HERBICIDE COMBINATIONS FOR WEED CONTROL IN GLADIOLUS

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One of the problems associated with the use of herbicides in gladiolus plantings is that no one herbicide controls all species of weeds. Although Karmex (diuron) can be safely used to control most weeds in gladiolus corms (bulbs), the rates of application that are required (1-1 1/2 lb. active ingredient per acre) are not consistently safe for use on cormels (bulblets). The lower rates that are safe for cormels often do not provide adequate control of annual grasses. Similarly, the herbicides that are effective against annual grasses—Dacthal (DCPA), Treflan (trifluralin) or Planavin (nitralin)—do not control certain common weeds such as ragweed and galinsoga. Therefore, tests were conducted with combinations of low rates of Karmex with annual grass killers for season-long weed control in gladiolus cormels.

Experiments with herbicide combinations were conducted with cormels of the variety Torchy in 1971 and with White Friendship, Pink Romance, and Torchy during 1972. The preplanting sprays of Treflan were incorporated into the upper 2 inches of soil. Karmex, Dacthal and Planavin were sprayed on the soil surface after planting and before weed emergence.

Outstanding herbicide treatments during both years were combinations of Karmex at 1/2 lb. active ingredient per acre plus Dacthal at 10 lb./A, or Planavin at 1 1/2 or 2 lb./A. In 1971 Karmex at

GLADIOLUS CORM TREATMENTS

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Gladiolus are affected by many disease problems. These can be caused by fungi, bacteria or viruses. Disease problems can be reduced by following a few guidelines.

Plant gladiolus corms in soil that is well drained. Poorly drained soils enhance bacterial diseases and Botrytis. If possible, plant in a new, clean area every year. A four to five year rotation should be used. If a soil disease problem develops and the corms cannot be planted in other areas, then a soil treatment may be necessary.

Stromatinia Dry Rot has been a problem to Connecticut growers in the past. This disease appears as small circular lesions on corms ranging in size from pinpoint to 1/2 inch in diameter. They are usually reddish brown in color. In the field, the fungus usually attacks the plant at the soil surface. Small black sclerotia may be found on the stem.

For control, apply Botran 75WP in the furrow at planting to provide 1 1/3 lbs. per 1000 feet of row in sufficient water for distribution. Place the corms over the Botran and cover.

Plant only clean, healthy corms. The severely diseased ones should be discarded. Small lesions caused by bacterial scab can be cut out and the corms treated with a fungicide.
A SUMMER GREENHOUSE CHECKLIST

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While visiting many greenhouses, I find hazards which can be avoided if a little extra planning and care are taken. During the summer when the rush is over, look around your place of work and see where it can be improved. After it is cleaned up, you will be glad you did it. Look for:

Fans not protected inside and out with guards.
Wire connections not made in electrical boxes or grounded properly.
Tools scattered about the greenhouse rusting away and can't be found when needed.
Dangerous pesticides such as insecticides and fungicides left on benches or on the ground.
Flower pots, flats and other debris in walks or under benches that can harbor pests.
Hoses lying in dirty, muddy walks.
Plumbing poorly installed, a hazard to hoof and head.
Automatic watering systems contaminated through lack of care.
Fertilizer injectors not installed with a backflow preventer.
Walks often very slippery. Use copper sulphate, thiram or sand to control algae.
Fire extinguishers lacking.
Sick plants and trash under benches that could perpetuate problems.
Broken glass.
Hanging and blowing plastic which is unsightly and unneighborly.

1/2 lb. /A plus Treflan at 3/4 lb. /A provided excellent weed control without injury, but in 1972 Treflan at 1 1/2 lb. /A injured the cormels that weighed 37 percent less than did the plots that were handweeded every 10 days. In all varieties, the combinations of Karmex plus Dacthal or Planavin produced yields of corms that were greater than the weedy controls. In the varieties Torchy and White Friendship, these combinations produced yields that were greater than or equal to the handweeded controls. Therefore, weeds seriously compete with gladiolus cormels, and herbicides properly applied offer great potential savings in labor to produce a crop.

A second test during 1972 in corms of the variety Torchy showed that the Karmex–Dacthal combination also was effective on emerged seedling weeds. Seedlings of annual broadleafed weeds were killed. Seedlings of all annual grasses were not killed but the root systems of surviving grasses were severely retarded so that they were easily removed by a shallow cultivation or scraping. Although the emerged gladiolus plants from corms were not injured, it is not yet known whether plants from cormels will tolerate a postemergence spray of this combination.

The rates of herbicide application used by growers of gladiolus must be altered somewhat to account for soil texture and organic matter content. These experiments were conducted on a sandy loam soil of low organic matter content. Soils of finer texture or higher in organic matter content usually require higher rates of herbicide for adequate weed control, and coarser textured soils require lower rates to prevent crop injury due to excessive leaching of herbicides to root zones.
Table 1. Effects of herbicides on control of broadleafed three varieties of gladiolus cormels—1972.

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Rate a.i. lb./A</th>
<th>Percentage control of broadleafed weeds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>July 5</td>
<td>Aug 9</td>
</tr>
<tr>
<td>Check—weed free (handweeded until Sept.)</td>
<td>98</td>
<td>98</td>
</tr>
<tr>
<td>Check—weedy (weeded monthly)</td>
<td>18</td>
<td>0</td>
</tr>
<tr>
<td>Karmex (diuron)</td>
<td>1/2</td>
<td>98</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>98</td>
</tr>
<tr>
<td>Dacthal (DCPA)</td>
<td>10</td>
<td>68</td>
</tr>
<tr>
<td>Treflan (trifluralin)</td>
<td>1 1/4</td>
<td>74</td>
</tr>
<tr>
<td>Planavin (nitralin)</td>
<td>2</td>
<td>94</td>
</tr>
<tr>
<td>Karmex+Dacthal</td>
<td>1/2+10</td>
<td>98</td>
</tr>
<tr>
<td>Karmex+Treflan</td>
<td>1/2+1 1/4</td>
<td>99</td>
</tr>
<tr>
<td>Karmex+Planavin</td>
<td>1/2+2</td>
<td>99</td>
</tr>
</tbody>
</table>

Least significant difference between two means

95% probability

Not all problems are from insects or disease. Many are caused by poor culture. Some are:

1. Humidity too high or too low. Flower bud or leaf drop.
2. Plants growing in draft? Leaf and flower bud drop.
3. The soil kept too wet? Sour smell, yellow plant, poor plant form.
4. The plant getting enough light? Note long leggy growth, poor plant habit, flowers and leaves sparse. Too much light will give plant bleached or faded appearance.
5. A sudden change in environment. Leaf and flower drop but new buds showing.

Most hanging basket plants will survive with minimum care providing attention is given to daily watering, if needed, weekly fertilizing and plant grooming. Check with your florist, greenhouse, or garden center when purchasing to see if your plant needs special care. Most of them will be happy to advise you.
An easy method of watering hanging pots is placing several ice cubes in the pot and allowing them to melt. This saves messy spills when pots are hanging above your head.

Many plant growers are now using slow release fertilizers in the soil mixture. The white, glossy, egg-like plastic pellets on the surface are signs that a slow release fertilizer has been used. If these are not visible, a water soluble fertilizer should be applied weekly to most plants.

In order to keep plants blooming, they must be kept neat and pruned judiciously to encourage new growth. This is especially important on fuchsia, impatiens, lantana, petunia and others. Clean up dead flowers, leaves and foliage at least once a week. While doing this, plants can be inspected for mites or other problems.

Insects such as scale, aphids and whitefly can be controlled by using malathion, diazinon, nicotine or pyrethrins as directed by the manufacturer on the label. If mites are a problem, use a miticide such as kethane or malathion. Some may want to wash insects off with warm water and soap. This method works for mealy bugs and scale insects. Slugs can be attracted to beer in a shallow container or a slice of potato. Place in the pot and remove the slugs late at night.

Leaf spots caused by powdery mildew, Botrytis, or other fungi attack plants under certain conditions. Control by removing infected plant part, or apply a fungicide such as zineb, phalan, captan or benomyl as directed on the container label.
In summary, the combinations of lower than standard rates of Karmex with standard rates of Dacthal or Planavin provided season-long weed control and excellent yields in gladiolus cormels. Combinations of Karmex and Dacthal were effective either preemergence or postemergence in plantings of gladiolus corms without reducing yields of cut flowers or corms.

(Here are some ideas to pass on to your customers who purchase hanging baskets.)

KEEPING HANGING BASKETS HEALTHY

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Hanging baskets are now the fashion for the year 1973 since they can be grown in the living area both indoors and out. Many types of plants have been potted and will be purchased by the gardener. This article deals with some pointers to keep plants healthy and producing flowers.

In general, all plants need light to grow. However, the homeowner must choose the right conditions for his plants. Ferns need indirect light, while ivy geraniums and geraniums need full sunlight but can tolerate some shade. The light intensity will vary with the time of year and from indoors to outdoors. If indoors, plants should be turned occasionally to allow light to reach all the foliage.

Watering hanging pots is difficult for most gardeners. Hanging pots have a tendency to dry more rapidly because of greater air movement around the plants. A rule of thumb is to apply enough water at one time so some drains through the holes into the saucer. Do not allow water to remain in the saucer. Good drainage is essential. If the soil remains waterlogged, plants will die due to poor soil aeration.