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AT URBANA-CHAMPAIGN
AGRICULTURE
Herbicide Guide 1980
FOR COMMERCIAL VEGETABLE GROWERS

Restricted-use herbicides are identified with an asterisk (*).

You must be certified as a pesticide applicator to use restricted-use pesticides.

See your county Extension adviser in agriculture for information.

Weed growth reduces the income of vegetable growers in the United States by millions of dollars annually as a result of lower yields, poorer quality, and added labor in harvesting and processing.

This guide should be used together with the grower's knowledge of soil types and the crop and weed history of the area to be treated. Whether to use herbicides or other means of weed control depends in part on the severity of past weed infestations. In many instances mechanical control is sufficient, or it may be needed in addition to herbicide use. Several herbicides may be suggested for some crops. These herbicides have shown good control with no injury to the vegetables under test conditions. Not all herbicides cleared for use on a species are necessarily listed. Where the choice of more than one herbicide is suggested, the decision rests with the grower and is based on his knowledge of past weed infestations, crop rotations, and material costs. Where one herbicide will not control the weeds present, a combination of herbicides may be suggested. When using a herbicide for the first time, use a small-scale trial.

These suggestions for chemical weed control in vegetables are based on research at the Illinois Agricultural Experiment Station, the U.S. Department of Agriculture, and other research institutions. The University of Illinois and its agents assume no responsibility for results from the use of these herbicides, whether or not they were used in accordance with suggestions, recommendations, or directions of the manufacturer or any governmental agency.

Reading the label of the herbicide container is the most profitable time you spend in weed control. Use of the material and methods of application and use depend on registration of the herbicide by federal and state Environmental Protection Agencies (EPA). Do not use any herbicide unless the label states that it is cleared for the use on the crop to be treated.

Herbicides are being classified for general use or restricted use by the U.S. Environmental Protection Agency. A person wishing to use a herbicide classified for restricted use must be certified as a private or commercial pesticide applicator by the Illinois Department of Agriculture. Contact your county Extension adviser in agriculture for details about this program.

Only a few herbicides have been classified at this time. More will be classified later.

Where mixtures of chemicals are applied, the user will assume the responsibility for freedom from residues if such applications are not labeled by the EPA as a mixture.

Suggestions sometimes change during the growing season, based on EPA clearances that were made after this circular was issued. This publication, printed once a year, is subject to change without notification.

Watch for notice of changes in the EPA registration of herbicides (as released by the EPA) in the Illinois Vegetable Farmer's Letter. A subscription form for this University of Illinois newsletter is available from the Agricultural Newsletter Service, 116 Mumford Hall, Urbana, Illinois 61801.

Note: In the suggestions given on the following pages, the trade names of the herbicides are usually used. The list below shows trade names and their corresponding common names.

<table>
<thead>
<tr>
<th>Common name</th>
<th>Trade name</th>
<th>Common name</th>
<th>Trade name</th>
<th>Common name</th>
<th>Trade name</th>
</tr>
</thead>
<tbody>
<tr>
<td>alachlor</td>
<td>Lasso</td>
<td>dalapon</td>
<td>Basiflora</td>
<td>naptalam</td>
<td>Alanap</td>
</tr>
<tr>
<td>atrazine</td>
<td>Atrex and others</td>
<td>dinitramine</td>
<td>Daethal</td>
<td>nitrofen</td>
<td>TOK</td>
</tr>
<tr>
<td>benfotaiyl</td>
<td>Balan</td>
<td>dinoseb</td>
<td>Premerge-J</td>
<td>paraquat*</td>
<td>Paraquat*</td>
</tr>
<tr>
<td>bensulide</td>
<td>Prefar</td>
<td>diphenamid</td>
<td>Dynid, Enide</td>
<td>phenmedipham</td>
<td>Betanal</td>
</tr>
<tr>
<td>bentazon</td>
<td>Basagran</td>
<td>diuron</td>
<td>Karmex</td>
<td>profuran</td>
<td>Tolban</td>
</tr>
<tr>
<td>butylate</td>
<td>Sultan+</td>
<td>EPTC</td>
<td>Eptam, Bradicane</td>
<td>pronamide</td>
<td>Kerb</td>
</tr>
<tr>
<td>CDAA</td>
<td>Randox</td>
<td>glyphosate</td>
<td>Roundup</td>
<td>propachlor</td>
<td>Bexton, Ramrod</td>
</tr>
<tr>
<td>chlorbromuron</td>
<td>Aminex, Vegiben 2E</td>
<td>linuron</td>
<td>Lorox</td>
<td>pyrazon</td>
<td>Pyramin</td>
</tr>
<tr>
<td>chlorpropham</td>
<td>Furloe</td>
<td>metribuzin</td>
<td>Lexone, Sencor</td>
<td>simazine</td>
<td>Princep</td>
</tr>
<tr>
<td>cyanazine</td>
<td>Bladex</td>
<td>napropamide</td>
<td>Devrinol</td>
<td>trifluralin</td>
<td>Treflan</td>
</tr>
<tr>
<td>cycloate</td>
<td>Ro-Neet</td>
<td></td>
<td></td>
<td>Petroleum solvent</td>
<td>Stoddard Solvent</td>
</tr>
</tbody>
</table>

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Prepared by H. J. Hopen, Department of Horticulture (revised annually)

CIRCULAR 907 (October, 1979)
### SUGGESTIONS FOR 1980 ONLY

<table>
<thead>
<tr>
<th>Crop</th>
<th>Treatment</th>
<th>Active ingredient per acre actually covered</th>
<th>Weeds controlled</th>
<th>Timing of application (based on crop stage)</th>
<th>Remarks, cautions, limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asparagus (seedlings)</td>
<td>Amiben</td>
<td>2-3 lb.</td>
<td>Annuals</td>
<td>Immediately after seeding</td>
<td>Irrigation or rainfall after treatment will give maximum control.</td>
</tr>
<tr>
<td>Asparagus (established plantings)</td>
<td>dalapon</td>
<td>5-10 lb.</td>
<td>Perennial grass</td>
<td>End of harvest season following disking</td>
<td>Apply when grass weeds are 3 to 4 inches tall. Direct spray under fern growth. Use surfactant as directed on label.</td>
</tr>
<tr>
<td></td>
<td>Karmex</td>
<td>1-4 lb.</td>
<td>Annuals</td>
<td>In spring and/or after harvest</td>
<td>Apply after disking. Do not exceed 6 pounds per growing season. Use a lighter rate on sandy soil. With Karmex and Princep, a spring application may be sufficient after the first year.</td>
</tr>
<tr>
<td></td>
<td>Princep</td>
<td>3-4 lb.</td>
<td>Annuals</td>
<td>In spring and/or after harvest</td>
<td>Apply after disking. Do not treat during the last year in asparagus because of residue.</td>
</tr>
<tr>
<td></td>
<td>metribuxin</td>
<td>1-2 lb.</td>
<td>Primarily broadleaf weeds</td>
<td>Early spring before the spears emerge</td>
<td>Apply after disking. Do not apply within 14 days of harvest. Can help control broadleaf weeds when used with dalapon, Karmex, or Princep.</td>
</tr>
</tbody>
</table>

### Perennial weed control, applications during and outside the growing season (see page 6)
Stale seeded, before crop emergence (see page 5)

<table>
<thead>
<tr>
<th>Crop</th>
<th>Treatment</th>
<th>Active ingredient per acre actually covered</th>
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<th>Remarks, cautions, limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beans, dry, lima, and snap</td>
<td>Treflan</td>
<td>0.5-0.75 lb.</td>
<td>Annuals</td>
<td>Preplant soil application, incorporate with soil immediately</td>
<td>Plant crop immediately, or within 3 weeks after application. Can be used up to 1 pound per acre on dry beans.</td>
</tr>
<tr>
<td></td>
<td>Tolban</td>
<td>0.5-1 lb.</td>
<td>(primarily grasses)</td>
<td>Preplant soil incorporation</td>
<td>Do not use on light, sandy soil. Some stand reduction may result from use. See label for precautions.</td>
</tr>
<tr>
<td></td>
<td>Premerge-3</td>
<td>6-7.5 lb.</td>
<td>Annuals</td>
<td>Can be used between planting and crop emergence</td>
<td>Can provide good, broad-spectrum control when combined with a grass-active herbicide. Do not mix with other pesticides. See Basagran entry under corn, postemergence for Canada thistle and nutgrass control.</td>
</tr>
<tr>
<td></td>
<td>Basagran</td>
<td>0.75-1 lb.</td>
<td>Annual broadleaf weeds, Canada thistle, natsedge</td>
<td>When weeds are small and are actively growing; after the first trifoliolate leaf appears on beans</td>
<td></td>
</tr>
</tbody>
</table>

### Perennial grass control, applications outside the growing season (see page 5)

<table>
<thead>
<tr>
<th>Crop</th>
<th>Treatment</th>
<th>Active ingredient per acre actually covered</th>
<th>Weeds controlled</th>
<th>Timing of application (based on crop stage)</th>
<th>Remarks, cautions, limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beans, lima and dry</td>
<td>Amiben</td>
<td>2-3 lb.</td>
<td>Broad spectrum of annual weeds</td>
<td>Immediately after seeding, or preplant-incorporated for lima beans</td>
<td>Field may be rotary-hoed without destroying herbicide action.</td>
</tr>
<tr>
<td>Beans, snap</td>
<td>Eptam</td>
<td>3 lb.</td>
<td>Annuals and nutgrass</td>
<td>Preplant soil application, incorporate with soil immediately</td>
<td>Do not feed treated plant parts to livestock.</td>
</tr>
<tr>
<td></td>
<td>Dacthal</td>
<td>6-10 lb.</td>
<td>(primarily grasses)</td>
<td>Immediately after seeding</td>
<td>Use on loam soil.</td>
</tr>
<tr>
<td></td>
<td>Vegiben 2E</td>
<td>1.5-3 lb.</td>
<td>Broad spectrum of annual weeds</td>
<td>Immediately after seeding</td>
<td></td>
</tr>
</tbody>
</table>

### Beets, garden

<table>
<thead>
<tr>
<th>Crop</th>
<th>Treatment</th>
<th>Active ingredient per acre actually covered</th>
<th>Weeds controlled</th>
<th>Timing of application (based on crop stage)</th>
<th>Remarks, cautions, limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pyramin</td>
<td>4 lb.</td>
<td>Annuals</td>
<td>Preemergence or after beets emerge and before weeds have two true leaves</td>
<td>Rainfall or irrigation needed to activate. Where grasses are a severe problem, use 4 pounds of Pyramin plus 4 pounds of Ro-Neet.</td>
</tr>
<tr>
<td></td>
<td>Ro-Neet</td>
<td>4 lb.</td>
<td>Annual grasses</td>
<td>Preplant soil application, incorporate with soil immediately</td>
<td>Use a combination treatment with Pyramin to broaden control spectrum. Beets in the cotyledonary stage may be severely injured. For best results, spray when the weeds are between the cotyledonary and 2-true-leaf stage. Best results will be obtained when the weeds are actively growing and are not under water or heat stress. Do not apply later than 50 days before harvest. May injure beets under heat, water, or other environmental stress.</td>
</tr>
<tr>
<td></td>
<td>Betanal</td>
<td>1-1.5 lb.</td>
<td>Broad spectrum of annual weeds</td>
<td>After the beets are past the 2-true-leaf stage</td>
<td></td>
</tr>
</tbody>
</table>

### Broccoli

#### Brussels sprouts

<table>
<thead>
<tr>
<th>Crop</th>
<th>Treatment</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Preemergence — direct-seeded or transplanted</td>
<td>0.5-0.75 lb.</td>
<td>Annuals</td>
<td>Preplant soil application, incorporate with soil immediately</td>
<td>Stunting or growth reduction may occur at recommended rates under growth stress conditions. Can be used up to 1 pound per acre on transplants.</td>
</tr>
<tr>
<td></td>
<td>Treflan</td>
<td>(primarily grasses)</td>
<td>(primarily grasses)</td>
<td>Immediately after seeding. Can also be incorporated preplant</td>
<td>Use wettable-powder formulation to reduce injury potential. Use in combination with preplant or preemergence material for annual grass control.</td>
</tr>
<tr>
<td></td>
<td>Daetral</td>
<td>6-10 lb.</td>
<td>Annuals</td>
<td>One to two weeks after crop emergence or transplanting, while weeds are not emerged</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Postemergence — direct-seeded or transplanted</td>
<td>3-6 lb.</td>
<td>Broadleaved weeds</td>
<td>Use in combination with preplant or preemergence material for annual grass control.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TOK³</td>
<td>(primarily grasses)</td>
<td>(primarily grasses)</td>
<td>Use wettable-powder formulation to reduce injury potential. Use in combination with preplant or preemergence material for annual grass control.</td>
<td></td>
</tr>
</tbody>
</table>

### Carrots

<table>
<thead>
<tr>
<th>Crop</th>
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<th>Remarks, cautions, limitations</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Preemergence</td>
<td>0.5-1 lb.</td>
<td>Annuals</td>
<td>Preplant soil application, incorporate with soil immediately</td>
<td>Seed after application to 3 weeks later.</td>
</tr>
<tr>
<td></td>
<td>Treflan</td>
<td>(primarily grasses)</td>
<td>(primarily grasses)</td>
<td>Immediately after seeding</td>
<td>Do not feed treated foliage to livestock or replant treated area for 4 months. More than one application may be made, but do not exceed a total of 2 pounds per acre. Do not use over 40 PSI. Use no surfactants when temperatures exceed 80°F, or crop injury may result.</td>
</tr>
<tr>
<td></td>
<td>Postemergence</td>
<td>0.75-1.5 lb.</td>
<td>Annuals</td>
<td>Postemergence on carrots only after the crop is 3 inches tall; grasses, less than 2 inches; broadleaves, less than 6 inches</td>
<td>Can also be used on celery and parsley. Use in combination with preplant or preemergence material for annual grass control.</td>
</tr>
<tr>
<td></td>
<td>Lorox</td>
<td>(primarily grasses)</td>
<td>(primarily grasses)</td>
<td>While weeds are in the seedling stage</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TOK</td>
<td>Broadleaved weeds</td>
<td>While weeds are in the seedling stage</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Continued on the next page.*

(See footnotes on page 6.)
### SUGGESTIONS FOR 1980 ONLY

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<tr>
<th>Crop</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Carrots (cont.)</td>
<td>Stoddard Solvent 60-80 gal.</td>
<td>Annuals</td>
<td>After two true leaves have appeared (do not apply to carrots or parsnips after they are 2 inches in diameter, since an oily taste may result)</td>
<td>Most effective when sprayed on cloudy days or during high humidity, and when weeds are not more than 2 inches high. May not control ragweed. Do not apply within 40 days of harvest. Can be used on celery, dill, parsnips, and parsley.</td>
</tr>
<tr>
<td>Corn, pop</td>
<td>Preemergence atrazine Bladex (See sweet corn)</td>
<td>(See sweet corn)</td>
<td>Preemergence only</td>
<td>See sweet corn, except the section on preemergence combinations. Some pop corn varieties are sensitive to the application rate. (See remarks on Bladex under sweet corn.) Plant only crops so specified on the label the following year. Do not graze treated areas. See sweet corn.</td>
</tr>
<tr>
<td></td>
<td>Princep</td>
<td>2-3 lb.</td>
<td>Annuals</td>
<td>Preemergence</td>
</tr>
<tr>
<td></td>
<td>Eradicane</td>
<td>4-6 lb.</td>
<td>Difficult-to-control weeds</td>
<td>Preplant soil application, incorporate with soil</td>
</tr>
<tr>
<td></td>
<td>Sutan +</td>
<td>3-4 lb.</td>
<td>Primarily annual grasses</td>
<td>Preplant soil application, incorporate with soil</td>
</tr>
<tr>
<td></td>
<td>Postemergence</td>
<td>2-4-D</td>
<td>Broadleaved weeds</td>
<td>Postemergence</td>
</tr>
<tr>
<td></td>
<td>Perennial grass control, applications outside the growing season (see page 5)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corn, sweet</td>
<td>Preemergence atrazine</td>
<td>2-3 lb.</td>
<td>Annuals, annual and perennial grasses</td>
<td>Preemergence, apply no later than 3 weeks after seeding. Shallow cultivation may improve weed control during dry weather.</td>
</tr>
<tr>
<td></td>
<td>Bladex (See remarks)</td>
<td>Annuals</td>
<td>Preemergence only</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Eradicane</td>
<td>4-6 lb.</td>
<td>Difficult-to-control weeds</td>
<td>Preplant soil application, incorporate with soil</td>
</tr>
<tr>
<td></td>
<td>Lasso</td>
<td>2-2.5 lb.</td>
<td>Annuals</td>
<td>Preemergence</td>
</tr>
<tr>
<td></td>
<td>propachlor</td>
<td>4-5 lb.</td>
<td>Annuals</td>
<td>Preemergence</td>
</tr>
<tr>
<td></td>
<td>Sutan +</td>
<td>3-4 lb.</td>
<td>Primarily annual grasses</td>
<td>Preplant soil application, incorporate with soil</td>
</tr>
<tr>
<td></td>
<td>Preemergence combinations atrazine</td>
<td>1.5 lb.</td>
<td>Annuals and perennial grasses</td>
<td>Preemergence or preplant incorporated</td>
</tr>
<tr>
<td></td>
<td>plus Lasso</td>
<td>+2 lb.</td>
<td>Annuals and perennial grasses</td>
<td>Preemergence</td>
</tr>
<tr>
<td></td>
<td>atrazine</td>
<td>1.5 lb.</td>
<td>Annuals and perennial grasses</td>
<td>Preplant soil application, incorporate with soil immediately</td>
</tr>
<tr>
<td></td>
<td>plus propachlor</td>
<td>+3 lb.</td>
<td>Annuals and perennial grasses</td>
<td>Preplant soil application, incorporate with soil immediately</td>
</tr>
<tr>
<td></td>
<td>plus Sutan +</td>
<td>1 lb.</td>
<td>Annuals and perennial grasses</td>
<td>Preplant soil application, incorporate with soil immediately</td>
</tr>
<tr>
<td></td>
<td>Postemergence 2-4-D (amine)</td>
<td>2 lb.</td>
<td>Annuals, annual and perennial grasses</td>
<td>Direct spray 3 weeks after emergence</td>
</tr>
<tr>
<td></td>
<td>Basagran</td>
<td>0.75-1 lb.</td>
<td>Broadleaved annual weeds, Canada thistle, and nutt_</td>
<td>Early postemergence when the weeds are small and actively growing. Delay will result in less control.</td>
</tr>
<tr>
<td></td>
<td>Perennial grass control, applications outside the growing season (see page 5)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cucumbers</td>
<td>Alanap</td>
<td>3.5 lb.</td>
<td>Annuals</td>
<td>Immediately after seeding or transplanting</td>
</tr>
<tr>
<td></td>
<td>Muskmelons Watermelons</td>
<td>3.5 lb.</td>
<td>Annuals</td>
<td>After transplanting or vining</td>
</tr>
<tr>
<td></td>
<td>Prepar</td>
<td>4-6 lb.</td>
<td>Annuals (primarily grasses)</td>
<td>Preplant soil application, incorporate with soil immediately</td>
</tr>
<tr>
<td></td>
<td>Prefar plus Alanap</td>
<td>4 lb.</td>
<td>Grasses and broadleaved weeds</td>
<td>Preplant soil application for Prefar; Alanap, as an immediate postemergence application Immediately after seeding</td>
</tr>
<tr>
<td></td>
<td>Vegiben 2E (2E form only)</td>
<td>1.5-3 lb.</td>
<td>Broad spectrum of annual weeds</td>
<td>Immediate after seeding</td>
</tr>
</tbody>
</table>

As an alternative to herbicides where earliness is desired, black polyethylene mulch will control annual weeds, conserve moisture, and increase early spring soil temperatures. (See footnotes on page 6.)
<table>
<thead>
<tr>
<th>Crop</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Eggplant</td>
<td>Dacthal 6-10 lb.</td>
<td>Annuals* (primarily grasses)</td>
<td>After plants are established, 4-6 weeks after transplanting</td>
<td>Cultivate and weed prior to application. Can be applied to plants as part of a uniform soil application.</td>
</tr>
<tr>
<td>Greens</td>
<td>Dacthal 6-10 lb.</td>
<td>Annuals* (primarily grasses)</td>
<td>Immediately after seeding</td>
<td>For use on collards, kale, mustard greens, and turnips.</td>
</tr>
<tr>
<td></td>
<td>Treflan 0.5-0.75 lb.</td>
<td>Annuals* (primarily grasses)</td>
<td>Preplant soil application, incorporate with soil immediately</td>
<td>For use on collards, kale, mustard greens, and turnip greens.</td>
</tr>
<tr>
<td>Horseradish</td>
<td>Dacthal 6-10 lb.</td>
<td>Broadleaved weeds*</td>
<td>Immediately after transplanting</td>
<td>For spinach only. Use lower rates in cool, wet weather.</td>
</tr>
<tr>
<td></td>
<td>TOK* 3-6 lb.</td>
<td>Broadleaved weeds*</td>
<td>Before weeds are 1 inch high</td>
<td>Use for annual grass control and combine with TOK as an early postemergence treatment for broadleaved weeds. Will not consistently control weeds over 1 inch tall. Some emerging annual grass may be controlled by this treatment. Lower rate will control seedling purslane.</td>
</tr>
<tr>
<td>Lettuce</td>
<td>Balan 1.5 lb.</td>
<td>Annuals* (primarily grasses)</td>
<td>Preplant soil incorporation incorporate with soil immediately</td>
<td>Is primarily a grasskiller. Seed after application to 3 weeks later. Do not plant wheat, barley, rye, grass, onions, oats, beets, or spinach for 12 months after application. Do not use when the air temperature exceeds 85°F. Use the lower rates listed on sandy soil. Do not use on peat or muck soils. See label for rotation crops. For best results, rainfall or irrigation is needed 1 to 2 days after application, especially during warm weather.</td>
</tr>
<tr>
<td></td>
<td>Kerb 1-2 lb.</td>
<td>Annuals* (primarily grasses)</td>
<td>Preemergence or preplant-incorporated</td>
<td></td>
</tr>
<tr>
<td>Onions</td>
<td>Preemergence Dacthal 6-10 lb.</td>
<td>Annuals* (primarily grasses)</td>
<td>Immediately after seeding or transplanting</td>
<td>May not kill smartweed or common ragweed. Can be used on seeds, sets, or seedlings. Use only on mineral soils. Use lower rates on sandy soils. A double application of Dacthal can be used at seeding, layby, or both. In most situations, the weed spectrum on mineral soils will respond well to a combination of Dacthal preemergence and TOK postemergence. Use on muck soils. Heavy rainfall may reduce stand. Very effective on purslane and pigweed.</td>
</tr>
<tr>
<td></td>
<td>Randox 4-6 lb.</td>
<td>Annuals* (primarily grasses)</td>
<td>Just before onions emerge</td>
<td>Use a single application of E.C. or W.P. per growing season. Do not apply E.C. until onions are in the two- to three-leaf stage. Preemergence use of TOK with heavy rainfall may reduce stand. Use in combination with preplant or preemergence material for annual grass control. In the later sprays, direct at base of onion plant. If more than one application is applied do not exceed 6 pounds per acre for the season. Use lower rates in cool, wet weather. Use no later than 30 days before harvest.</td>
</tr>
<tr>
<td>Peas</td>
<td>Preemergence propachlor 4-4.9 lb.</td>
<td>Annuals* (primarily grasses)</td>
<td>Preemergence</td>
<td>Do not use on sandy soil. Seed after application to 3 weeks later. Some reduction of growth and stand reduction possible under stress. May suppress some root rot.</td>
</tr>
<tr>
<td></td>
<td>Treflan 0.5-0.75 lb.</td>
<td>Annuals* (primarily grasses)</td>
<td>Preplant soil incorporation incorporate with soil immediately</td>
<td>Preemergence use 6 to 9 pounds; postemergence, use 0.3 pound to 1.1 pounds. Apply prior to bloom when peas are 2 to 8 inches tall. See label for further precautions. Preemergence use may help suppress root rot.</td>
</tr>
<tr>
<td></td>
<td>Cobex 0.3-0.5 lb.</td>
<td>Annuals* (primarily grasses)</td>
<td>Preplant soil incorporation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Preemergence or Postemergence Premerge-3 0.3-9 lb.</td>
<td>Annuals* (primarily broad-leaved weeds)</td>
<td>Preemergence or postemergence</td>
<td>Can help control Canada thistle. Can provide good, broad-spectrum control when used with a grass-active herbicide. Do not mix with other pesticides. See Basagran entry under corn, postemergence for Canada thistle and nutgrass control. May delay maturity 1 to 4 days. Use at least 20 gallons of water per acre. Do not feed vines to livestock. MCPPA is more effective on mustard. MCPPB is less injurious to peas.</td>
</tr>
<tr>
<td></td>
<td>Postemergence Basagran 0.75-1 lb.</td>
<td>Annual broadleaf weeds, Canada thistle, nutsedge</td>
<td>When weeds are small and are actively growing; after peas have 3 pairs of leaves (or 4 nodes)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MCPB 1 lb. Broadleaved weeds and Canada thistle</td>
<td>When peas are 3-7 inches tall and no later than 4 nodes prior to pea bloom</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MCPA 0.25-0.5 lb. Broadleaved weeds and Canada thistle</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perennial grass control, applications outside the growing season (see page 5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potatoes, Irish</td>
<td>Eptam 3-6 lb. Annual grasses and nutgrass*</td>
<td></td>
<td>Drag-off treatment at emergence or preplant soil application Incorporate with soil immediately</td>
<td>Use lower rate on sandy soil.</td>
</tr>
<tr>
<td></td>
<td>Treflan 0.5-1 lb. Annuals* (primarily grasses)</td>
<td></td>
<td>Drag-off treatment at emergence</td>
<td>Use a light incorporation.</td>
</tr>
</tbody>
</table>

(See footnotes on page 6.)
**SUGGESTIONS FOR 1980 ONLY**

<table>
<thead>
<tr>
<th>Crop, Irish (cont.)</th>
<th>Treatment</th>
<th>Active ingredient per acre</th>
<th>Weeds controlled</th>
<th>Timing of application (based on crop stage)</th>
<th>Remarks, cautions, limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potatoes, Irish</td>
<td>Lorox</td>
<td>0.75-2 lb.</td>
<td>Annuals</td>
<td>Apply prior to potato emergence</td>
<td>Plant tubers at least 2 inches deep. Do not replant treated area to other crops for 4 months after treatment. May injure crop on light, sandy soil. Do not apply over exposed tubers.</td>
</tr>
<tr>
<td></td>
<td>chlorbromuron</td>
<td>2-3 lb.</td>
<td>Annuals</td>
<td>At very start of potato emergence</td>
<td>May injure crop on light, sandy soil. Do not harvest immature potatoes. Do not plant crops other than field corn, potatoes, or soybeans for 6 months after applying.</td>
</tr>
<tr>
<td></td>
<td>dalapon</td>
<td>7 lb.</td>
<td>Quackgrass</td>
<td>Before plowing in spring; wait 4 days after plowing and planting</td>
<td>Not for fields intended for red-skinned varieties or White Rose. Do not plant potatoes for 4 weeks. Use surfactant as directed on label.</td>
</tr>
<tr>
<td></td>
<td>metribuzin</td>
<td>0.25-0.5 lb.</td>
<td>Annuals (primarily broadleaved)</td>
<td>Postemergence, following a preemergence grass herbicide</td>
<td>Can be used preemergence also. Do not exceed 1 pound per acre in a season. Do not apply within 60 days of harvest. Do not use on red-skinned or early maturing white varieties. Do not apply in cool, wet weather.</td>
</tr>
<tr>
<td></td>
<td>Lasso</td>
<td>2.5-3 lb.</td>
<td>Annuals</td>
<td>Apply at drag-off</td>
<td>Do not use on sandy soils. Can be used alone or in combination with Lorox or dinoseb.</td>
</tr>
</tbody>
</table>

**Potatoes, sweet**

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Active ingredient per acre</th>
<th>Weeds controlled</th>
<th>Timing of application (based on crop stage)</th>
<th>Remarks, cautions, limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dachhal</td>
<td>6-10 lb.</td>
<td>Annuals (primarily grasses)</td>
<td>Immediately after planting</td>
<td>Do not plant nonapproved crops on treated soil during the same season.</td>
</tr>
<tr>
<td>Amiben</td>
<td>3 lb.</td>
<td>Annuals</td>
<td>Immediately after planting</td>
<td>Use on loam soils. Amiben can be applied broadcast or banded over the row in pumpkins.</td>
</tr>
<tr>
<td>Dymid, Enide</td>
<td>4-6 lb.</td>
<td>Annuals</td>
<td>Immediately after transplanting</td>
<td>Is primarily a grasskiller. Consult label for sensitive crops within 18 months after application. Prefar can be used in rotation only with tomatoes, broccoli, cauliflower, lettuce, carrots, onions, and summer squash within 18 months of application. Use in combination with Alapin as suggested for cucumbers.</td>
</tr>
</tbody>
</table>

**Squash, Pumpkins**

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Active ingredient per acre</th>
<th>Weeds controlled</th>
<th>Timing of application (based on crop stage)</th>
<th>Remarks, cautions, limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amiben</td>
<td>3-4 lb.</td>
<td>Annuals</td>
<td>As soon after seeding as possible, or preplant-incorporated</td>
<td>Do not plant when growing. Amiben can be applied broadcast or band into the row in pumpkins.</td>
</tr>
</tbody>
</table>

**Squash**

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Active ingredient per acre</th>
<th>Weeds controlled</th>
<th>Timing of application (based on crop stage)</th>
<th>Remarks, cautions, limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prefar</td>
<td>4-6 lb.</td>
<td>Annuals (primarily grasses)</td>
<td>Preplant soil application, incorporate with soil immediately</td>
<td>Do not plant other food crops on treated areas for 6 months. If used under dry soil conditions, a shallow (1 inch) incorporation as a preplant treatment may improve weed control. Can also be used on transplanted peppers.</td>
</tr>
</tbody>
</table>

**Tomatoes, direct-seeded and transplanted**

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Active ingredient per acre</th>
<th>Weeds controlled</th>
<th>Timing of application (based on crop stage)</th>
<th>Remarks, cautions, limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dymid, Enide</td>
<td>4-6 lb.</td>
<td>Annuals</td>
<td>Preemergence</td>
<td>Do not plant other food crops on treated areas for 6 months. If used under dry soil conditions, a shallow (1 inch) incorporation as a preplant treatment may improve weed control. Can also be used on transplanted peppers.</td>
</tr>
<tr>
<td>Devrinol metribuzin</td>
<td>1-2 lb. (min.-max.)</td>
<td>Annuals (primarily broadleaf)</td>
<td>Preplant soil incorporated; Post-emergence, can be broadcast or directed.</td>
<td>Can also be used on direct-seeded and transplanted peppers. Apply with ground equipment to seed and transplanted tomatoes. Do not use air-blast or other high-pressure spray equipment. Do not use on peppers.</td>
</tr>
<tr>
<td></td>
<td>0.25-1 lb.</td>
<td>Annuals</td>
<td>Preplant incorporated; Post-emergence, can be broadcast or directed.</td>
<td>Alone or in a tank-mix combination with Treflan.</td>
</tr>
<tr>
<td></td>
<td>0.25-0.5 lb.</td>
<td>Annuals</td>
<td>Preplant incorporated, transplant tomatoes</td>
<td>Single or multiple applications. Minimum of 14 days between treatments. Direct-seeded plants should have 5 or 6 leaves; transplants should show new growth. Recommended for use in fields with severe weed problems, or for fields with hard-to-control weeds. Do not apply within 7 days of harvest. Do not apply within 3 days following periods of cool, wet, or cloudy weather; otherwise, crop injury may occur. Do not apply to established tomatoes within 24 hours after the application of other pesticides. Do not tank-mix with other pesticides, except Treflan. Do not apply more than 1 pound per acre per crop season, or more than 1 pound per acre within a 35-day period. Allow at least 14 days between applications, regardless of the dosage or method used. Do not use hot caps on tomatoes within 7 days before application, or at any time afterward.</td>
</tr>
<tr>
<td></td>
<td>0.5-1 lb.</td>
<td>Annuals</td>
<td>Directly spray, established tomatoes</td>
<td>Use granular formulation only. Apply to dry foliage in order to avoid leaf burn. Do not use on sandy soils. Some reduction of growth may be possible under growth stress conditions, or if rates are higher than suggested for the soil type.</td>
</tr>
</tbody>
</table>

**Tomatoes and Peppers, transplanted**

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Active ingredient per acre</th>
<th>Weeds controlled</th>
<th>Timing of application (based on crop stage)</th>
<th>Remarks, cautions, limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amiben</td>
<td>3-4 lb.</td>
<td>Annuals</td>
<td>Wait 3 days after transplanting to apply Preplant soil application, incorporate with soil immediately</td>
<td>Use granular formulation only. Apply to dry foliage in order to avoid leaf burn. Do not use on sandy soils. Some reduction of growth may be possible under growth stress conditions, or if rates are higher than suggested for the soil type.</td>
</tr>
<tr>
<td>Treflan</td>
<td>0.5-1 lb.</td>
<td>Annuals (primarily grasses)</td>
<td>Before crop emergence; allow maximum weed emergence prior to treatment</td>
<td>Weeds that emerge after treatment will not be controlled. Crop plants that have emerged at application will be injured. Do not apply within 18 months of harvest.</td>
</tr>
</tbody>
</table>

**Stale seedbed, before crop emergence**

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Active ingredient per acre</th>
<th>Weeds controlled</th>
<th>Timing of application (based on crop stage)</th>
<th>Remarks, cautions, limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paraoquat</td>
<td>0.5-1 lb.</td>
<td>All emerged green foliage</td>
<td>Before crop emergence; allow maximum weed emergence prior to treatment</td>
<td>Weeds that emerge after treatment will not be controlled. Crop plants that have emerged at application will be injured. Do not apply within 18 months of harvest.</td>
</tr>
</tbody>
</table>

**Perennial grass control, applications outside the growing season**

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Active ingredient per acre</th>
<th>Weeds controlled</th>
<th>Timing of application (based on crop stage)</th>
<th>Remarks, cautions, limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roundup</td>
<td>2-3 lb.</td>
<td>(See remarks)</td>
<td>(See remarks)</td>
<td>Use for quickgrass or Johnsongrass control. Apply to quickgrass when 6 to 8 inches tall in fall or spring. Apply to Johnsongrass when at least 12 inches tall and actively growing. Do not till until 3 to 7 days after application. Does not provide residual weed control. Do not mix, store, or apply Roundup spray solutions in galvanized steel or unlined steel containers (except stainless steel) or spray tanks.</td>
</tr>
</tbody>
</table>
Weeds
Treatment

tall
grass,
Before
2-5
Disposing
(See
least"

Timing
employment.

explode
herbicides.

hazards,
vent
Rinse
SVSS
using
Asparagus
1
contain
Crop

Do
Illinois
—
Operators
in
Surplus
Keep

when
not
and
open
rivers,
Alanap

—

the
—

Departments
of
—a
•

burned.
•

not
control
smartweed,
•

May
not
control
ragweed,

smartweed,

and
velvetleaf.

Use
50% wettable
powder
is
suggested
for
cabbage
and
horseradish.

May
not
control
ragweed
or
chickweed.

Grass
control
sometimes
marginal,

May
not
control
crabgrass.

Do
not
use
Alanap
Plus,
Solo,
Whistle,
or
Amoco
Soybean
Herbicide.
These
materials
all
contain
Alanap
plus
another
ingredient
that
may
cause
injury.

May
not
control
smartweed
and
velvetleaf.

Storing Pesticides and Containers

Keep
pesticides
and
containers
in
a
separate
building,
room,
or
enclosure
used
only
for
this
purpose.
Such
buildings
or
rooms
should
be
dry,
ventilated,
and
locked.
Fence
outside
storage
areas
to
protect
children
and
animals
and
to
discourage
pillage.
CAU-
TION:
Do
not
store
weedkillers,
herbicides,
or
defoliants
in
the
same
room
with
insecticides.
Chlorate
salts
can
create
a
fire
or
explosion
hazard.
Remove
only
the
pesticides
needed
for
one
day’s
operation
and
return
empty
containers
—and
any
unused
pesticide
—to
the
storage
area
each
day.

Disposing of Pesticides and Containers

Surplus
Pesticides.
To
dispose
of
surplus
pesticide
mixtures,
try
to
find
other
areas
with
the
same
pest
problem
and
use
up
any
extra
tank
mix
or
rinse
water
on
these
areas.
Do
not
drain
surplus
pesticides
in
any
location
where
they
can
contaminate
wells,
streams,
rivers,
lakes,
or
ponds.

Operators
of
landfills
meeting
environmental
safety
standards
may
obtain
supplemental
permits
for
the
storage
of
pesticides.

Contact
the
Illinois
EPA
Division
of
Land
Pollution
Control
to
determine
the
nearest
landfill
with
a
supplemental
permit.

Pesticide
Containers.
All
empty
pesticide
containers,
regardless
of
their
type,
should
be
rinse
by
the
first
time
before
disposal.
Rinse
water
should
be
dumped
in
the
tank.
Triple-rinsed
containers
should
be
punctured
or
broken
and
then
facilitate
drainage
in
landfills.

Irrigation
permits
the
burning
of
combustible
containers
provided
that
they
are
burned
on
the
premises
where
they
were
used.
That
is
burned
one
feet
from
residential
areas,
that
the
burning
will
not
cause
undue
vibrations
or
environmental
hazards,
and
that
no
reasonable
alternate
disposal
method
is
available.

Do
not
burn
pesticide
containers,
and
do
not
burn
containers
with
weedkillers
such
as
2,4-D
or
similar
herbicides.
When
these
change
to
a
gas,
the
vapors
may
damage
nearby
plants
and
shrubbery.
Pesticide
containers
containing
chlorates
may
explode
when
heated
and,
therefore,
should
not
be
burned.

Other Publications on Weed Control

Copies
of
the
following
publications
are
available
from
the
Office
of
your
county
Agricultural
Publications,
123
Mumford
Hall,
Urbana,
Illinois
61801.

Prevent
2,4-D
Injury
to
Crops
and
Ornamental
Plants
—
Circular
990
Legal
Aspects
of
Crop
Spraying
—
Circular
1008
Calibrating
and
Adjusting
Granular
Row
Applicators
—
Circular
1038
Calibrating
and
Maintaining
Spray
Equipment
—
Circular
1051
Controlling
Weeds
in
the
Home
Garden
—
Circular
1076
Turfgrass
Pest
Control
—
Circular
H-659
Herbicides
for
Commercial
Fruit
Crops
in
Illinois
—
1980
Field
Crops
Weed
Control
Guide

Issued
in
furtherance
of
Cooperative
Extension
Work,
Acts
of
May
8
and
June
30,
1914,
In
cooperation
with
the
U.S.
Department
of
Agriculture.
JOHN
B.
CLAAR,
Director,
Cooperative
Extension
Service,
University
of
Illinois
at
Urbana-Champaign.
The
Illinois
Cooperative
Extension
Service
provides
equal
opportunities
in
programs
and
employment.

SM—10.79—45724—RES