CHEMICAL WEED CONTROL IN TEXAS IRRIGATED VEGETABLES • 1964
Chemical Weed Control in Texas for Irrigated Vegetables — 1964

**CALIBRATION OF HERBICIDE SPRAYER**

Sprayer calibration is required for successful weed control. Improper application of herbicide may reduce weed control or injure crops. Determine sprayer output for every spraying operation and check periodically for nozzle orifice wear and other factors affecting performance.

Steps to determine per-acre output of power sprayer:

1. Fill the tank with water to a predetermined level.
2. Drive in a straight line for 660 feet, operating the sprayer at the same pressure and tractor speed planned for field use. Mark the tractor throttle and gear settings. (A tractor traveler slows in a soft field than on hard ground.) Use tank pressure of 25 to 45 p.s.i.
3. Stop spraying at the 660-foot mark and measure the gallons of water needed for tank refill.
4. Measure the width of actual area sprayed. For hand application this equals the sum of the widths of all the bands.
5. Calculate as follows:
   \[ \text{gallons used} \times \frac{660}{\text{width of sprayed area in ft.}} = \text{gallons per acre} \]

**Example:** If 7 gallons x 660 ft. = 33 gallons per acre

- **In some instances, only narrow bands may be sprayed over the rows, leaving the furrows untreated. When this is done, the application rate is in terms of the area treated and not in terms of per-acre of actual crop.**

- **Example:** In a vegetable crop with 40-inch row spacing, if a 10-inch band is treated at the 6 pounds per acre rate (based on the area actually treated) the amount of chemical per acre of vegetable would be
  \[ 14 \text{ pounds} = \left( \frac{2}{3} \times 6 = 1 \frac{1}{2} \right) \]

Changes in tractor speed, pressure setting, nozzle size or band width affect the application rate and require recalibration.

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**THE LABEL**

Recommendations in this leaflet comply with state and federal laws regarding herbicide use. If carefully followed, they should control weeds satisfactorily and not leave residues exceeding the tolerances established for any particular herbicide.

Apply herbicides according to directions on the manufacturer’s label as registered under the Federal Insecticide, Fungicide, and Rodenticide Act, as to the crop, amount and times specified. The grower is responsible for residues on his own crop and for problems caused by drift from his field to other crops or properties. Many herbicides are poisonous; note the precautions on the manufacturer’s label.

**HERBICIDE RESIDUES IN THE SOIL**

Herbicide residues may injure certain crops planted too soon after the application of dactal or diuron. Read the label for information on tolerant and susceptible crops.

**DEFINITION OF TERMS**

Active ingredient—The container label states the amount of active ingredient in the commercial material either as percent by weight or as percent active portion.

- **Example:**
  1. If 4 pounds active ingredient is recommended per acre if an 80% wettable powder is used, 5 pounds of the commercial material is needed.
  \[ \frac{4}{80} = \frac{5}{10} \]

- **Example:** If 6 pounds active ingredient is recommended per acre if a 4-pound per gallon liquid is used, 15 gallons of the commercial material is needed.
  \[ \frac{6}{4} = \frac{15}{5} \]

Annual—A plant that completes its life cycle from seed in 1 year.

Band application—An application to a continuous restricted area, such as in or along a crop row, rather than over the entire field area.

Broadcast application—An application over an entire area.

Herbicide—A chemical used for killing or inhibiting the growth of plants.

Preemergence—Before emergence of specified weed or crop, generally just after seeding.

Postemergence—After emergence of specified weed or crop.

Soil application—Application of herbicide to the soil surface rather than to vegetation.

**RECOMMENDED HERBICIDE TREATMENTS**

Determine varietal, cultural and soil relations in each locality by small-trial use before going to commercial use.

Apply preemergence herbicides after seeding but before the germination irrigation. Follow preemergence treatments promptly with overhead or furrow irrigation to activate the herbicide and to decrease evaporation losses. Do not flood seedbeds with furrow irrigation.

Certain sections of this publication are taken from the Suggested Guide for Chemical Control of Weeds. ARS Agriculture Handbook 22-67, Special Report, USDA. For additional information, see the manufacturer’s literature, contact your county agricultural agent or read Extension Service publication MP-708, Field Crop Spray Equipment.
## RECOMMENDED HERBICIDE TREATMENTS

Use the lower rate with overhead irrigation or on light soils.
Use 30 to 40 gallons of water per acre unless otherwise stated.

<table>
<thead>
<tr>
<th>Crop</th>
<th>Herbicide</th>
<th>Rate/acre sprayed (active ingredient)</th>
<th>Time of application</th>
<th>Weeds controlled</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cantaloupe, Cucumber</td>
<td>CDEC (Vegedex)</td>
<td>2 to 6 lb.</td>
<td>Preemergence</td>
<td>Annuals</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NPA (Alanap-3)</td>
<td>2 to 6 lb.</td>
<td>Preemergence</td>
<td>Annuals</td>
<td></td>
</tr>
<tr>
<td>Cabbage, Cauliflower, Broccoli</td>
<td>CDEC (Vegedex)</td>
<td>2 to 6 lb.</td>
<td>Preemergence</td>
<td>Annuals</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dacthal</td>
<td>2 to 6 lb.</td>
<td>Preemergence</td>
<td>Annuals</td>
<td></td>
</tr>
<tr>
<td>Carrots</td>
<td>Stoddard solvent</td>
<td>40 to 100 gal. (No dilution with water)</td>
<td>Preemergence</td>
<td>Annuals</td>
<td>Apply to weeds 1 to 3 inches tall, best applied at night or when air movement is downward and relative humidity is high. Will not control ragweed.</td>
</tr>
<tr>
<td>Parsley</td>
<td></td>
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<tr>
<td>Greens (spinach, mustard greens, turnip greens)</td>
<td>CDEC (Vegedex)</td>
<td>2 to 6 lb.</td>
<td>Preemergence</td>
<td>Annuals</td>
<td></td>
</tr>
<tr>
<td>Lettuce</td>
<td>CDEC (Vegedex)</td>
<td>2 to 6 lb.</td>
<td>Preemergence</td>
<td>Annuals</td>
<td></td>
</tr>
<tr>
<td>Onions</td>
<td>Stoddard solvent</td>
<td>40 to 80 gal. undiluted</td>
<td>Preemergence</td>
<td>Annuals</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sulfuric acid</td>
<td>3 to 5% solution in 100 gal. water²</td>
<td>Preemergence</td>
<td>Annuals</td>
<td>Apply to small weeds. CAUTION — Extremely corrosive to metal and will burn the skin.</td>
</tr>
<tr>
<td></td>
<td>Dacthal</td>
<td>6 to 8 lb.</td>
<td>Preemergence</td>
<td>Annuals</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sulfuric acid</td>
<td>2 to 3% solution in 100 gal. water</td>
<td>Postemergence, when first true leaf of onion is at least 2 inches long (loop stage).</td>
<td>Young annuals</td>
<td>Apply to small weeds.</td>
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<tr>
<td></td>
<td></td>
<td>3 to 4% solution in 100 gal. water</td>
<td>Postemergence, when onions are in 5-leaf stage and after last cultivation when onions are laid by and are bulbing.</td>
<td>Young annuals</td>
<td>Apply to small weeds.</td>
</tr>
</tbody>
</table>

³Suggestion is based on fewer experiments than other treatments and therefore should be grower-tested on smaller acreage.

²Volume basis.
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