any results from having sprayed the day before and left a residue of insecticide upon the foliage. Some value is undoubtedly gained from the residual insecticide which is left upon blossoms which won't open or be cut for several days and once again it becomes a question of economics. Perhaps, screening, despite the discomfort of warmer houses is the most economical and practical procedure.

In conclusion, we would like to emphasize the following:

1) Screening greenhouses with dieldrin-treated cheesecloth does give thrips control which approached 100% effectiveness when both top vents and side vents were screened. The effectiveness can be expected to vary, however, with the severity of thrips infestation and the care with which the screening is erected. Some spraying inside the greenhouse may still be necessary.

2) Screening only the side vents also gives control but to a lesser extent than that achieved with both the top and side vents screened. Economically, it may be practical for some growers to screen only the side vents in connection with a reduced inside spraying schedule. Respraying the cheesecloth with dieldrin, once or twice during the thrips season, while it is in place over the vents would appear to offer the possibility of maintaining or improving control although this has not been checked experimentally.

3) Screened greenhouses are approximately ten degrees warmer than unscreened houses. While this apparently does not effect crop quality it offers less desirable working conditions.

4) The possibility has been presented and will be checked experimentally this coming summer that inside spraying as it has been practiced is partially ineffective and perhaps uneconomical. Screening is offered as an alternative and it has been indicated that each grower must evaluate the advantages and disadvantages for himself and decide wherein the best solution to his thrips problem may be found.

5) Any of the authors will be glad to answer questions concerning procedures and materials for screening and to hear further opinions concerning this subject.

Warning: Carefully follow all precautions printed on the labels of Insecticide containers. Dieldrin is poisonous if swallowed, inhaled or absorbed through the skin. Wash thoroughly with soap and water after handling and before eating or smoking. Wear clean clothing. In case of accidental spillage on person or clothing, immediately remove clothing and flush skin or eyes with plenty of water; for eyes, get medical attention. When treating and applying screening, wear clean synthetic rubber gloves and respirator passed by the U.S. Department of Agriculture for dieldrin.

Experiments carried out the past several years by Bing (1), Carlson (2), Jenkins (3), Holm & Beck (4), and Work (5) have shown that several materials were effective when used as preemergence sprays to control weeds in gladiolus plantings. Also corm yields in many instances were higher from treated plots than from untreated plots. Materials that have shown to be most promising include forms of 2, 4-D, TAT-GW, Dinitro (Premerge, Sinox), Crag #1, Chloro IPC, and CMU.

This year's experiment was to include preemergence treatments with Dinitro, Crag #1, Chloro IPC, Karmex DW (a form of CMU), and N5521 (a relative of Chloro IPC). Cormels of varieties Elizabeth the Queen and Edith Cave Cole were planted 1,000 per plot. The equal numbers in each lot were determined by weighing carefully graded cormels. The cormels were planted 3 inches deep with 1,000 per 4 feet with 2 feet between plots and 3 feet between rows. The cormels were planted May 1 and covered on these plots.

The plots scheduled for dinitro treatment were carried as checks for weed counts and then, after hand weeding, were given a postemergence treatment with granular Chloro IPC.

Weed control on all treated plots was effective but less so from the Crag #1 treatments. Moisture was not a problem as frequent overhead irrigation was used. The Chloro IPC and Karmex DW treatments gave lasting control as can be seen in Table I. The readings of 0-5 were made by two independent observers on July 1. All materials gave a significant decrease in weed population. The Crag #1 plots were weeded and resprayed in mid-July.

The granular Chloro IPC was applied with a Lawn Beauty Spreader July 20. The 2% granular was applied at a rate of 200 lbs. per acre and the 4% was applied at a rate of 100 lbs. per acre, both giving an application of 4 lbs. actual Chloro IPC per acre. This looks promising for postemergence weed control and will be more adequately tested this coming season.

None of the herbicides caused any visual injury to the gladiolus plants. All corms and readily adhering cormels were dug around September 1, washed and then cured at 80 - 90°F for two weeks, cleaned, held at 80°F for a week and the weights of large, medium and small corms and cormels were recorded. Table II shows the effects of treatments on total yield. Higher yields on most treated plots are probably due to reduction of gladiolus plant stand in Check and Crag #1 plots caused by hand weeding--this is one of the best reasons for using chemical weed control. The Chloro
IPC and Karmex DW treatments were very effective against weeds (Table I) and increased yields (Table II).

After several years experimentation by the author and others, several materials have shown up very favorably as preemergence sprays and are shown in order of preference in Table III. Larmie (6) of Rhode Island has shown that Karmex DW at 1/2 lb. per acre is fairly effective as a later herbicidal spray for larger corms. This coming season attention will be shifted to postemergence treatments that may possibly be used to follow the effective preemergence treatments.

References

TABLE I
Control of Weeds

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Weed Growth on July 1 (a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td>Rate per 100 gal./A</td>
</tr>
<tr>
<td>Crag #1</td>
<td>4 lbs.</td>
</tr>
<tr>
<td>Crag #1</td>
<td>6 lbs.</td>
</tr>
<tr>
<td>Chloro IPC</td>
<td>6 lbs.</td>
</tr>
<tr>
<td>Chloro IPC</td>
<td>8 lbs.</td>
</tr>
<tr>
<td>Karmex DW</td>
<td>3/4 lb.</td>
</tr>
<tr>
<td>Karmex DW</td>
<td>1 1/2 lbs.</td>
</tr>
<tr>
<td>N5521</td>
<td>6 lbs.</td>
</tr>
<tr>
<td>Check</td>
<td></td>
</tr>
</tbody>
</table>

(a) 0 - no weeds
1 - very few weeds
2 - few weeds
3 - some weeds
4 - many weeds
5 - very weedy

(b) Postemergence treatment July 20.
(c) 5% level 2.1
1% level 2.69

TABLE II
Effects of Herbicides on Yields of Cormels

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Rate per 100 gal./A</th>
<th>Yield in grams of corms and cormels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Crag #1</td>
<td>4 lbs.</td>
<td>180</td>
</tr>
<tr>
<td>Crag #1</td>
<td>6 lbs.</td>
<td>153</td>
</tr>
<tr>
<td>Chloro IPC</td>
<td>6 lbs.</td>
<td>305</td>
</tr>
<tr>
<td>Chloro IPC</td>
<td>8 lbs.</td>
<td>342</td>
</tr>
<tr>
<td>Karmex DW</td>
<td>3/4 lb.</td>
<td>253</td>
</tr>
<tr>
<td>Karmex DW</td>
<td>1 1/2 lbs.</td>
<td>452</td>
</tr>
<tr>
<td>N5521</td>
<td>6 lbs.</td>
<td>239</td>
</tr>
<tr>
<td>Check</td>
<td></td>
<td>195</td>
</tr>
</tbody>
</table>

(a) Planted May 1. Each lot 1,000 cormels, var. Elizabeth the Queen. Harvested September 1.
(b) Postemergence treatment July 20.
(c) 5% level 20.2
1% level 26.9

Con't on page 4.
Gladiolus--Con't from page 3.

TABLE III
Available Materials Effectively used as Preemergence Herbicides on Gladiolus

<table>
<thead>
<tr>
<th>Code Name</th>
<th>Chemical Name</th>
<th>Rate per Acre in 40-100 gals. of water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chloro IPC</td>
<td>47% Isopropyl N (3-chloro phenyl) carbamate</td>
<td>4-8 quarts</td>
</tr>
<tr>
<td>Dinitro (Premerge) (Sinox P. E.)</td>
<td>53% Alkanolamine salts of dinitro ortho sec butyl phenol</td>
<td>4-6 quarts</td>
</tr>
<tr>
<td>Karmex DW (CMU)</td>
<td>80% 3-(3,4 dichlorophenyl)-1.1 dimethyl urea</td>
<td>3/4-1 1/2 lbs.</td>
</tr>
<tr>
<td>2,4-D</td>
<td>Esters of 2, 4-dichlorophenoxy acetic acid</td>
<td>1-3 lbs.</td>
</tr>
<tr>
<td>Crag #1</td>
<td>90% sodium 2, 4-dichlorophenoxy ethyl sulfate</td>
<td>3-6 lbs.</td>
</tr>
</tbody>
</table>

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**FUNGICIDE FACTS**

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We are so frequently asked what this, that, or the other fungicide is especially good for that a brief resume of the major areas of usefulness of the more common fungicides or fungicide groups might be helpful.

1. **Dimethyl dithiocarbamates**
   A. **Ferbam** (Fermate, Karbam Black, etc.)
      - Good against: most leafspots, true rusts, Rhizoctonia in soil
      - Ineffective against: powdery mildews, bacteria
      - Very safe and still recommended for early season sprays on mums and for crops which commonly show iron deficiencies. Ferbam contains iron which is to some degree available to the plants.
   B. **Ziram** (Zerlate, etc.)
      - Has about the same range of effectiveness as ferbam but does not supply iron and the zinc which it does supply is somewhat harmful to some ornamentals. We do not recommend ziram for ornamentals.

2. **Ethylene bis dithiocarbamates**
   A. **Zineb** (Parzate, Dithane Z-78, Dithane D-14 plus zinc sulfate, Parzate Liquid plus zinc sulfate, etc.)
      - Outstanding against: true rusts
      - Very good against: most leafspots, Botrytis blights, Rhizoctonia in soil
      - Good against: powdery mildews, bacteria
      - Ineffective against: powdery mildews, bacteria
      - Most effective for widest range of disease fungi; slight tendency to injure some plants at high temperatures and with slow drying.

3. **Captan** (Orthocide, Captan Fungicide)
   - Very good against: most leafspots, Pythium in soil
   - Good against: Botrytis blight, Rhizoctonia in soil
   - Poor against: true rusts
   - Ineffective against: powdery mildews, bacteria
   - Good range of effectiveness; safe as foliage spray; some injury in soil to peppers, tomatoes, petunias

4. **Di-nitros** (Karathane, Mildex)
   - Very good against: powdery mildews
   - Ineffective against: everything else
   - Very likely to burn at high temperatures or with slow drying. Is specific for powdery mildew at safe concentrations.

5. **Nitrobenzenes** (PCNB, Terrachlor)
   - Outstanding against: Rhizoctonia in soil
   - Very good against: Sclerotium crown rot
   - Ineffective against: Pythium in soil
   - Effective, persistent, and reasonably safe for checking spread of Rhizoctonia in established benches or pots.

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**IN THIS ISSUE**

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- 1955 Gladiolus Weed Control Experiment
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Your Editor,