

# **Weed Control Update focusing on Organic Herbicides**

Tom Lanini

[wtlanini@ucdavis.edu](mailto:wtlanini@ucdavis.edu)

# Organic Herbicides

## Registered as Organic

- C-Cide
- Green Match
- Matran EC
- Acetic Acid
- Weed Zap

## Not Registered

- Racer
- Raps
- Green Match EX

**All are contact type herbicides – no residual activity**



## **THE ALL-NATURAL VITAMIN-C BASED HERBICIDE A MINIMUM RISK PESTICIDE**

**C-CIDE IS AN ALL-NATURAL, NON-HAZARDOUS, MINIMUM RISK HERBICIDE.  
THIS PRODUCT IS EFFECTIVE AT CONTROLLING UNWANTED PLANT & WEED GROWTH.**

### **DIRECTIONS FOR USE:**

1 Gallon of C-Cide at 3:1 dilution with water will treat 1,000 sq.ft.

For Poison Ivy and Resilient Vegetation  
DILUTE 3:1.

(Example: 1 oz. of C-Cide with 3 oz. of water)

For Solf Weeds & General Vegetation Control  
DILUTE 4:1 to 10:1

For Hard Skinned Weeds  
DILUTE 2:1

### **LIQUID APPLICATIONS:**

1. Dilute C-Cide with water, as per instructions above.
2. Use a thin stream sprayer can to apply C-Cide apply directly over unwanted vegetation.
3. Results will be visible within 48 hours.

### **CAUTION:**

Use caution when applying. Apply **ONLY** to vegetation you want to treat. This product will kill grass and other vegetation on contact.

### **STORAGE & DISPOSAL**

Store in cool place. Do Not reuse bottle. Rinse bottle and discard in trash.

*C-Cide is excellent for controlling:  
poison ivy, poison oak,  
poison sumac, garden weeds,  
indian grass,  
straw grass and more.*

**THIS PRODUCT HAS NOT BEEN  
REGISTERED BY THE UNITED  
STATES ENVIRONMENTAL  
PROTECTION AGENCY.**

**THIS PRODUCT QUALIFIED FOR  
EXEMPTION FROM  
EPA REGISTRATION UNDER  
FIFRA SECTION 25(B).**

**KEEP OUT OF REACH OF CHILDREN.**

**RESEARCH IS CONTINUING  
WITH CORNELL COOPERATIVE  
EXTENSION IN THE AREAS:  
SYSTEMIC MECHANISM  
PLANTING TIME AFTER  
C-CIDE TREATMENT**

**PRECAUTIONARY STATEMENTS:**  
Hazardous to humans and domestic animals.

### **CAUTION:**

Causes moderate eye irritation. Avoid contact with eyes.

Wash thoroughly with soap and water after handling.

### **FIRST AID:**

**If In Eyes:** Flush eyes with water for at least 15 minutes. Contact physician. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a Poison Control Center or doctor for treatment advice. Have the product container or label with you when calling a Poison Control Center or doctor, or going for treatment. You may also contact 1-866-842-1708 for Emergency Medical Information.

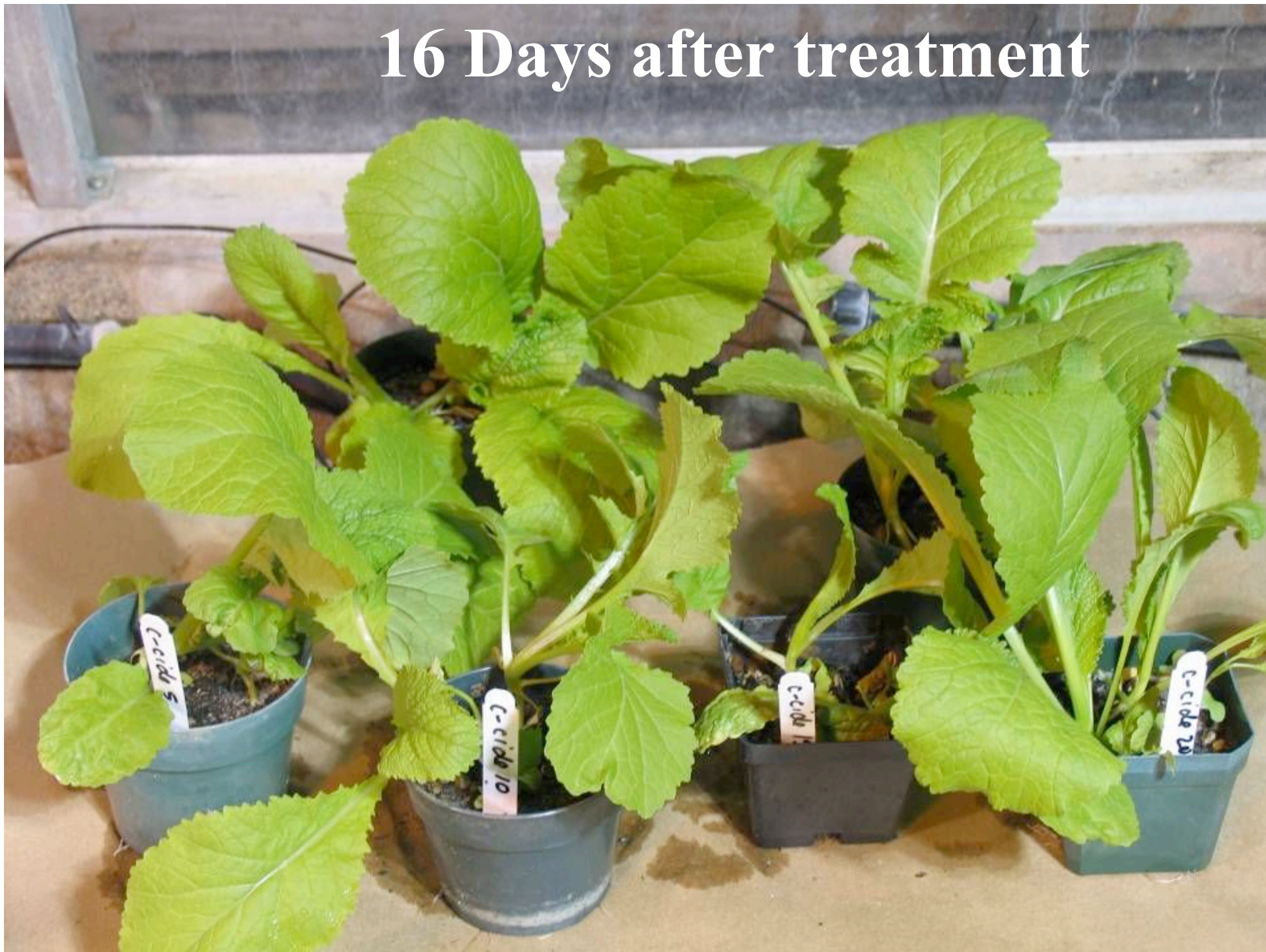




**0.25% v/v Natural Wet  
35 gallons per acre spray volume**



16 Days after treatment







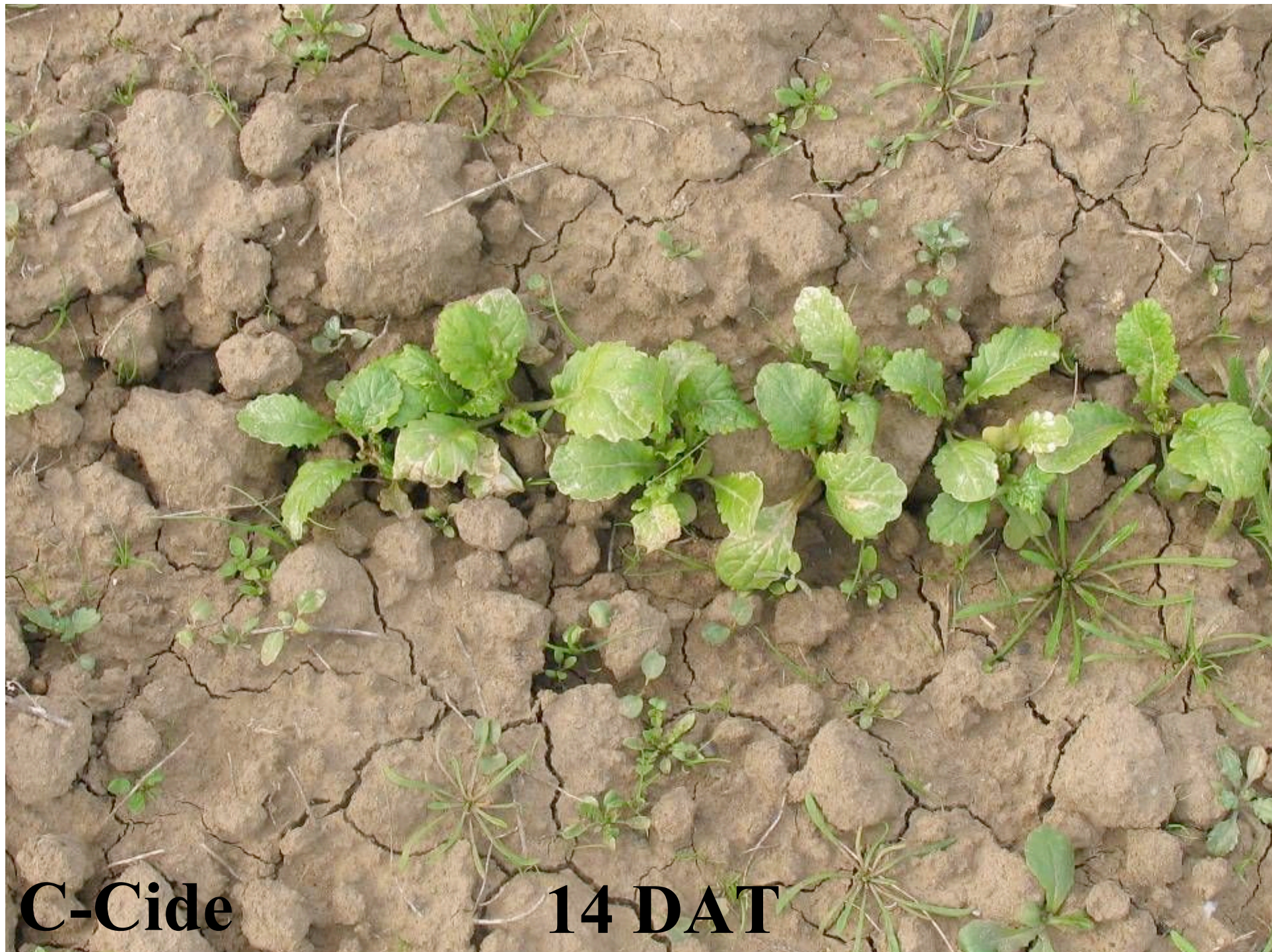
**C-Cide**

**6 DAT**

**10% v/v**

**70 gallons per acre spray volume**





**C-Cide**

**14 DAT**



# GreenMatch O

Burndown Herbicide

## For Control of Annual and Broadleaf

## Weeds In Non-Crop Areas

ACTIVE INGREDIENT: d-limonene .....	70%
INERT INGREDIENTS:.....	30%
Total .....	100%

### KEEP OUT OF REACH OF CHILDREN

### CAUTION

EPA Reg. No. 82052 - 1

EPA Est. No. 82052-GA-1

Manufactured by:

Cutting Edge Formulations, Inc.

5106 Bristol Industrial Way

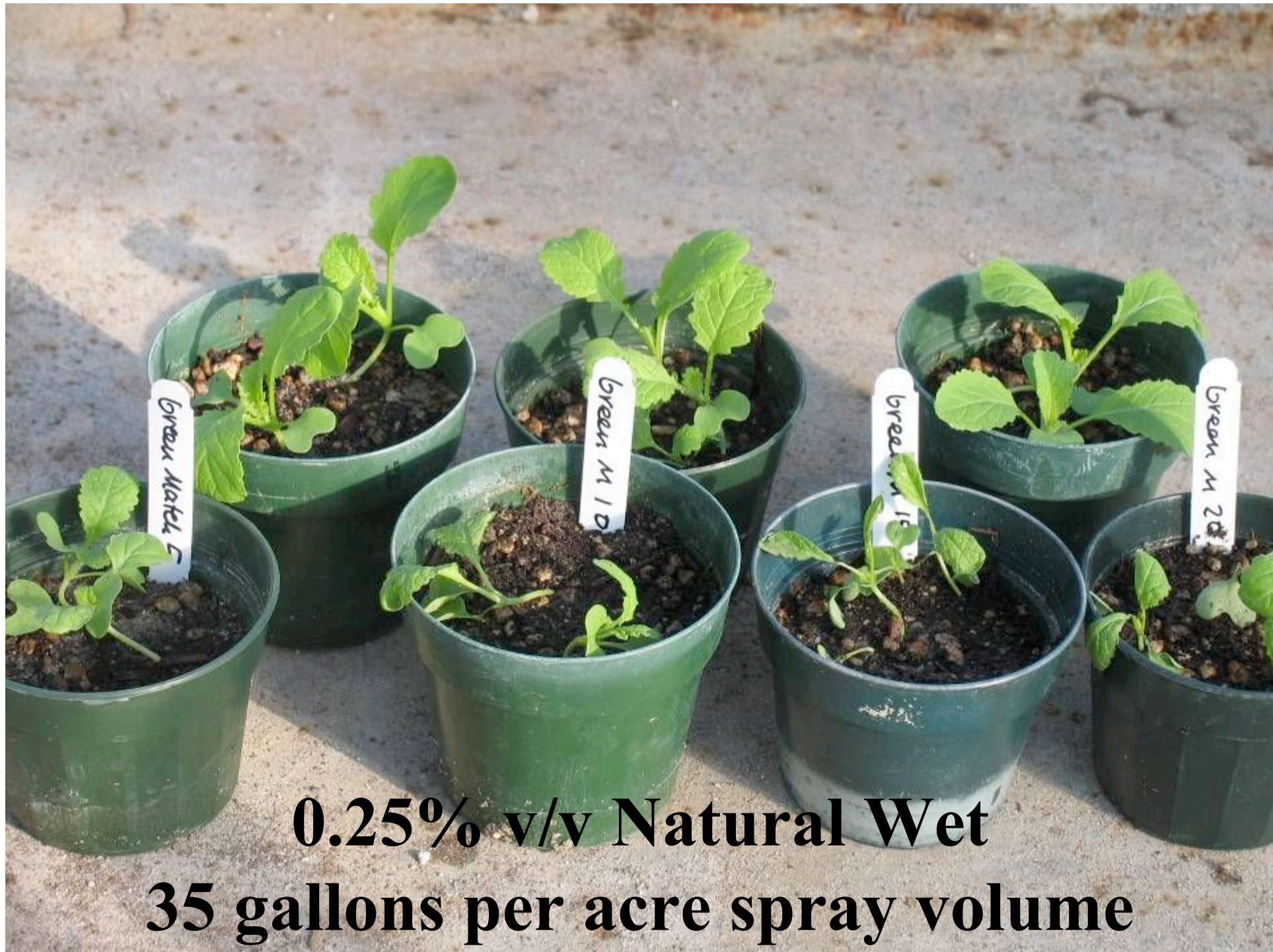
Buford, GA 30518

(866) 906-WEED

### DIRECTIONS FOR USE:

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

**General information:** GREENMATCH O is a broad spectrum weed killer that contains a citrus extract. It is non-selective and controls most annual weeds, both grasses and broadleaves. For best performance, complete coverage of target weeds is necessary. Spray until thoroughly wet. It is recommended for non-food areas such as borders, driveways, sidewalks, around mature trees and ornamentals, around buildings, in greenhouses and around flower beds.



**0.25% v/v Natural Wet  
35 gallons per acre spray volume**





**GreenMatch O**  
Burndown Herbicide

**6 DAT**

**10% v/v**

**70 gallons per acre spray volume**





**GreenMatch**  
Burndown Herbicide

**6 DAT**

**17.5% v/v**

**70 gallons per acre spray volume**

# Matran EC

## EMULSIFIABLE CONCENTRATE

- NO REENTRY INTERVAL

Ingredients in this product meet  
the requirements of the USDA  
National Organic Program

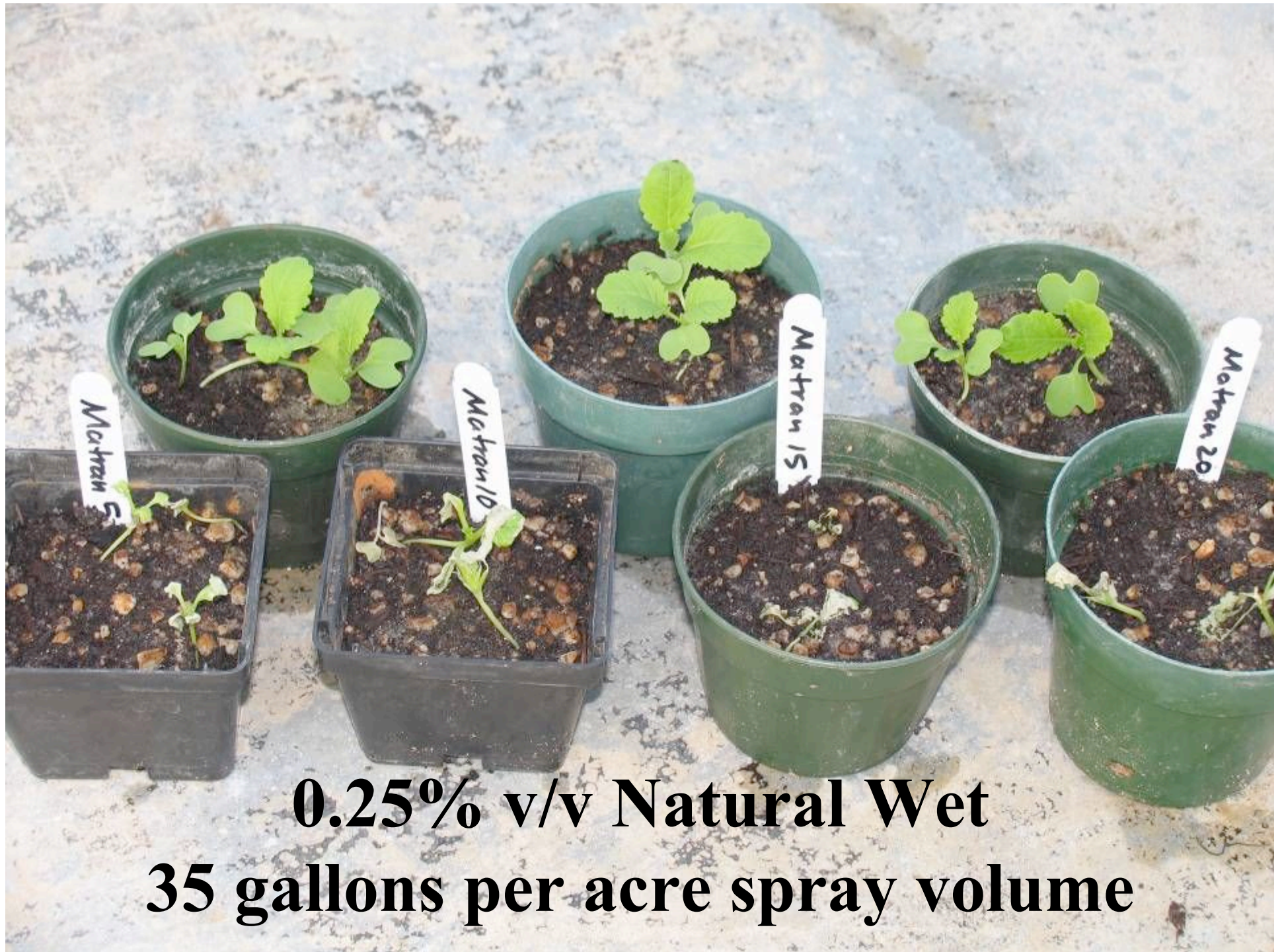
### Active Ingredients:

Clove Leaf Oil.....	50.00%
Other Ingredients* .....	50.00%
Total	100.00%

\*Wintergreen Oil, Butyl Lactate, and Lecithin







**0.25% v/v Natural Wet  
35 gallons per acre spray volume**





**Matran EC 20%**

**Untreated**

**GreenMatch 12.7%**





**Matran EC**

**14 DAT**

**5% v/v + 2.5% humasol**

**35 gallons per acre spray volume**





**Matran EC**

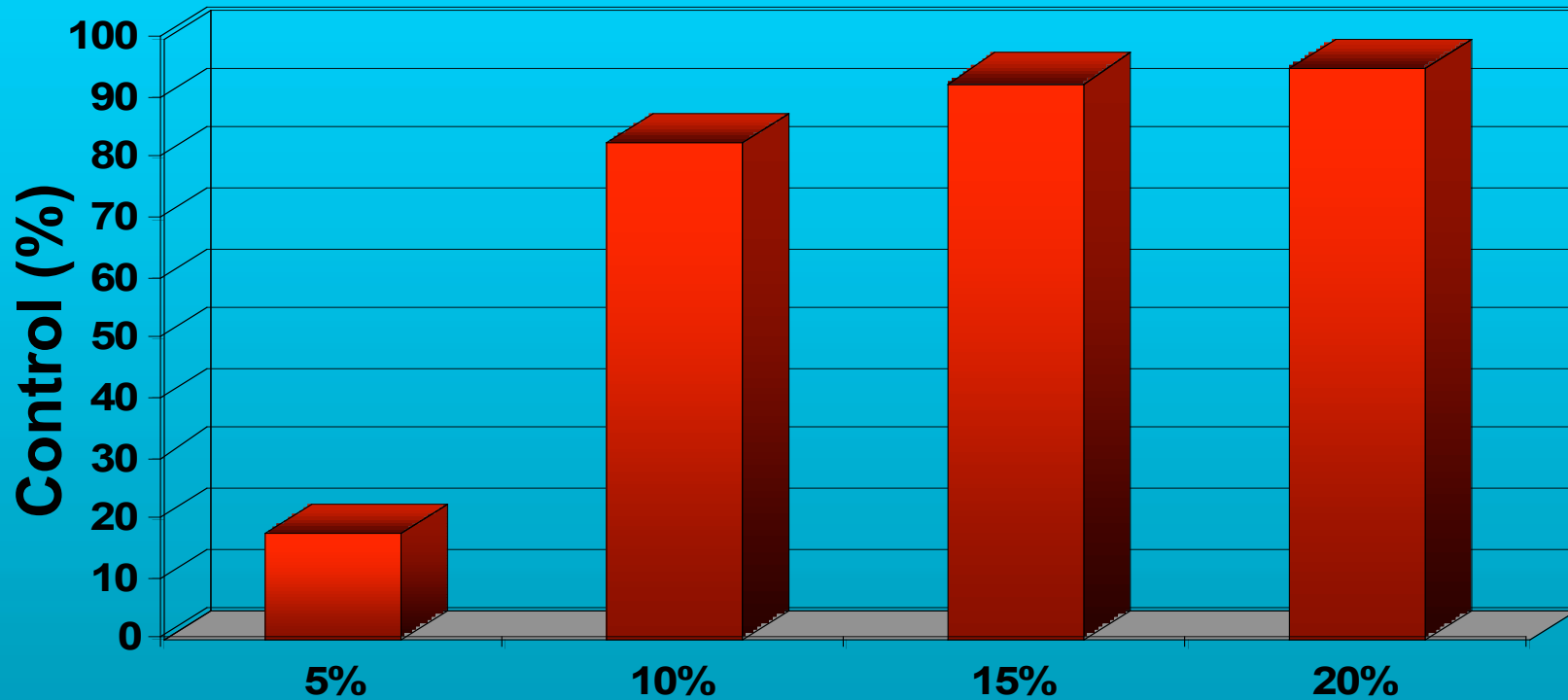
**14 DAT**

**10% v/v + 2.5% humasol**

**35 gallons per acre spray volume**



# Mustard Control with Matran EC (35 gpa)



14<sub>1</sub> DAT Treated Dec 20, 2006  
2-3 leaf mustard

2.5% Humasol added to all trmths



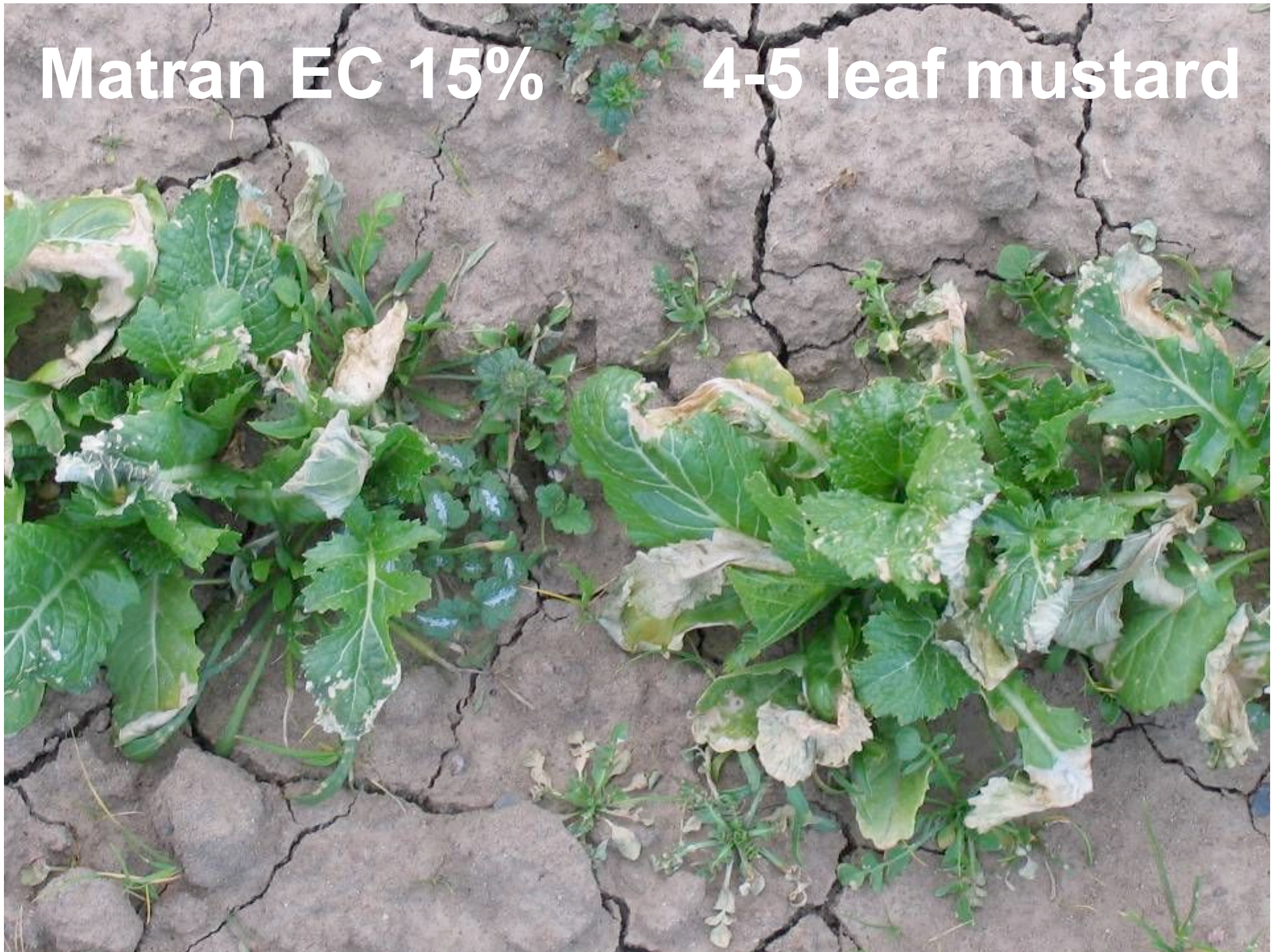
**Matran EC 10% 4-5 leaf mustard**





Matran EC 15%

4-5 leaf mustard





# Acetic Acid

**Fleischmann's** *Vinegar*

*200 South Main St., Nixa, MO 65714  
417-725-3596*

DATE: 5/2/06

STRENGTH: 300 grain

PRODUCT: White Distilled Vinegar

Made in the U.S.A.





**Acetic Acid**

**14 DAT**

**10% v/v + 0.1% yucca extract  
70 gallons per acre spray volume**



# Acetic Acid

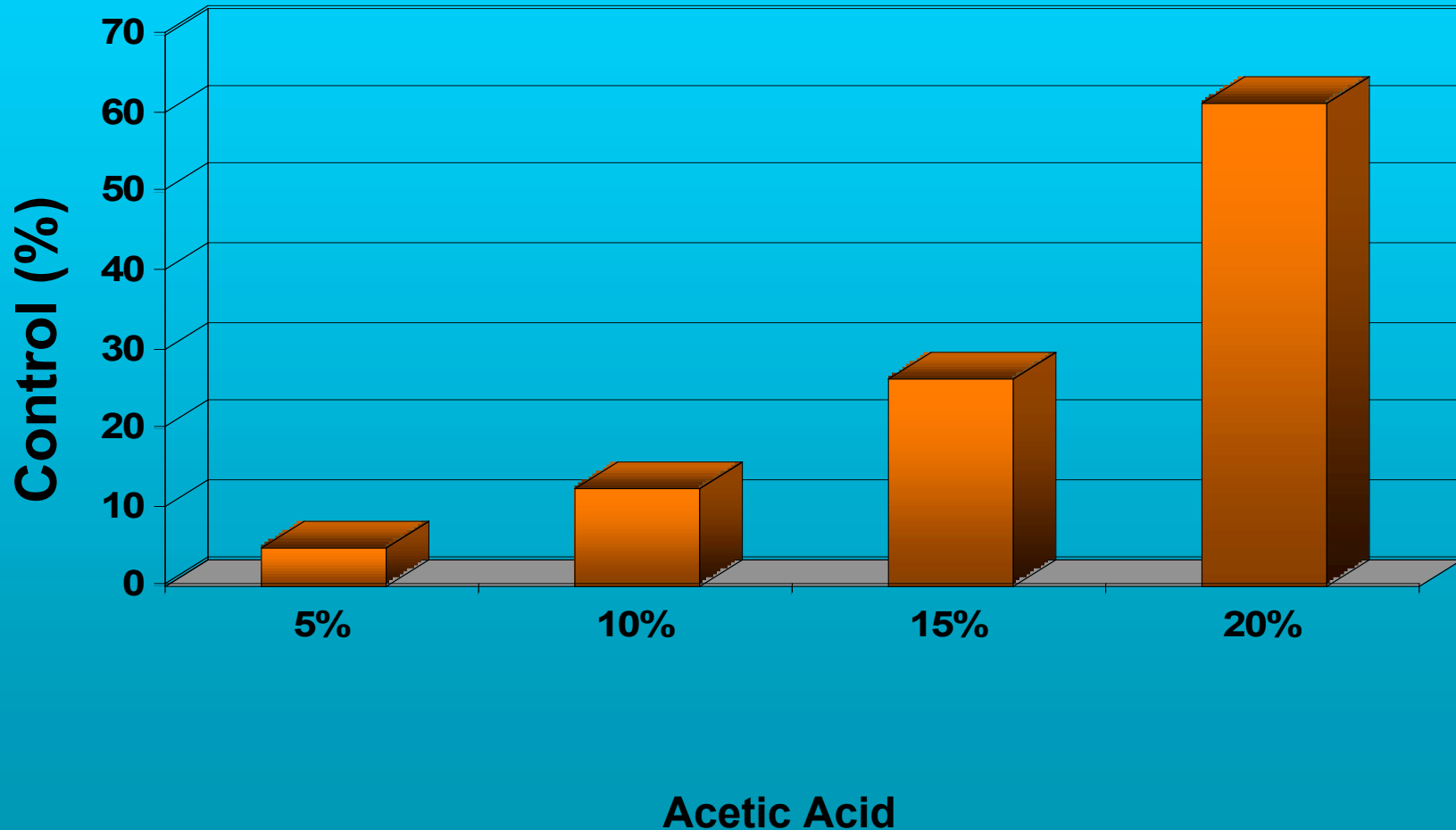


14 DAT

15% v/v + 0.1% yucca extract  
70 gallons per acre spray volume



# Mustard Control with Acetic Acid (70 gpa)



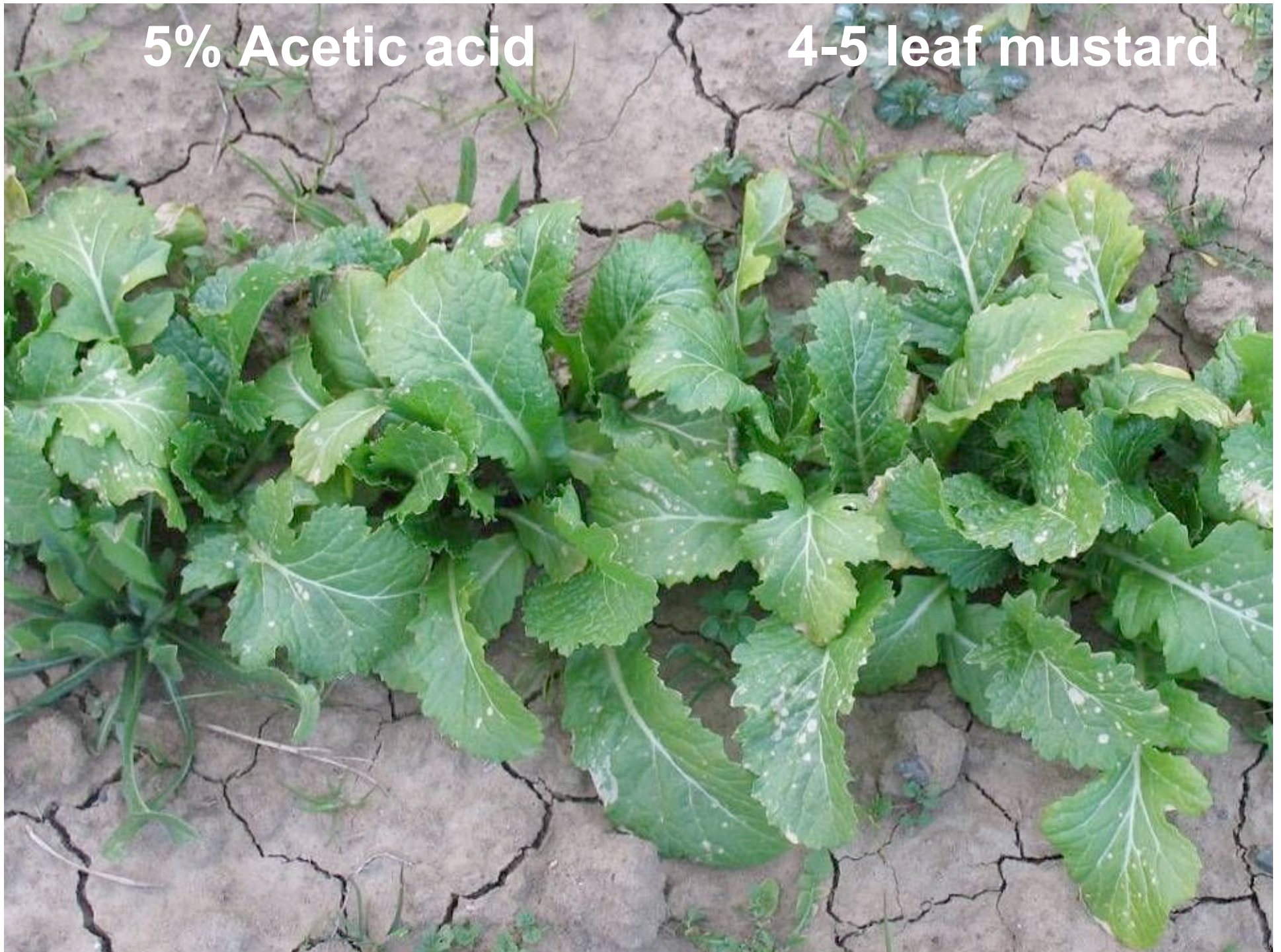
14<sub>1</sub>DAT Treated Dec 20, 2006  
2-3 leaf mustard

0.1% Yucca extract added to all trmmts



**5% Acetic acid**

**4-5 leaf mustard**







**10% Acetic acid**





**15% Acetic acid 4-5 leaf mustard**





# WEED ZAP™



**A NON-SELECTIVE HERBICIDE FOR ANNUAL GRASSES AND WEEDS**

### General Information

WEED ZAP is a contact, non-selective, broad spectrum, foliar-applied herbicide. This product will only control actively growing emerged green vegetation. It controls both annual and perennial broadleaf and grassy weeds. This product does not translocate. It will affect only those plants that are coated with the spray solution.

#### ACTIVE INGREDIENTS:

Clove Oil .....	45%
Cinnamon Oil.....	45%
Inert ingredients: .....	10%
Lactose and Water.....	
<b>TOTAL .....</b>	<b>100%</b>

This product is exempt from registration with the Federal EPA under section 25 (b) of FIFRA. WEED ZAP has not been registered with the Environmental Protection Agency. JH Biotech, Inc. represents that this product qualifies for exemption from registration under the Federal Insecticide, Fungicide and Rodenticide Act.

**International & United States Patents Pending**

### APPLICATION RATE TABLE

Mix 3 gallons of WEED ZAP concentrate per 100 gallons of spray water. Apply enough WEED ZAP to cover the entire surface of the weed. Spray to the point of run off. The use of a spreader/sticker such as JH Biotech's Natural Wet® may increase contact and efficacy of treatment.

#### FINAL MIX VOLUME

1 Gallon	4
5 Gallons	20
10 Gallons	40
25 Gallons	100

Repeat application as necessary. Coverage is essential to establish control.

Lot #:

### CAUTION KEEP OUT OF REACH OF CHILDREN PRECAUTIONARY STATEMENTS

Off target application of WEED ZAP will result in damage to growing plants. Do not apply this product through the irrigation system.

Avoid contact with skin, eyes or clothing. In case of contact, immediately flush eyes or skin with plenty of water. Get medical attention if irritation persists.

#### STATEMENT OF PRACTICAL TREATMENT

IF SWALLOWED	-Call a Physician or Poison Control Center. -Drink one or two glasses of water. -Do not induce vomiting. -If person is unconscious, do not give anything by mouth or induce vomiting.
IF IN EYES	-Hold eyelids open and flush with a steady, gentle stream of water for 15 minutes. -Get medical attention if irritation persists.
IF ON SKIN	-Wash with plenty of soap and water. -Get medical attention if irritation persists.

#### LIMITED WARRANTY

Manufacturer or seller makes no warranty, whether expressed or implied, concerning the use of this product other than for the purposes indicated on the label. Neither manufacturer nor seller shall be liable for any injury or damage caused by this product due to misuse, misbranding or any application not specifically described on the label.

Manufactured By: JH Biotech, Inc. P.O. Box 3558, Ventura, CA 93006

#### NET CONTENTS:

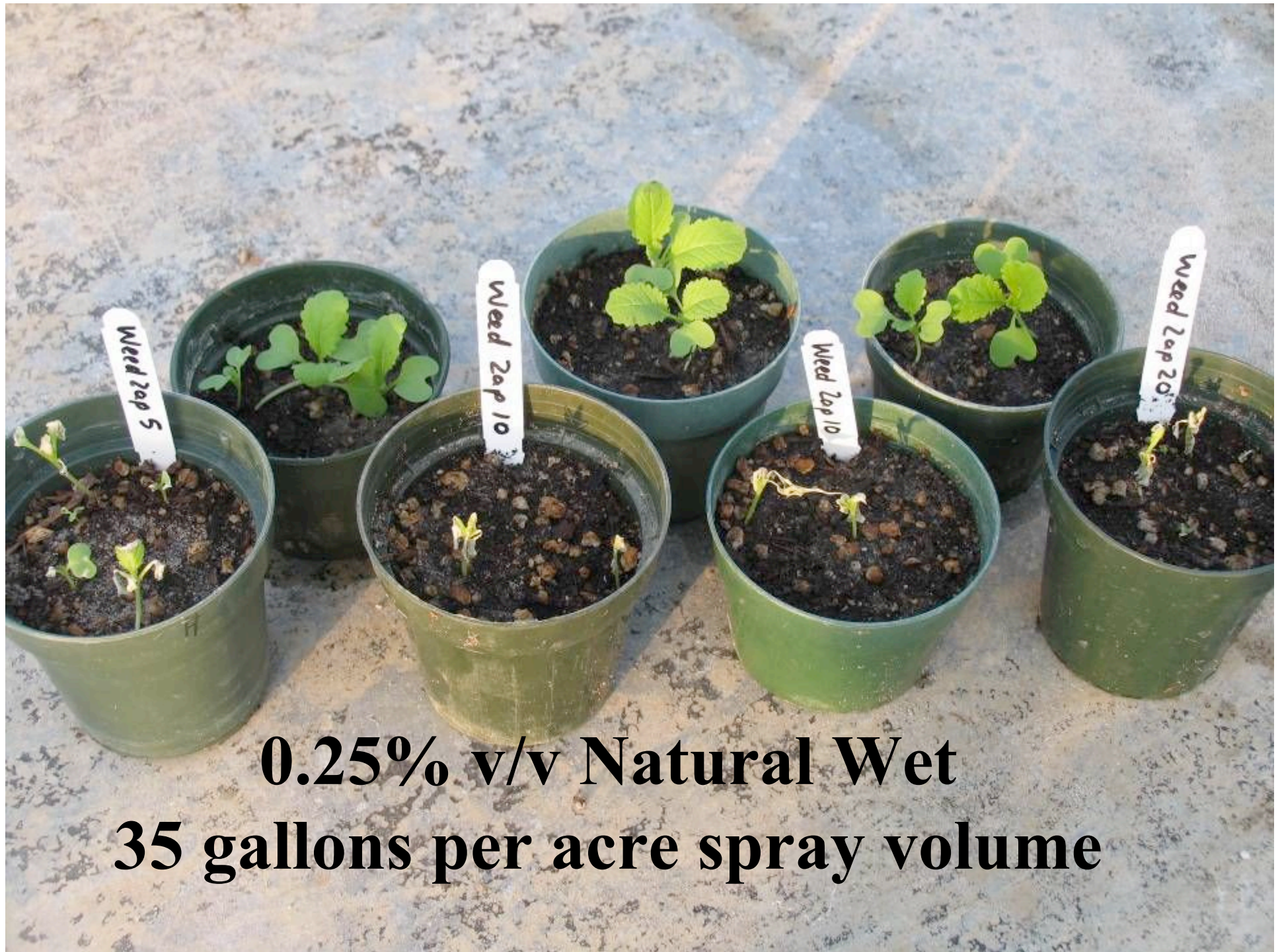
- 1 Pint (0.47 liter)
- 2.5 Gallons (9.45 liters)
- 2 x 2.5 Gallons (18.9 liters)
- 5 Gallons (18.9 liters)
- 55 Gallons (207.9 liters)

Weight per Gallon: 8.4 lbs.

## JH Biotech, Inc.

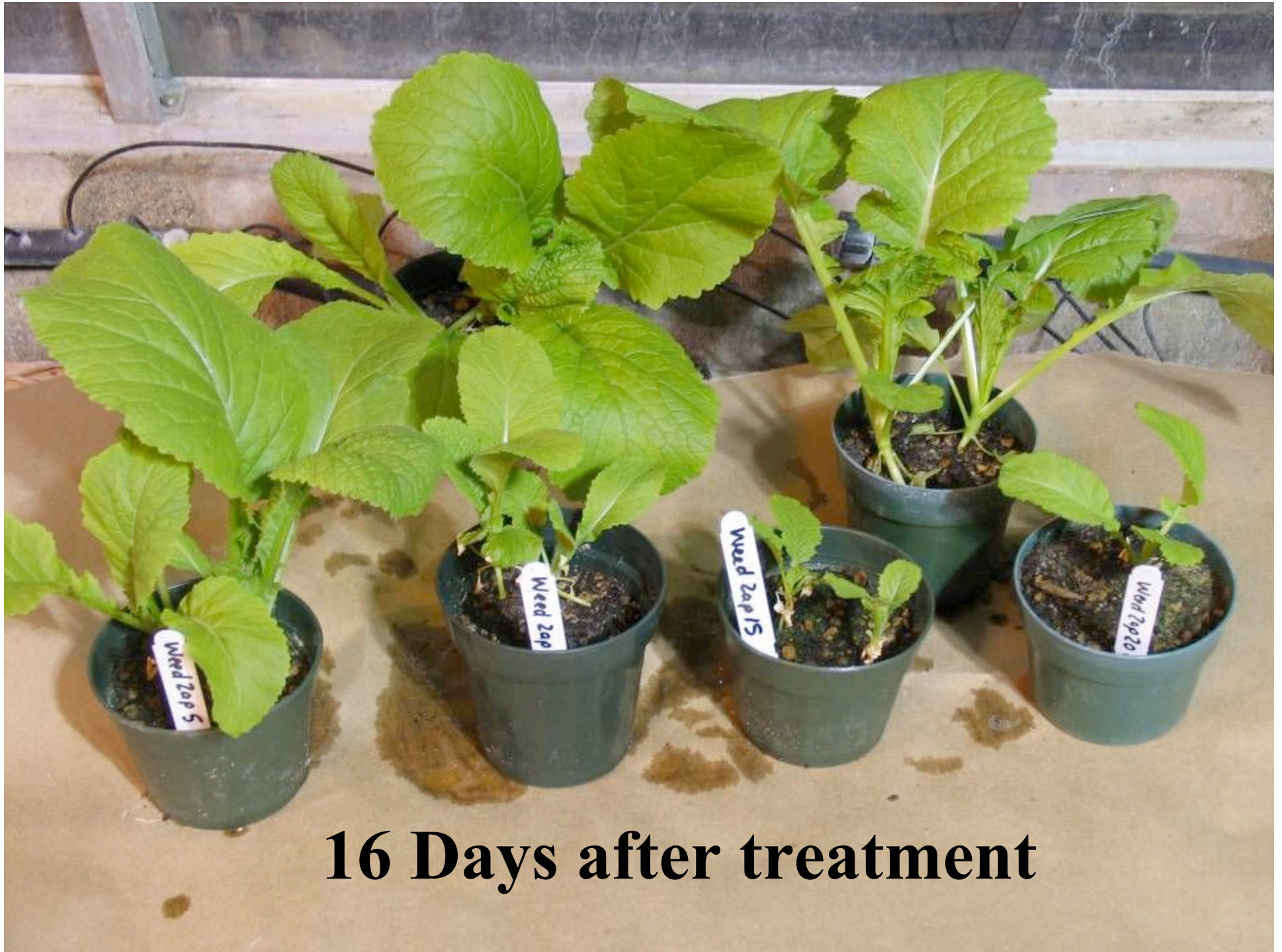
0216-D-A-1





**0.25% v/v Natural Wet  
35 gallons per acre spray volume**





**16 Days after treatment**

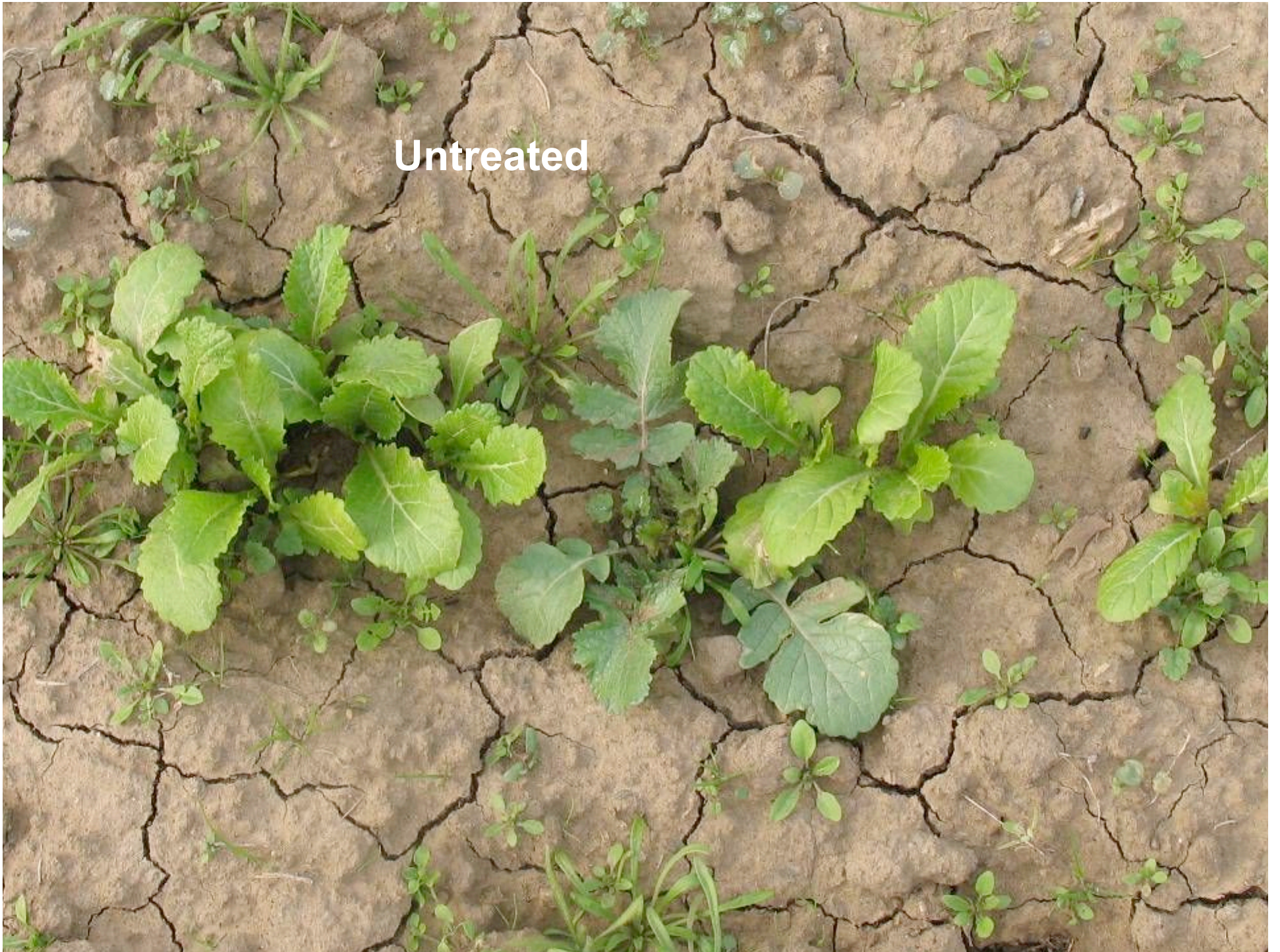




**Weed Zap 5%**  
**35 gallon per acre**  
**2 DAT**



Untreated







**All the organic herbicides  
are weak on grasses**









# Organic surfactants







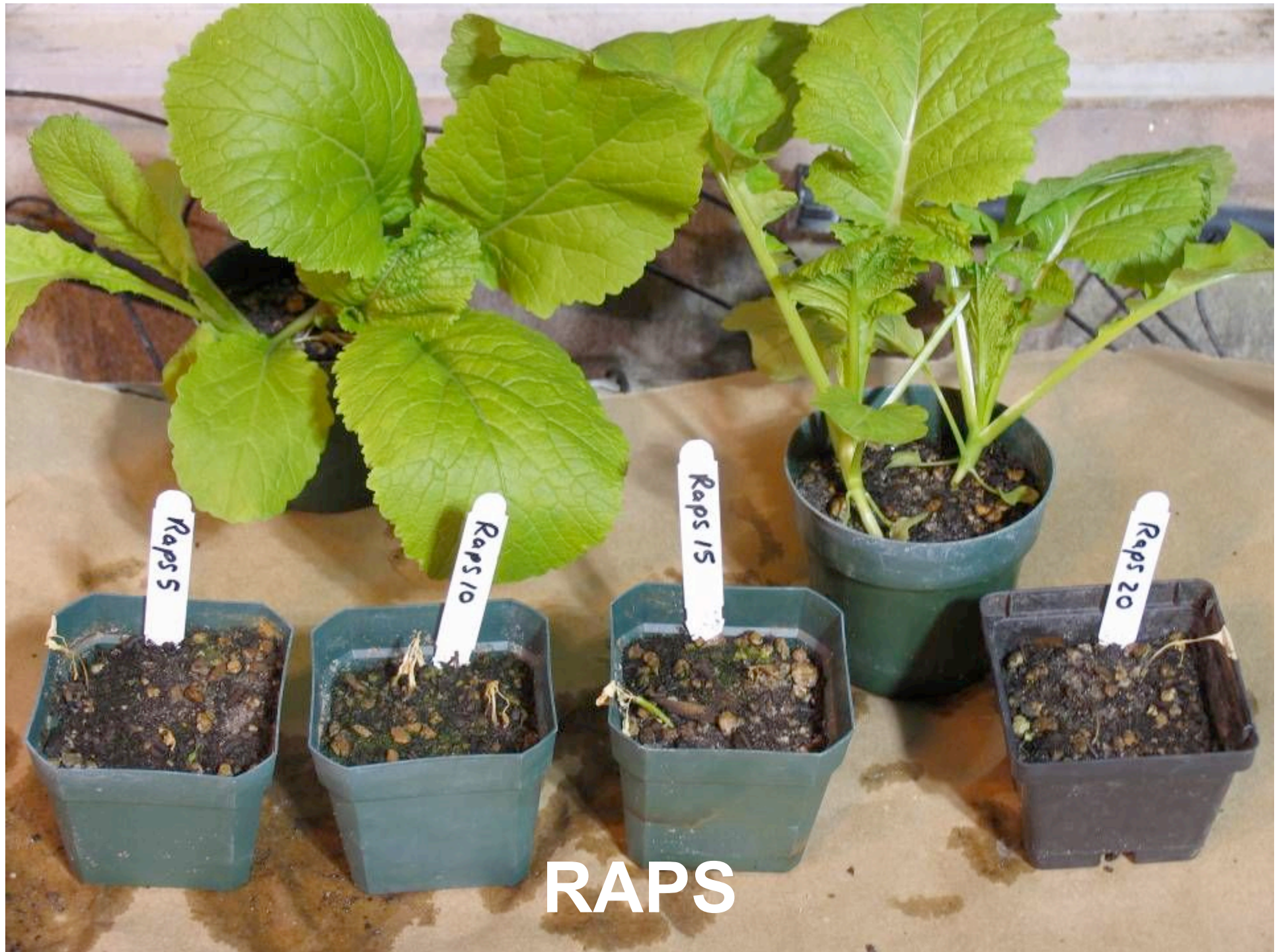






Racer





RAPS





**GreenMatch EX**



# Acetic Acid applied 3 times





# Organic Herbicides

- Good spray coverage is essential
- Organic surfactants improve weed control
- Treat when weeds are small
- Repeat applications ??
- Don't throw away the hoe





The Chemical Company

# PROWL H<sub>2</sub>O

herbicide

## FOR USE IN SELECTED CROPS

### ACTIVE INGREDIENT:

pendimethalin (N-(1-ethylpropyl)-3,4-dimethyl-2,6-dinitrobenzenamine) ..... 38.7%

INERT INGREDIENTS ..... 61.3%

TOTAL ..... 100.0%

(1 gallon contains 3.8 pounds of pendimethalin formulated as an aqueous capsule suspension)

EPA Reg. No. 241-418

EPA Est. No. 241-MO-01

**KEEP OUT OF REACH  
OF CHILDREN.  
CAUTION!**

## FIRST AID

**If swallowed:** Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting, unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

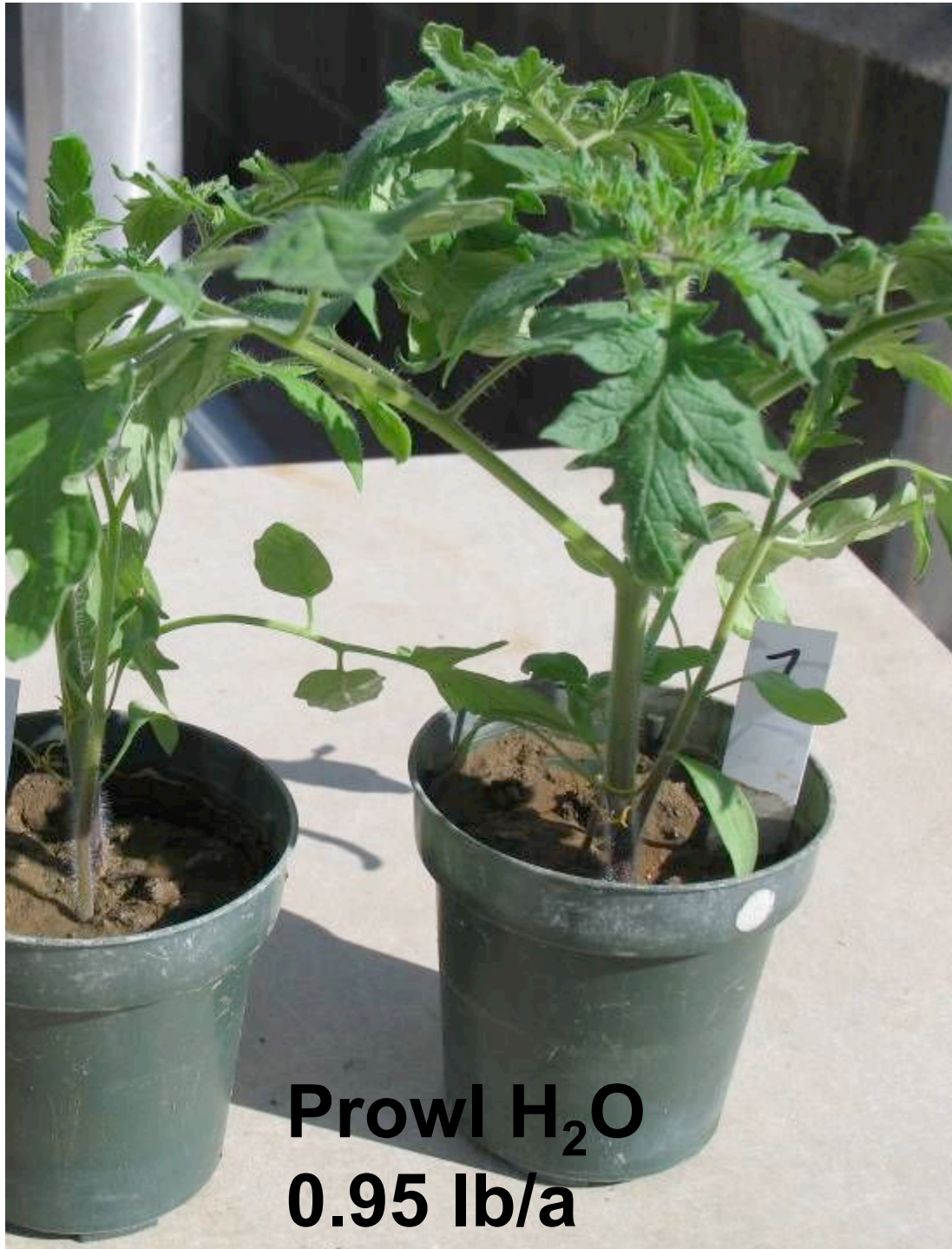
**If in eyes:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing. Call a poison control center or doctor for treatment advice.

**If on skin:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

## STORAGE AND DISPOSAL

**DO NOT** contaminate water, food, or feed by storage or disposal.





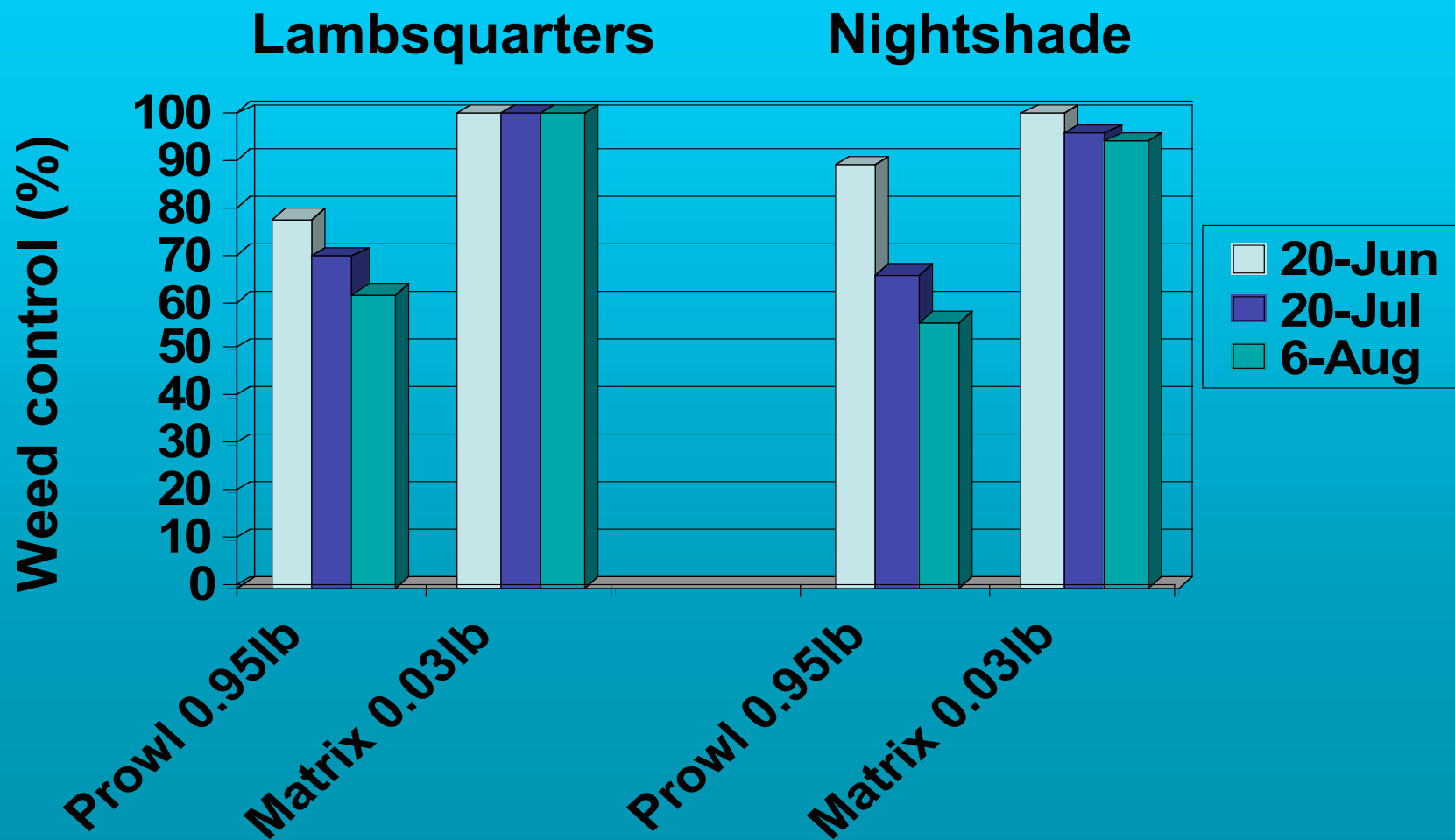
**Prowl H<sub>2</sub>O**  
**0.95 lb/a**



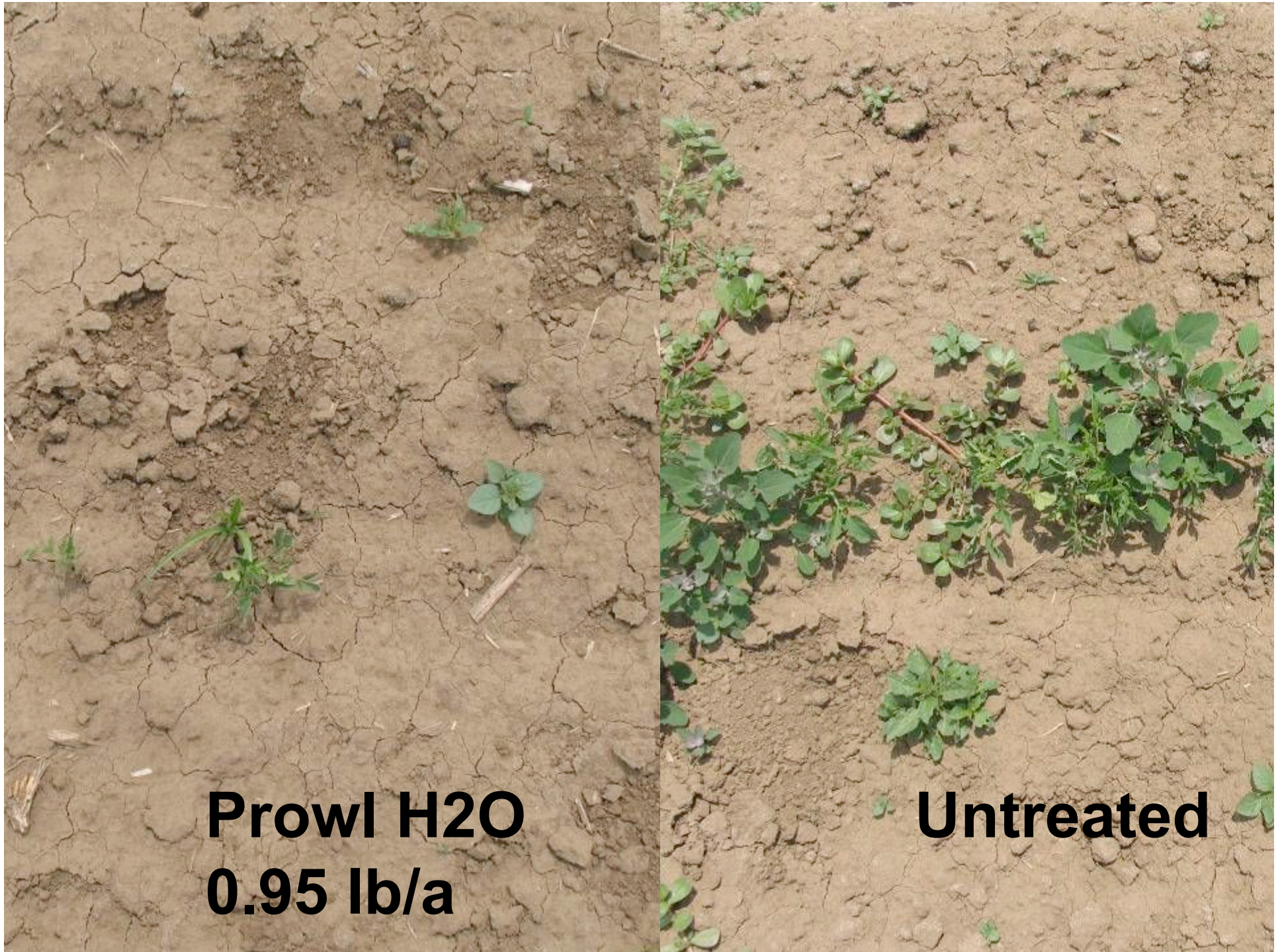
**Untreated**



# Weed Control in Tomatoes - 2007





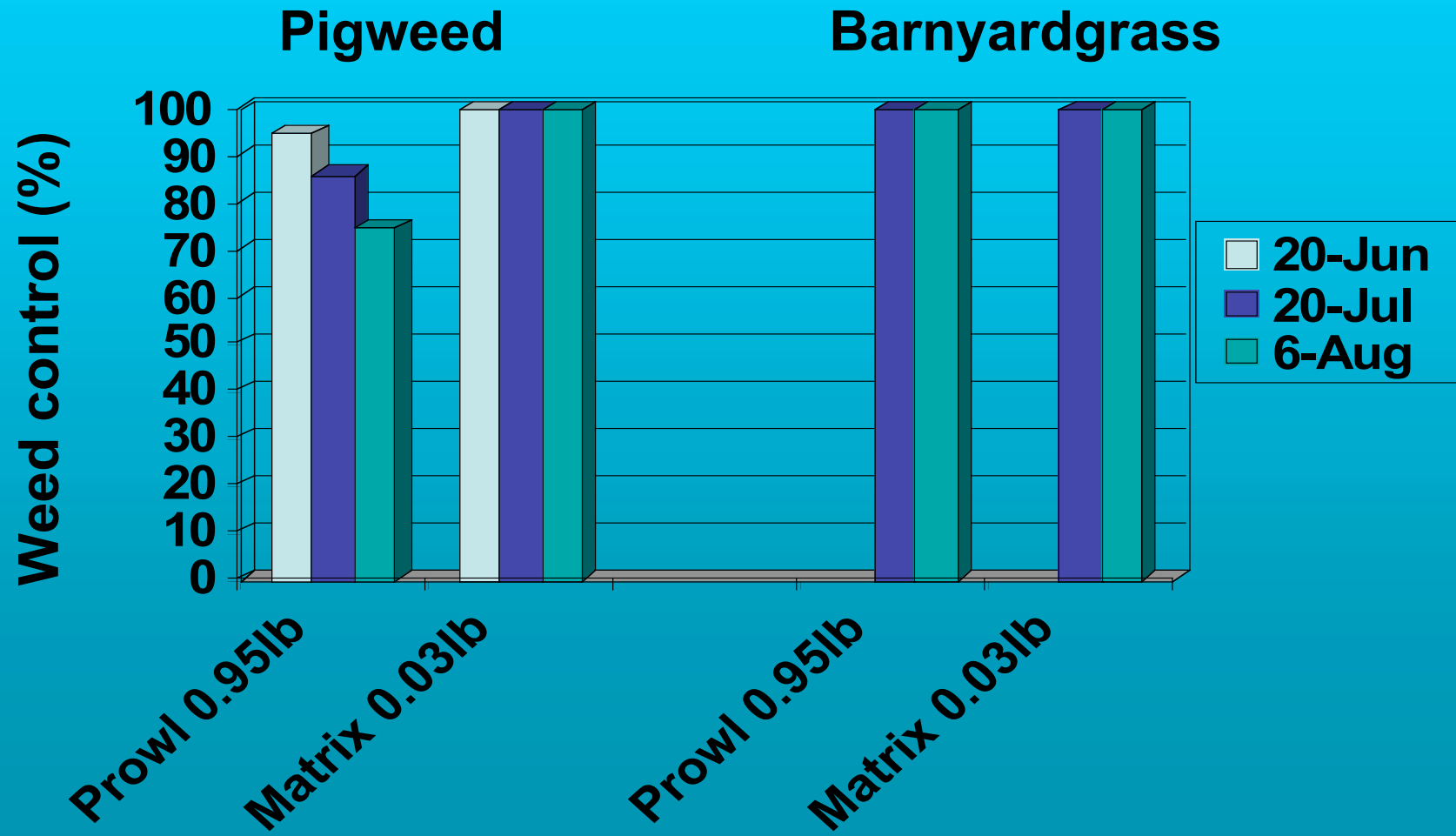


**Prowl H2O  
0.95 lb/a**

**Untreated**



# Weed Control in Tomatoes - 2007





# Prowl H<sub>2</sub>O

- Some injury observed to direct seeded tomatoes, but safe on transplants
- Suppresses dodder emergence, but no control once dodder attached to tomato
- Good control of grasses and purslane, and fair control of other weeds



End