

New Team prevents your weeds with all-season stamina. It's gentle on cool season turf grass, including bluegrass, ryegrass and other fairway grass species. And new Team pre-emergence herbicide consistently delivers better control, longer control for your crabgrass. It also provides head-to-head goosegrass control.

New Team spreads very easily. The clay carrier makes equipment calibration simpler

and application more accurate. It also reduces dust problems.

Call time-out on crabgrass and goosegrass on your turf, for all season. With new Team.

Talk to your Elanco distributor soon.

Or write:

Elanco Products Company
A Division of Eli Lilly and Company
Dept. E-455, Indianapolis, IN 46285, U.S.A.
Team™—(bifenox + trifluralin, Elanco Products Company)
Refer to the Team label for proper application instructions.



Circle No. 122 on Reader Inquiry Card

Put down new Team™ this spring.



Or put up with crabgrass and goosegrass this summer.



The Wisconsin State Capitol and its lovely grounds are a popular attraction in Madison.

Grounds for Ransomes.



The immaculate appearance of the Capitol grounds in Madison leaves a lasting impression on the many visitors who come to Wisconsin each year. When pride is a factor, the air-cooled T-24N from Ransomes is a sensible choice for keeping government grounds, parks, campuses and industrial complexes looking their very best. And it won't create a budget deficit, either. This strong, durable tractor has what it takes to provide sure, dependable service. And that's grounds for seeing your Ransomes Bob Cat distributor. Or, call Ransomes, Inc., One Bob Cat Lane, Johnson Creek, WI 53038. (414) 699-2000.

RANSOMES

The grass machine.

Circle No. 160 on Reader Inquiry Card

| Herbicide | Brand Name(s) | Company | Uses |
|----------------------|---|---|---|
| MCPP | MCPP Mecomec MCPP Chipco Turf Herbicide | SDS Biotech PBI Gordon WA Cleary Rhone Poulenc | Selective broadleaf weed control in turf. Often combined with other herbicides. |
| MSMA | Ansar Broadside Ansar Weed-Hoe | SDS Biotech Vertac Drexel Vineland | Postemergence selective control of crabgrass and broadleaf weeds in turf. Also, grassy weed control in ditchbanks, roadsides, industrial areas. |
| napropamide | Devrinol | Stauffer | Selective control of weeds in ornamental beds and containers. Experimental combination with Betasan for season-long crabgrass control in turf. |
| oryzalin | Surflan | Elanco | Preemergence control of weeds in established ornamentals and warm-season turf. |
| oxadiazon | Ronstar | Rhone Poulenc | Preemergence control of weeds in ornamentals and turf. |
| oxyfluorfen | Goal | Rohm & Haas | Selective control of weeds in ornamentals. |
| paraquat | Paraquat | Ortho, Chevron | Nonselective control of weeds in rights-of-way, industrial areas and fencerows. |
| pendimethalin | Proturf Weedgrass Control | Scotts | Preemergence turf herbicide for control of grassy and broadleaf weeds. |
| picloram | Tordon | Dow | Systemic, long-term killer of woody plants and broadleaf weeds. |
| prometon | Pramitol | Ciba Geigy | Nonselective herbicide with long residual for industrial weed control. |

| Herbicide | Brand Name(s) | Company | Uses |
|---------------------|---------------|---|---|
| pronamide | Kerb | Rohm & Haas | Poa annua control in warm season grasses. Also weed and grass control around woody ornamentals and Christmas trees. |
| sethoxydim | Poast | BASF | Postemergence control of grassy weeds around broadleaf ornamentals. |
| siduron | Tupersan | DuPont | Preemergence control of annual grasses in newly seeded turf areas. |
| simazine | Princep | Ciba Geigy | Selective control of annual grasses and broadleaf weeds in established bermudagrass. Also, used in industrial and aquatic weed control. |
| sulfometuron | Oust | DuPont | Non-selective industrial and selective in bermudagrass. |
| tebuthiuron | Spike | Elanco | Brush control and total vegetation control in non-crop areas. |
| trifluralin | Treflan | Elanco | Selective preemergence weed control in established ornamentals and under asphalt. |
| trichlopyr | Garlon | Dow | Systemic control of woody plants in rights-of-way and industrial sites. |
| 2, 4-D | 2, 4-D | Dow SDS Biotech Rhone Poulenc Vertac | Selective control of weeds in turf and numerous other areas. Usually mixed with other herbicides. |
| Vorlex | Vorlex | Nor-Am | Preplant fumigant. Broadleaf weed control in established turf. |

| | | | |
|---|---|---|--|
| 2, 4-D plus MCPP | Chipco Turf Kleen Cleary Scotts II SDS Tee Time Lescopar | Rhone Poulenc WA Cleary OM Scott SDS Biotech Andersons Lesco | Broadleaf weed control in established turf. |
| 2, 4-D plus dicamba | Scotts I Banvel Plus Lesco Selective Herbicide | OM Scott Velsicol Lesco | Selective postemergence control of weeds in turf. |
| 2, 4-D plus MCPP plus dicamba | Trimec Trexan | PBI Gordon Mallinckrodt | Selective, broad spectrum control of weeds in turf. |
| 2, 4-D plus MCPP plus dicamba plus MSMA | Quadmec | PBI Gordon | Broad spectrum postemergence control of broadleaf weeds and annual grasses. |
| 2, 4-D plus dichlorprop | Weedone DPC | Union Carbide | Selective postemergence control of weeds in turf. |
| 2, 4-D plus dichlorprop | Weedone DPC Amine | Union Carbide | Broad-spectrum, selective, postemergence control of weeds in turf. |
| 2, 4-D plus 2,4-D plus dicamba | Trimec Ester | Bulkkem | Selective, broad spectrum control of weeds in turf. |
| 2, 4-D plus dicamba plus dalapon | Banvel Plus | Velsicol | Broad spectrum, post- emergence turf weed control. |
| 2, 4-D plus prometon | Vegemec | PBI Gordon | Selective postemergence control of weeds in turf. |
| 2, 4-D plus triclopyr | Turflon-D | Dow Chemical | Selective postemer- gence turf herbicide for broadleaf weeds. |
| Balan plus Ronstar | Regalstar | Regal Chem. | Broad spectrum pre- emergence control of weeds in turf. |
| amitrol plus simazine | Amizine | Union Carbide | Season-long control of weeds and grasses |

Herbicide Combinations

| | | | |
|--|--|-------------------|---|
| MSMA plus cacodylic acid | Broadside | Crystal | Nonselective, broad spectrum weed control. |
| diuron plus sodium chlorate plus sodium metaborate | Chlorea | Rhone Poulenc | Nonselective weed and grass killer. |
| Amitrole plus fenac plus atrazine | Fenamime | Union Carbide | Pre- and postemer- gence control of weeds for industrial sites and rights-of-way |
| benefin plus oryzalin benefin plus trifluralin | XL Team | Elanco | Preemergence control of annual grasses and broadleaf weeds in established turf. |
| bensulide plus oxadiazon | ProTurf Goosegrass/ Crabgrass Control | OM Scott | Broad-spectrum pre- emergence control of annual grasses |
| bromacil plus diuron | Rout Krovar | Hopkins DuPont | Wide range control of weeds in industrial sites and rights-of-way |
| MSMA plus dicamba | Mondak | Velsicol | Noncropland general weed control. |
| prometon, simazine and chlorate | Pramitol | Ciba Geigy | Full-season weed control in industrial sites. |
| tebuthiuron plus trifluralin | Spike Treflan | Elanco | Non-selective, season- long, preemergence and postemergence control of weeds industrial and non-cropland areas. |

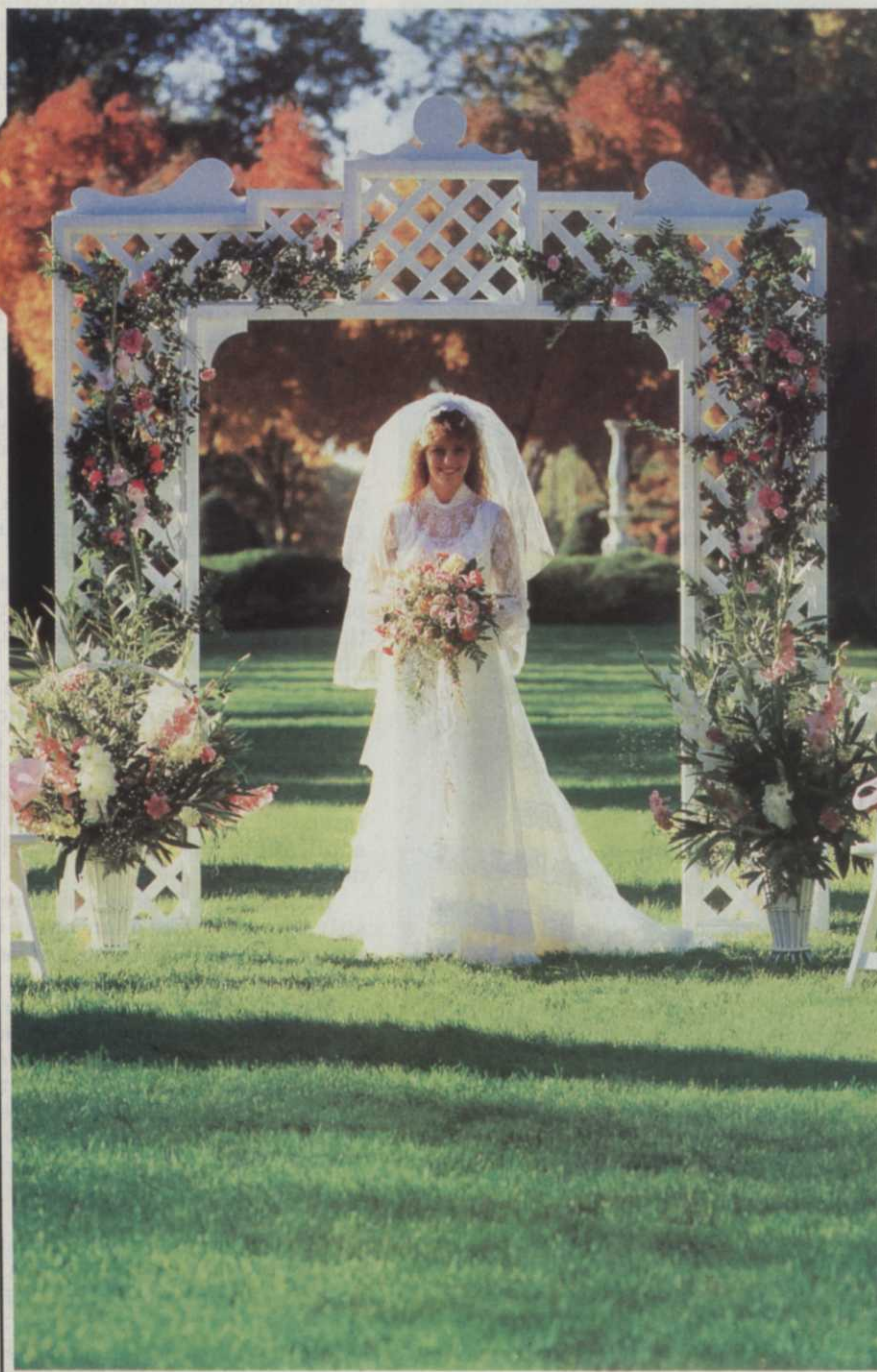
BROADLEAF WEEDS POST-EMERGENT HERBICIDE COMBINATIONS:

- TRIMEC
- TREXSAN
- SUPER TRIMEC
- TURFLON
- WEEDONE
- DPC

PREEMERGENCE HERBICIDE SOIL LONGEVITY:

- BENEFIN
- DCPA
- OXADIAZON
- PENDIMETHALIN
- BENSULIDE

A thing of beauty
is a joy forever.
Unless there are grubs
in there.



Grubs. They're spoilers. Give them an inch and they'll take a lawn.

Only one product works good enough and lasts long enough to effectively prevent grub damage. ®OFTANOL insecticide.

OFTANOL works in the top 1-1½ inches of soil, where the grubs are, and remains active.

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COOL-SEASON TURF

by Robert Shearman, University of Nebraska



Herbicide soil persistence can affect overseeding and reestablishment efforts. Read the pesticide label for more information concerning potential effects on seed.



Annual broadleaf weeds, like the knotweed (above), are best controlled in their early stages of growth and development.

A complete weed control program includes both pre-emergence and post-emergence herbicides, as well as cultural practices.

The primary pre-emergence herbicides for grassy and broadleaf weeds in cool-season turf are benefin, bensulide, DCPA, pendimethalin, oxadiazon, and siduron.

Siduron is the only pre-emergence herbicide that can be applied near time of seeding. Bensulide and DCPA can be applied in the spring following a fall seeding.

Pre-emergence herbicides should be watered in so the chemical can form a barrier in the soil prior to weed seed germination.

The resulting chemical barrier should not be disturbed during key weed germination periods.

The herbicides should be applied two weeks prior to the expected weed seed germination period. Second applications may be necessary to provide control over the entire germination period. Contact your local university or industry turf specialist for germination times of primary weeds. Also, see the germination map for crabgrass and annual bluegrass in this guide.

Post-emergence herbicides. The primary post-emergence herbicides for grassy weeds in turf are the arsonates; MSMA, DSMA, CMA, and MAMA. Treated areas should not be reseeded for a month or more after application. See pesticide labels for details.

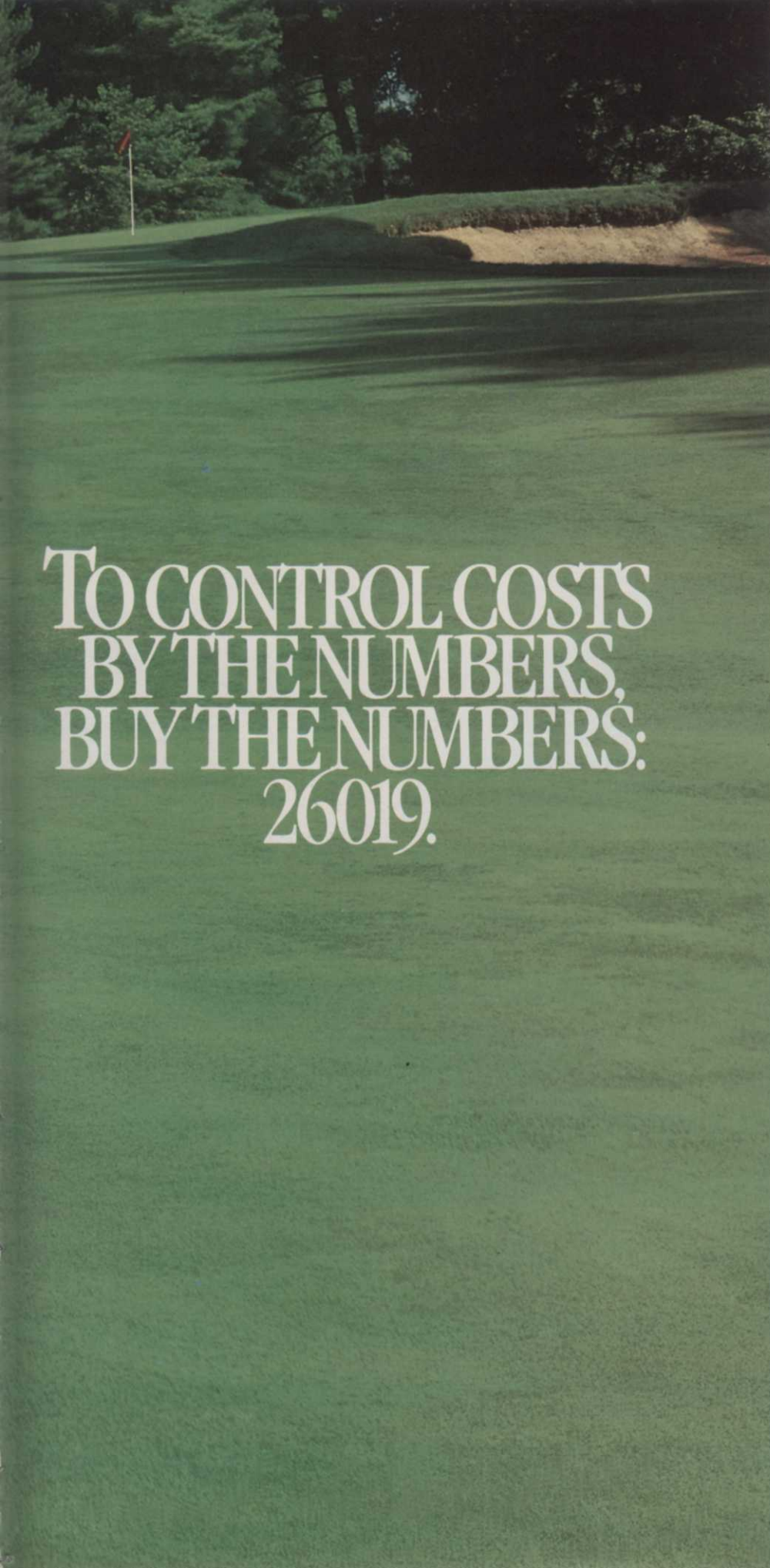
Bentgrass and fescue are more sensitive to arsonates than other cool-season grasses. CMA is the safest for bentgrass.

Weed foliage should be sprayed while still young (two- or three-leaf stage), if possible. The effectiveness of arsonates improves with temperature, so rates need to be increased for temperatures below 80 degrees F.

A new post-emergent herbicide for annual grass control has been introduced this season.

Acclaim offers a wider window of post-emergence control than the arsonates with less potential for turfgrass injury.

The primary post-emergence herbicides for broadleaf weeds are 2,4-D,



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CHIPCO® 26019 fungicide
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The cost alone might convince you to give it a try. But performance against turf disease makes CHIPCO 26019 the leading fungicide on the market.

A fairway disease prevention program based on CHIPCO 26019 will give effective, long-lasting protection against the major diseases: Helminthosporium Leaf Spot and Melting Out, Dollar Spot, Brown Patch, Fusarium Blight, Red Thread, Fusarium Patch, and Gray and Pink Snow Molds.

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Unreliable control from narrow-spectrum fungicides. Inconsistent performance from longer residual systemics. That's why two out of every three golf courses are now being treated with regularly scheduled applications of Daconil 2787 fungicide.

And for good reason.

Only Daconil 2787 has a proven record of consistent, first-rate control of eleven major turf diseases. Including tough ones such as Helminthosporium melting out, benomyl-resistant dollar spot and large brown patch.

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years of use. Even on courses where Daconil 2787 was applied at weekly intervals for many seasons. Convincing proof that you don't have to alternate sprays to avoid developing resistance to Daconil 2787.

And when it comes to cost, nothing is more economical than Daconil 2787. On a per 1000 sq. ft. basis, a single application of Daconil 2787 Flowable Fungicide costs less than Tersan® 1991, Chipco® 26019, Bayleton®, Rubigan® or even Dyrene®.

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The following names are registered trademarks:

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Painesville, Ohio 44077

WEED CONTROL GUIDE

2,4-DP, dicamba, and MCPP. Formulations of these products, such as Trimec and Weedone DPC, provide increased effectiveness on hard-to-control species. Turflon-D (triclopyr plus 2,4-D) is effective on some of the more difficult-to-control broadleaf weeds, such as knotweed and yellow woodsorrel.

These herbicides should not be applied until a new lawn has been mowed at least three times. The target weeds should be actively growing for best results.

The temperature at applications should be at least 60 degrees F. Applications during extreme heat or drought can cause severe damage to desirable turf.

Two treatments of post-emergence herbicides are generally necessary to control broadleaf weeds. See labels

for the proper interval between applications.

Winter annuals can be sprayed early in the year, followed by summer annuals and perennials. Fall treatment for perennials is possible.

Post-emergence herbicides are often combined to achieve improved control and reduce the need for repeat applications.

Occasionally, a landscape manager or sod producer chooses to fumigate a seedbed prior to planting to reduce weed seed, control insects and disease, and eliminate off-type grasses.

Methyl bromide (Dowfume), metham (Vapam), dazomet (Mylone), and Vorlex are used for pre-plant fumigation. See labels for delay period following treatment and before seeding.

Renovation of turf stands is gaining

acceptance, especially since the development of glyphosate (Roundup).

During renovation all existing vegetation is killed, and the area is re-seeded in a matter of weeks without major cultivation. Glyphosate is deactivated within a few days after application. Amitrole, cacodylic acid, and dalapon can also be used, but the delay period for seeding may be from four to eight weeks.

Progress is being made in selectively killing annual bluegrass in perennial ryegrass, Kentucky bluegrass, and bentgrass fairways.

Late-summer and early-fall applications of ethofumesate (Progress) are particularly promising.

Late-season applications of mefluidide and flurprimidol have also reduced annual bluegrass competition in cool-season turfs. **WT&T**

HERBICIDE MANUFACTURERS

American Cyanamid
1 Cyanamid Plaza
Wayne, NJ 07470
(201) 831-2000.

The Andersons, PO Box 119
Maumee, OH 43537
(419) 893-5050.

Applied Biochemists
5300 West County Line Rd.
Mequon, WI 53092.
(414) 242-5870.

BASF Wyandotte
100 Cherry Hill Rd.
Parsippany, NJ 07054
(201) 263-3400.

Ciba Geigy Corp.
PO Box 18300
Greensboro, NC 27419
(919) 292-7100.

W.A. Cleary Chemical Corp.
1049 Somerset St.
Somerset, NJ 08873
(201) 247-8000.

Crystal Chemical Co.
1523 North Post Oak Rd.
Houston, TX 77055
(713) 682-1221.

Dow Chemical USA
PO Box 1706
Midland, MI 48640
(517) 636-1105.

Drexel Chemical Co.
2487 Pennsylvania St.
Memphis TN 38109
(901) 774-4370.

E.I. Du Pont de Nemours
1007 Market St.
Wilmington, DE, 19898
(302) 774-1000.

Elanco Products Co.
Lilly Corporate Center
Indianapolis, IN 46285
(317) 261-3759.

PBI/Gordon Corp.
1217 West 12th St.
Kansas City, MO 64101
(816) 421-4070.

Hopkins Agric. Chem. Co.
PO Box 7532
Madison, WI 53707
(608) 222-0624.

ICI Americas, PO Box 751
Wilmington, DE 19899
(302) 575-3000

Lebanon Chemical Corp.
P.O. Box 180
Lebanon, PA 17042
(717) 273-1685

Lesco Products
20005 Lake Rd.
Rocky River, OH 44116
(216) 333-9250.

Mallinckrodt Inc.
PO Box 5439
St. Louis, MO 63147
(314) 895-2000.

Mobay Chemical Group
PO Box 4913
Kansas City, MO 64120
(816) 242-2000.

Monsanto Co.
800 North Lindbergh Blvd.
St. Louis, MO 63167
(314) 694-1000.

Nor-Am Chemical Co.
3509 Silverside Rd.
PO Box 7495
Wilmington, DE 19803.
(302) 575-2000

Ortho Div., Chevron
575 Market St.
San Francisco, CA 94105
(415) 894-7700

Pennwalt Corp.
Three Pkwy.
Philadelphia, PA 19102
(215) 587-7000.

Regal Chemical Co.
PO Box 900
Alpharetta, GA 30201
(404) 475-4837.

Rhone Poulenc Inc.
Agrichemical Div.
PO Box 125
Monmouth Junc., NJ 08852
(201) 297-0100.

Rohm & Haas Co.
Independence Mall West
Philadelphia, PA 19105
(215) 592-3000.

OM Scott & Sons
Proturf Div.
Marysville, OH 43041
(513) 644-0011.

SDS Biotech
7528 Auburn Rd.
Painesville, OH 44077
(216) 357-3000.

Stauffer Chemical Co.
Agricultural Chem. Div.
Westport, CT 06881
(203) 222-3294.

Union Carbide
Agricultural Products
T.W. Alexander Drive
Research Triangle Park,
NC, 27709.
(919) 549-2000

Uniroyal Chemical
320 Elm St
Naugatuck, CT 06770
(203) 723-3000.

Velsicol Chemical Corp.
341 E. Ohio
Chicago, IL 60611
(312) 670-4665.

Vertac Chemical Corp.
5100 Poplar Ave.
Suite 2414
Memphis, TN 38137
(901) 767-6851.

Vineland Chemical Co., Inc.
1611 W. Wheat Rd.
PO Box 745
Vineland, NJ 08360
(609) 691-3535.