

Weeds

JANUARY 1954 NUMBER 1

> NATIONAL LENDING E DIAG For BOIENCE & TECHNOLOS: BECONDINAND PURCHASE 11 DECIYOY

al of the Association of Regional Weed Control Conferences

EDITORIAL BOARD

Western	Weed	Control	Conference	W.	A.	HA	RVEY,	College	of .	Agri-
								s, Califo		

North Central Weed Control Conference......R. S. Dunham, College of Agriculture, St. Paul, Minnesota.

Northeastern Weed Control Conference......R. D. Sweet, Department of Vegetable Crops, Cornell University, Ithaca, New York.

C. E. MINARIK, *Editor*, Camp Detrick, Frederick, Maryland.
R. D. SWFET, *Business Manager*, Cornell University, Ithaca, New York

STATE REPORTERS

V. S. SearcyAlabama	N. E. ShaferNebraska							
H. J. HodgsonAlaska	W. W. SmithNew Hampshire							
H. F. ArleArizona	R. J. Aldrich							
D. A. HinkleArkansas	W. C. Robocker Nevada							
O. A. LeonardCalifornia	J. W. WhitworthNew Mexico							
B. J. ThorntonColorado	S. N. FertigNew York							
R. A. PetersConnecticut	G. C. KlingmanNorth Carolina							
E. M. RahnDelaware	E. A. HelgesonNorth Dakota							
E. G. RogersFlorida	E. K. AlbanOhio							
E. W. HauserGeorgia	J. DreessenOklahoma							
N. S. Hanson	V. H. FreedOregon							
C. I. SeelyIdaho	S. M. RaleighPennsylvania							
F. W. SlifeIllinois	T. MuzikPuerto Rico							
G. F. WarrenIndiana	T. E. OdlandRhode Island							
D. W. StaniforthIowa	W. B. AlbertSouth Carolina							
V. I. WoestermeyerKansas	L. A. DerscheidSouth Dakota							
S. J. P. ChiltonLouisiana	J. K. LeasureTennessee							
M. F. TrevettMaine	R. A. DarrowTexas							
A. O. KuhnMaryland	F. L. TimmonsUtah							
W. H. LachmanMassachusetts	A. R. MidgleyVermont							
B. H. GrigsbyMichigan	W. E. ChappellVirginia							
H. L. HansenMinnesota	L. W. RasmussenWashington							
W. B. EnnisMississippi	C. VeatchWest Virginia							
D. L. KlingmanMissouri	K. P. BuchholtzWisconsin							
R. L. WardenMontana	D. W. BohmontWyoming							

Weeds is a quarterly journal published by the Association of Regional Weed Control Conferences. Editorial offices are located at Camp Detrick, Frederick, Maryland. Printing is by the W. F. Humphrey Press, Inc., Geneva, New York. Subscription price is \$4.00 yearly for four issues; single copies \$1.25. Address all communications regarding subscriptions and advertising to R. D. Sweet, Department of Vegetable Crops, Cornell University, Ithaca, New York. Inquiries concerning information on manuscripts, other material for publication and reprints should be addressed to the Editorial offices. All checks, money orders and other remittances should be made payable to WEEDS, Journal of the Association of Regional Weed Control Conferences.

Entered as second-class matter at the post office at Ithaca, New York, and Geneva, New York

Table of Contents

	Poge
Editorial	i
Effects of Water Upon the Movement of Dinitro Weed Killers in Soils. F. 1	
Davis and F. L. Selman	
Some Aspects of Right-of-Way Brush Control with 2,4,5-T and 2,4-D. L. L.	
Coulter	21
Synthetic Plant-Growth Modifiers. IV. 2-Methyl-4-Chlorophenoxyacetyl Derivatives of Amino Acids. C. F. Krewson, C. H. H. Neufeld, T. F. Drake,	
T. D. Fontaine, J. W. Mitchell and W. H. Preston, Jr	28
Regulatory Aspects in Weed Control. W. S. Ball	38
Responsibilities of an Extension Weed Specialist. W. A. Harvey	45
Extension Work with Respect to Weed Control. P. V. Kepner	49
Mode of Action of Phytotoxic Oils. J. van Overbeek and R. Blondeau	55
Weed Control in Onions in the Organic Soil of the Florida Everglades. V. L. Guzman and E. A. Wolf	66
Precision Sprayer for Small Plots. S. R. McLane, E. W. Dean and C. E.	
Minarik,	75
News and WEED Affairs	80
Ribliography of Weed Investigations for July, August and September 1953	83

Editorial

In assuming the duties of Editor of WEEDS the undersigned shall attempt to place the journal on a firm publication schedule and shall encourage submission of papers involving all aspects of weed control, including research, regulatory and extension. WEEDS will not compete with the Proceedings of Regional Weed Control Conferences for papers since the Proceedings normally publish progress report type papers. These are not considered appropriate for WEEDS. This journal will continue to accept only high caliber papers that are a credit to the profession of weed control. The Editorial Board will share in the duties and responsibilities for continuing this journal as a vigorous publication devoted to the requirements of workers in the field of weed control. The Editor will at all times welcome suggestions for improving this journal.

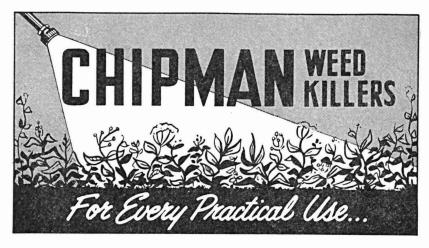
The invitational papers that were presented at the First National Weed Control Conference at Kansas City, December 8 and 9, 1953, will appear in this Journal. In many instances they will be published as they were presented with only minor editorial changes.

Title Pages, Tables of Contents and Indices for Vol. I and Vol. II

will appear in an early number of Vol. III.

One of the most serious bottlenecks in processing manuscripts is occasioned by a single manuscript being reviewed by two reviewers in turn. Authors are requested to submit two complete manuscripts in order to expedite processing.

C. E. MINARIK



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...destroys entire plant...discourages regrowth. Applied as spray or in original dry form. Atlacide is backed by over 25 years of successful use, plus an outstanding reputation as "the safer chlorate".

ATLACIDE WITH 2, 4-D: A combination of Atlacide and 2,4-D acid. Offers dual killing action of sodium chlorate and 2,4-D.

CHLORAX SPRAY POWDER: A non-separating composition of sodium chlorate and pentaborate. For use where long-lasting residual effect is desirable...such as along fence rows, ditch banks, around buildings and other structures. Kills practically all types of weeds and grasses. Creates no fire or poison hazard. Applied dry or as spray.

ATLAS "A": A 40% sodium arsenite solution (4 lbs. arsenic trioxide

per gal.). Destroys certain submersed vegetation in ponds and lakes. Used for selective control of crabgrass, chickweed and clover in turf. Also used as general weed killer for annual weeds and grasses. Used to kill trees and stumps.

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, especially in flax.

Low Volatile 2,4,5-T Low Volatile Brush Killer Sodium TCA 90% IPC 90% Liquid CIPC-4L (Chloro IPC) Chipman General (Dinitro)

- Write for Weed Control Booklet -

CHIPMAN CHEMICAL COMPANY, INC.

BOUND BROOK, N. J.

Chicago, Ill. . Palo Alto, Calif. . Pasadena, Tex. . Portland, Ore.

Manufacturers of Weed Killers Since 1912

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

Planis: Newark, N. J., Houston, Texas Themicals you live by



For dependable control of weeds, grass and brush

Use DuPont Weed & Brush Killers

Weed Killer clears the ground of vegetation. This new, powerful chemical kills weeds and grass and prevents regrowth. Just 1 or 2 lbs. per 1,000 square feet may do the job for a year! CMU is non-volatile, non-flammable, non-corrosive, easy to use in spray.

AMMATE[®] Weed and Brush Killer destroys roots and tops so there's little resprouting. Ideal for killing poison ivy, woody plants and clearing rights-of-way. Keeps brush down with little or no retreatment necessary. Non-volatile, non-flammable, non-poisonous to livestock.

Other Du Pont Weed and Brush Killers include TCA and 2,4-D Weed Killers; also 2,4-D – 2,4,5-T and 2,4,5-T Brush Killers. For details, write Du Pont, Grasselli Chemicals Dept., Wilmington, Del.



BETTER THINGS FOR BETTER LIVING ... THROUGH CHEMISTRY

Products for Agriculture from

bordes



... BY THE MANUFACTURERS OF FAMOUS "20 MULE TEAM" PACKAGE PRODUCTS

Weed Killers

Nonselective - Long-Lasting Effects

BORASCU®
CONCENTRATED BORASCU®
POLYBOR-CHLORATES®
GERSTLEY BORATE

Borate Fertilizers

for Correction of Boron Deficiency

FERTILIZER BORATE—Regular Grade
FERTILIZER BORATE—High Grade
POYBOR-2®...for foliar spray applications

Cotton Defoliation

CHEM-FROST DEFOLIANT

LIQUID DRY

Wetting Agent

SPRAY-CHEM-A

Parasite (Lorvoe) Control

POLYBOR-3®

Destroys Larvae of:

FLIES DOG HOOKWORM

● FOR FURTHER INFORMATION, WRITE TO: 630 SHATTO PLACE, LOS ANGELES 5, CALIF.

PACIFIC COAST BORAX CO.

LOS ANGELES, NEW YORK AND ALL PRINCIPAL CITIES



but for fast, positive control

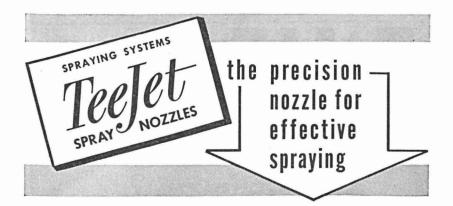
buy Pittsburgh

2, 4-D

Crop yields go up and weed control costs go down when you spray with Pittsburgh 2,4-D. This dependable weed killer gives you better weed killing performance because it's Quality-Controlled at every step of production. If you need a low volatile formulation, ask for Pittsburgh D4. Buy the Pittsburgh 2,4-D formulation you need at your Dealer's today!



Standard for Quality



Supplied in a full range of interchangeable orifice tip and strainer sizes to meet 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 NOZZLE male pipe connection

TEEJET SPRAY NOZZLE female pipe connection

INTERCHANGE ABLE
ORIFICE TIPS flat and consecution

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 Bulletin 58.

PRAYING SYSTEMS CO.

Engineers and Manufacturers

3275 RANDOLPH STREET

BELLWOOD, ILLINOIS

spray types



No one knows so well as
the man of science how
things are changing about
us. In the field of herbicides,
it takes up-to-the-minute facilities and know-how to keep
abreast of developments. Our long
years in the business have afforded
us both these qualities. When you recommend Thompson-Hayward herbicides, you
can be assured they are modern, honestly
formulated, and that they will perform
exactly as the label represents. What
else can a herbicide be?



THOMPSON-HAYWARD CHEMICAL CO.

KANSAS CITY • NEW ORLEANS • DENVER • OMAHA • CHICAGO • MEMPHIS

DAVENPORT • WICHITA • DALLAS • HOUSTON • ST. LOUIS • DES MOINES • SAN ANTONIO

N. LITTLE ROCK • OKLAHOMA CITY • MINNEAPOLIS • TULSA • LUBBOCK

WEEDONE®

Constantly Searching-----

We maintain a permanent department whose field research is ever seeking new and improved chemicals and methods for weed and brush control.

AMERICAN CHEMICAL PAINT COMPANY

Agricultural Chemicals Division

AMBLER, PA.

Originators of 2,4-D and 2,4,5-T Weedkillers





for effective, economical weed control

AERO* CYANATE, Weedkiller

Contains 92% 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 preemergence 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.

AERO* CYANAMID, Soluble

A readily soluble form of Cyanamid for spray application. Contains 85% monosodium cyanamide and about 40% nitrogen. Recommended as a cotton defoliant. Available in experimental quantities for herbicidal testing.

*Trade-mark

AMERICAN Gyanamid COMPANY

AGRICULTURAL CHEMICALS DIVISION
30 Rockefeller Plaza, New York 20, N. Y.