **Du Pont WEED KILLERS**

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

**KARMEX®** diuron for weed control in many crops; irrigation and drainage ditches; and industrial areas.

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

**TELVAR®** monuron for weed control in many crops; irrigation and drainage ditches; and industrial areas.

**KLOBEN** neburon for weed and grass control in nursery plantings and tomatoes.

**DYBAR** fenuron—a pelleted product for dry application to the soil for control of brush in fence rows, drainage ditches, utility and railroad right-of-ways, and other non-cultivated areas.

**TRYBEN 200**, a new weed killer based on trichlorobenzoic acid, for control of bindweed and other noxious weeds; mixed broad-leaf weeds; and certain woody vines and brush.

**AMMATE® X** for long-term, low-cost brush control.



Better Things for Better Living . . . . *Through Chemistry*

**Four  
easy  
ways to  
Destroy  
Weeds**

**1. UREABOR®**

A nonselective, granular complex of sodium borate and substituted urea. Low application rates are a feature. Apply with the special new PCB Spreader for best results.

**2. DB® Granular**

A combination of 2,4-D and sodium borates. Kills deep-rooted, noxious weeds. Low application rates for maximum control with the utmost economy; use the PCB Spreader. *(Not intended for control of grass.)*

**3. POLYBOR-CHLORATE®**

Highly soluble; for spray or dry application. It gives a quick knock-down; destroys top growth and roots. A general nonselective herbicide.

**4. Concentrated BORASCU®**

A nonselective, granular material. Apply by hand or with a mechanical spreader. Long residual action.

*When you want Nonselective Herbicides*

*for Dependable Action*

*look to United States Borax & Chemical Corporation*

PACIFIC COAST BORAX COMPANY DIVISION



630 Shatto Place, Los Angeles 5, Calif.



# New label granted **Eptam**<sup>®</sup> herbicide

**EPTAM (EPTC)** is now recommended for use in the following crops:

Snap beans	Forage legumes
Dry beans (except limas)	Irish potatoes
Table and sugar beets	Established Strawberries
Carrots	Established Tomatoes
Field and sweet corn	Established Nursery Stock
Flax	Established Ornamentals

*For control of the following:*

**Annual Grasses:** Annual blue grass, crab grass, crow-foot grass, foxtails (barley, bristly, green, giant and yellow), goose grass, oats, old witch grass, rye grass, sandbur, stinkgrass, water grass (barnyard grass), wild cane (black amber cane) and wild oats.

**Perennials:** Johnson grass (seedlings), nutgrass (yellow and purple), quackgrass (seedlings and established).

**Broadleaves:** Careless weed, chickweed (common), corn spurry, cud weed, dead nettle (henbit), fiddleneck, Florida purslane, kochia, lamb's quarters, pigweed (prostrate and red-root), purslane, ragweed, shepherd's purse and smart-weed.

EPTAM should be thoroughly incorporated into the soil immediately by rotary tilling, disking or spike-tooth harrowing.

Broadcast applications of either spray or granular EPTAM give effective weed control of the entire treated area. For row crops such as corn, EPTAM can be applied in bands at the time of planting for control in the rows. Incorporation into the soil can then be accomplished by shallow disking in the same direction as the rows.

Testing of EPTAM to control grasses and weeds in other crops is continuing. For full information, write to the address below.

©EPTAM is Stauffer Chemical Company's trade-mark for ethyl di-n propylthiolcarbamate (EPTC), a herbicide.



**STAUFFER CHEMICAL COMPANY**  
*Sales Development Department*  
**Agricultural Chemicals Division**  
380 Madison Avenue, New York 17, N. Y.



**ATLACIDE:** Safer 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 dry or dissolved in water.

**ATLACIDE-2,4-D:** Offers dual killing action of sodium chlorate and 2,4-D.

**CHLOREA:** A combination of sodium chlorate, borate and monuron in powder form. Kills weeds and grasses. Combines the proven effectiveness of chlorate on deep-rooted weeds with the soil-surface action of monuron on shallow-rooted grasses and annual seedling growth. Lasting residual effect inhibits new growth. Does not create a fire hazard when used as directed. Applied dry or as a water-mixed spray.

**CHLOREA GRANULAR** Similar to Chlorea, but a "pelletized" material. No mixing...easy to apply by hand or with mechanical spreader.

**CHLORAX "40":** A composition of sodium chlorate and borate...for weed and grass control. Has lasting residual effect. Does not create a fire hazard. Applied dry or as a spray.

**ATLAS "A":** A 40% sodium arsenite solution (4 lbs. arsenic trioxide per gal.). Destroys vegetation and algae in ponds and lakes. Controls certain turf weeds. 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.

**CHIP-CAL:** New low-lime calcium arsenate formulation in granular and spray powder forms. Used as crabgrass preventatives for established turf. Applied any time before crabgrass seed starts to germinate.

**2,4-D & 2,4,5-T:** 2,4-D Amine and 2,4-D Ester liquids; 2,4-D Ester dusts; Low Volatile 2,4,5-T and Brush Killer.

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

**BUTOXONE:** A liquid containing 4-(2,4-DB). For selective control of many broadleaf weeds in established alfalfa and certain other legumes.

*Write for Weed Control Booklets*

**CHIPMAN CHEMICAL COMPANY, INC.**

Chicago, Ill.

Bound Brook, N. J.

Portland, Ore.

Palo Alto, Calif.

Pasadena, Tex.

Bessemer, Ala.

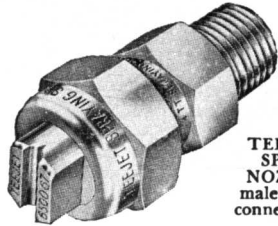
*Manufacturers of Weed Killers Since 1912*



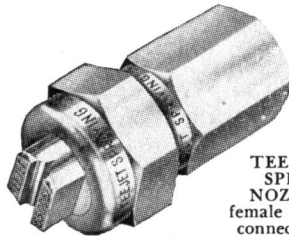


the precision nozzle for effective spraying

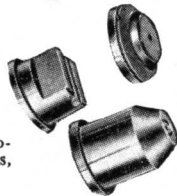
Supplied in a full range of interchangeable orifice tip and strainer sizes to meet every capacity requirement. TeeJet Spray Nozzles for Weed Control by spraying make it possible to take maximum advantage of the chemical and sprayer unit. TeeJet nozzles are precision built and provide a flat spray with 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.



TEEJET SPRAY NOZZLE male pipe connection



TEEJET SPRAY NOZZLE female pipe connection



INTERCHANGEABLE ORIFICE TIPS flat and cone spray types

**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.

**SPRAYING SYSTEMS CO.**  
*Engineers and Manufacturers*

3296 RANDOLPH STREET

BELLWOOD, ILLINOIS