New CHIPCO MOCAP® insecticide gives you the kind of grub control you need...control that's fast and effective.

CHIPCO MOCAP starts killing grubs as soon as you water it in. Other products take hours or days to work.

And all that time, grubs continue to feed, destroying your turf.

For best results, apply CHIPCO MOCAP before grubs start to feed—usually in August or early September. But if grubs get the jump on you, you can still take control quickly and effectively with fast-acting CHIPCO MOCAP.

And fast action is just part of the story. CHIPCO MOCAP gives effective control of a broad spectrum of grubs. CHIPCO MOCAP KILLS OTHER TURF INSECTS, TOO.

CHIPCO MOCAP knocks out a broad range of surface insects, including chinchbug and sod webworm. And if nematodes or mole crickets are destroying your turf, you can destroy them, too, with CHIPCO MOCAP.

For the fastest, most effective control of grubs and other turf pests, include CHIPCO MOCAP in your turfgrass management program. CHIPCO MOCAP from Rhône-Poulenc Inc., makers of CHIPCO® 26019 and CHIPCO® Ronstar®, is a new addition to the CHIPCO line of fine products for turfgrass protection.

For more information write to Rhône-Poulenc, CHIPCO Department, P.O. Box 125, Monmouth Junction, NJ 08852

CHIPCO, RONSTAR and MOCAP are registered trademarks of Rhône-Poulenc.

Circle No. 171 on Reader Inquiry Card
best time to seed is the fall. The fall (8 to 9 weeks before frost) or early spring is the best time for northern states. The temperature and light regimes during these periods are also usually optimal for germination and growth because these are the natural germination times for wildflowers.

If a dry period occurs or the seeds are planted during a less optimal period, supplemental irrigation is recommended for satisfactory performance.

Wildflowers are often mixed with grasses to add soil stabilization and erosion control.

Fertilization is not recommended for wildflowers unless the soil is extremely sterile. Fertilization primarily encourages weed growth. If weeds are a problem, till the soil and water to encourage weed germination, then spray with a non-selective contact herbicide such as "Roundup" at least one week prior to planting. Try not to disturb the soil again because this will just bring more weed seeds to the surface. Ample moisture and high germination of your wildflowers is your best tool against weeds.

Seeding rate
A minimum seeding rate is 4 to 8 pounds per acre or 1 ounce per 250 square feet depending on the mix used. This will provide 40 to 72 seeds per square foot. If a denser stand is desired, especially for more color the first year or in a smaller area, it is recommended to at least double this seeding rate.

You must also have patience with wildflowers. Although some will bloom within 6 to 8 weeks of planting, many must mature much longer before they can flower. This is especially true of the perennials which may require a few years before an optimum stand is achieved. After establishment wildflowers require minimal care.

For optimal growth and flowering under drought conditions, supplemental irrigation is recommended. Even under these conditions, if no irrigation is available, they will persist and bloom when natural rainfall is available. Often they have more extensive root systems than many traditional flowers so they will perform with much less water.

Many landscapers and highway departments will mow wildflowers once a year in July, after the seeds have set, to improve the appearance and scatter the seeds for reseeding. Wildflowers will tolerate additional mowings, but should not be mowed after March or bloom will be reduced. Mowing, however, is not necessary.

As interest in wildflowers has increased so has the research. In 1983, Mrs. Lyndon B. Johnson and associates founded the non-profit National Wildflower Research Center in Austin, TX, to investigate and promote research on wildflowers. (See related story, this issue.)

The states of Texas and Massachusetts have both performed extensive studies on establishment of wildflowers on roadsides. Massachusetts has even experimented with utilizing wildflower sods for steep slopes.

Seed companies have been researching improved establishment procedures, as well as improved methods of growing and harvesting the seed to increase the supply and reduce the costs of the seed. In addition they hope to make additional varieties of wildflowers available.

If you are only going to seed a small area with wildflowers, you can buy small packets of mixtures or single species from your local garden center. However, for larger areas it is recommended you contact one of the companies listed on the preceeding page for larger seed quantities (this list is not intended to show all companies that may market wildflowers). Many of these companies market wildflower mixtures adapted to certain regions or conditions in quantities of one pound or greater for $20 to $48 per pound. Quantities greater than one pound are often sold at a discount. A few of the companies sell as little as one ounce for $5 to $6. It is recommended you write or call the companies that have products that interest you.

Whatever the cost, wildflowers will bring a profit to you—first due to decreased maintenance cost, and second from the pleasure they bring to others.

Some of the perennials may require a few years before an optimum stand is achieved.
THREE TOOLS THAT WILL OPEN YOUR EYES

In operations such as seeding, fertilizing, or the application of liquid chemicals, accurate measurement is essential to minimizing waste and achieving quality results. Yet, most operators have been forced to run “blind” because of a lack of affordable, reliable instrumentation. Micro-Trak is changing that with a line of low cost monitors that provide a clear picture of the work performed.

FLOWTrak™ SPRAYER MONITOR
Provides a direct readout of ground speed with tenth of a mile per hour accuracy, distance in feet, acres worked, gallons applied per acre and total gallons used. Includes stainless steel flowmeter.

$595

CALC-AN-ACRE™
SPEED, AREA, AND DISTANCE MONITOR
A basic, very easy to use system that provides measurement of acres, MPH and feet.

$189.95

FLO-PRO™
MULTIPLE INPUT GALLON COUNTER
Monitors the flow of chemicals from up to three separate tanks at the same time. Features set keys and built-in relay for notifying the operator when a desired application volume is reached.

FOR COMPLETE INFORMATION CALL TOLL FREE 1-800-328-9613
(Collect in MN (507) 257-3600)

A NEW VISION IN GROUNDS CARE AND MAINTENANCE

Circle No. 235 on Reader Inquiry Card

MARCH 1985/WEEDS TREES & TURF 43
There's a New Twin in Our Family.

It's the lowest horsepower twin we've ever built. Meet the Briggs & Stratton 14 hp twin.

This new engine delivers that great twin cylinder smoothness...without giving you more power than you need. It's the perfect power choice for professional lawn care operators as well as discriminating homeowners.

Don't let the size fool you.

This new engine offers the same big advantages as our larger horsepower twins. It has the same rugged components — the same basic block and heavy-duty cast iron sleeves.

More comfortable.

It delivers the same super smooth performance too — the counteracting forces of opposed pistons naturally create less vibration. That means greater operator comfort and extended equipment life, critical attributes for professional equipment.

Cleaner, quieter.

A rugged, automotive-style air cleaner — featuring a dual-element heavy-duty paper cartridge and "oil foam" pre-cleaner — is standard on this new engine.

The system actually exceeds automotive standards for efficiency. It gives you cleaner operation, better protection and longer engine life.

The engine is remarkably quiet, too. Our special acoustically engineered cylinder and head design and keyed crankshaft timing gear combine to keep internal noise to a minimum. In addition, several advanced muffler systems are available — including our Super Lo-Tone muffler which minimizes noise while maximizing power output.

The rest of the family.

Now you have three twin cylinder horsepower sizes to choose from — 14, 16 and 18. Each is available in horizontal or vertical crankshaft configurations. And each is available as an I/C® (Industrial/Commercial) package — for extra-demanding applications or for the establishment of separation in your product line.

Which means now, more than ever, we're your single source for twin cylinder engines. For the whole story, just call your Briggs & Stratton representative.

BRIGGS & STRATTON 

The power in power equipment.

Circle No. 108 on Reader Inquiry Card
No turf or landscape will remain weed-free without the intervention of man and his technology. This fact of nature has provided, and will continue to provide, work for the landscape manager.

Manmade landscapes, left alone to heat, drought, poor soil, shade, and traffic, will surrender to weeds.

The landscape manager's job is to shift the balance in favor of the desirable species and keep it that way. He does this by putting stress on the weeds and reducing the stress on the desirable plants.

Stress can come from many sources: poor soil; excessive shade, slope, moisture, wind; improper plant selection; and even maintenance practices such as mowing too low or too much at one time, using unnecessarily heavy machinery on turf areas, overirrigating, and overfertilization. Beneficial practices such as aeration or cultivation at the wrong time increase weed pressure.

Correction of stress factors is an important component of a weed control program. If stress can't be corrected, plants tolerant to the stress should be selected and planted in the area.

In this Guide, weed control is divided into four categories; turf, ornamental, rights-of-way and aquatic. Each area requires a separate approach, even though many of the chemicals and weeds are the same. It's important that a landscape manager approach each in the proper way.
Only asulam is used for postemergence control of crabgrass and dallisgrass in St. Augustine. MSMA and DSMA are effective postemergence herbicides for these weeds in bermudagrass. The arsonates are used almost exclusively for dallisgrass control in bermuda and zoysia.

Goosegrass is the most difficult summer grass to control in the South. Timing of application of preemergence herbicides is of paramount importance if control is to be achieved. We generally think goosegrass starts germinating in significant quantities four to six weeks after crabgrass. However, this can and does vary.

If application of a preemergence is delayed, large crabgrass will escape because it germinates earlier than goosegrass. In bermudagrass and zoysia, large crabgrass can be controlled quite effectively with postemergence applications of the arsonates. Use of preemergence herbicides would appear to be a better approach to goosegrass control than postemergence control with arsonates.

Oxadiazon (Ronstar) gives excellent season-long control of goosegrass. Research has shown postemergence applications of MSMA plus metribuzen (Sencor) gives good control of goosegrass.

Sandbur and bahiagrass in bermuda and zoysia can be controlled with arsenicals. There is no selective control of torpedograss in southern turf at the present.

Both annual and perennial sedges are problems in the South. Purple nutsedge and, to a lesser degree, yellow nutsedge are the most severe problems. Multiple applications of arsenicals or an arsenical/phenoxoy combination are generally recommended for purple nutsedge, only on bermuda or zoysia. Basagran can be used for yellow nutsedge control.

Summer Broadleaf Weeds are a problem throughout the South in turf, but not to the extent of the grassy weeds, such as dallisgrass, large crabgrass, and goosegrass. Prostrate spurge and Virginia buttonweed are important and difficult to control broadleaf weeds. Multiple applications of 2,4-D plus dicamba, Trimec, or Trex-San are almost always necessary. Researchers suggest the use of a nonionic surfactant with the herbicide.

Winter Grass Weeds. Annual bluegrass is by far the most severe grassy weed infesting southern turf continued on page 50.
Hand-weeding is a waste of time. With Roundup Herbicide, you'll do the job faster and have more time to handle other work.

Around patios, steps, walks, driveways, curbs and flower beds—the weeding jobs that used to take a lot of time now take just a minute with Roundup. Here's one herbicide that controls many kinds of weeds, over 100 in all. And Roundup gets them, roots and all, so they won't grow back.

Besides making weed control faster and easier, Roundup also helps make it more economical. For example, with one gallon of 2% spray solution you can treat 30 tree rings for about a nickel apiece.*

Roundup can be used with confidence because it has exceptional environmental characteristics. It's virtually odorless, and when properly applied, Roundup won't wash, leach or carry over in the soil.

Use Roundup once and you'll see how it can make weeding easier, faster...and your operation more profitable.

You'll see that in a minute.

A TRIMMING & EDGING GUIDE FOR ROUNDUP HERBICIDE IS AVAILABLE. CALL TOLL-FREE 800-621-5800. IN ILLINOIS, CALL 800-972-5858.

*Cost of one gallon of 2% spray solution of Roundup to treat low-growing vegetation.

**ALWAYS READ AND FOLLOW LABEL DIRECTIONS FOR ROUNDUP. Roundup® is a registered trademark of Monsanto Company. © Monsanto Company 1985. RNC-5-101D
Suggested Timing for Preemergence Herbicides to Control Crabgrass and Annual Bluegrass

During the late growing season, through the dormancy period and into the early growing season.

Beside decreasing the aesthetic value of turf, the primary objective to annual bluegrass is its rapid dieback in late spring. Bermudagrass coverage is usually slow following fade out of annual bluegrass leaving large sections of bare ground exposed. Other weeds, such as goosegrass, tend to move into bare areas.

Annual bluegrass control with preemergence herbicides is usually accomplished with either benefin (Balan), bensulide (Betasan), DCPA (Dacthal), pendamethalin, Pronamide or simazine. Two applications may be necessary during the dormant season for acceptable control except with Pronamide or simazine.

Pronamide and simazine provide either preemergence or postemergence control of annual bluegrass in bermudagrass.

There are two choices for annual bluegrass control on bermudagrass greens overseeded with perennial ryegrass. Bensulide may be applied prior to overseeding as a preemergence approach. Ethofumesate (Prograss) may be applied 15 to 30 days after overseeding. Check label for timing to avoid delaying spring transition back to bermudagrass.

Another approach employed particularly on golf courses, is to use a postemergence nonselective herbicide such as paraquat, glyphosate or cacodylic acid prior to the warm-season turf breaking dormancy. This usually does an excellent job on annual bluegrass as well as annual broadleaf weeds present. Injury is often encountered if bermudagrass starts breaking dormancy. The degree of injury is dependent upon the amount of green foliage at the time of application.

Winter Broadleaf Weeds. Important warm-season winter broadleaf weeds include common chickweed, henbit, clovers, spurweed, mouse-ear chickweed, lawn burweed, common dandelion, wild onion, wild garlic, plantains, and speedwells.

Preemergence control of some species can be obtained with benefin, bensulide, DCPA, pendamethalin, simazine, and other herbicides. Henbit, chickweed, and clovers usually require something other than 2,4-D for postemergence control. In dormant bermudagrass and zoysiagrass, dicamba or combinations with dicamba are used often for postemergence control.

The phenoxy are safe on completely dormant turfs. However, actively growing turfs vary considerably in tolerance to phenoxy materials.

St. Augustine will usually tolerate a .5 lbs./acre of 2,4-D with only minimal injury. At rates above .5 lbs./acre St. Augustine is usually injured. This may be unimportant when using phenoxy's on dormant warm-season turfs, but invariably application is made during spring transition. All turfgrasses are more susceptible to phenoxy injury during this transition period. The combination of mecoprop plus chlorfurecol is often used, especially by the homeowner on St. Augustine.