

PROGRAM:

TURF

SUBJECT: Weed control

PROBLEM:

- Control of yellow nutsedge.
- Most consistent performance.
- Exceptional turf tolerance.

SOLUTION:

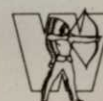
For this problem, the solution is clear. Basagran[®] herbicide. Because for consistent yellow nutsedge control and exceptional turf tolerance, Basagran is clearly the best. Read and follow label directions. *BASF Wyandotte Corporation, Agricultural Chemicals Group, 100 Cherry Hill Road, Parsippany, NJ 07054.*



**When you define the problem,
the solution is clear.**



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How to make a
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even better for turf.

About the only thing that could make
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turf would be to lower the cost. So that's
what we've done. Now you can get the
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Nothing controls crabgrass and goose grass better than Ronstar G. And you get this great weed control for the whole season with just one easy, early application.

Treat your turf with Ronstar G. The great crabgrass herbicide with the better-than-ever price. Rhône-Poulenc Chemical Co. Agrochemical Div., Rhône-Poulenc, Inc. Monmouth Junction, NJ 08852.



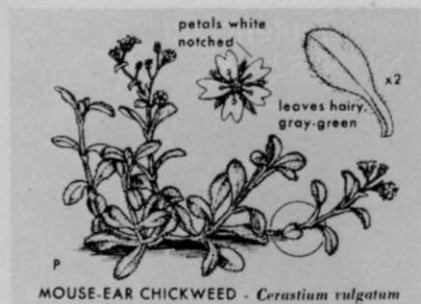
RONSTAR[®] G

HERBICIDE

Circle No. 149 on Reader Inquiry Card

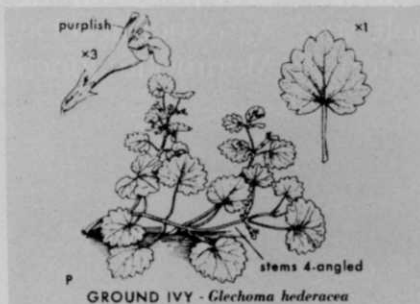
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Landscape Weed Control Guide



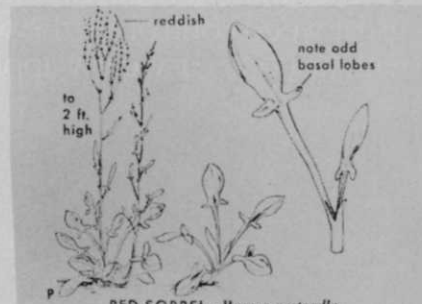
MOUSE-EAR CHICKWEED - *Cerastium vulgatum*

Mouse-Ear Chickweed - The perennial version of chickweed, prefers open sun and also has white flowers.



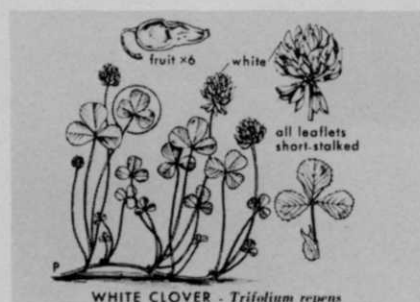
GROUND IVY - *Glechoma hederacea*

Aggressive spreader hugs the ground and produces a purple flower.



RED SORREL - *Rumex acetosella*

Red Sorrel - This tenacious perennial has arrow-shaped leaves and spreads by roots and rhizomes. It can quickly overtake desirable turf weakened by acid soil.



WHITE CLOVER - *Trifolium repens*

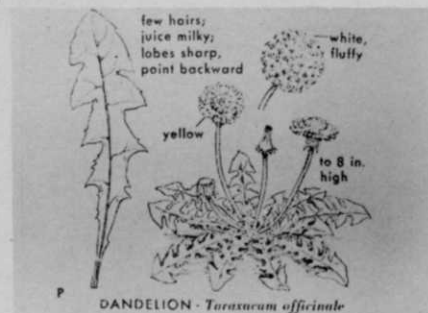
Clover - This perennial broad-leaf embarrasses turf managers with large pink flowers in the spring and tan patches of dead foliage in the summer.

Henbit - Taller than ground ivy, despite purple flowers and scallop-shaped leaves, henbit is a winter annual most noticeable in early spring.



HEAL-ALL - *Prunella vulgaris*

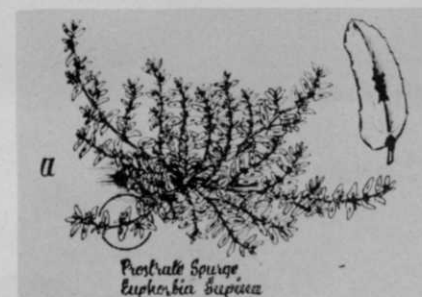
Heal-All - This hairy-leaved perennial is common in new and poorly maintained lawns throughout the U.S. It can spread beneath the level of mower blades.



DANDELION - *Taraxacum officinale*

Dandelion - This perennial, famous for its taproot and yellow flower, is a dead give-a-way to neighbors with poor lawn maintenance. All children flock to lawns with the puffy seedheads in late spring.

Ground Ivy - This perennial can dominate in poor, shady soil. A member of the mint family, this ag-



Prostrate Spurge
Euphorbia supina

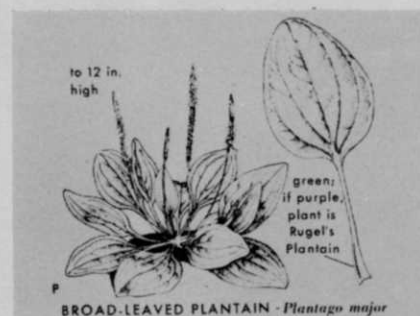
Spurge - The leaves contain a spot in the center of the upper surface. The seed of this heavy seed producer germinates in the early spring. The spreading branches of this annual when broken contain a milky substance.

Sow Thistle - This annual has flowers similar to dandelion but its leaves have spines on the edges and deeper indentations.

Lambsquarter - A summer annual of large size if not mowed, lambsquarter foliage is light green.

Turf Herbicides

Once a weed is identified as grassy or broadleaf, and possibly winter or summer annual, control methods are narrowed down. Different sets of chemicals are used for preemergence or postemergence control of each type. Location of the weed also determines the chemical used.



BROAD-LEAVED PLANTAIN - *Plantago major*

Plantain, Broadleaf - Hosta-like leaves of this perennial surround tall purple stalks containing seeds. The leaves, unlike hosta, lay flat on the surface of the soil.

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For information contact:

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The primary preemergence herbicides for grassy and broadleaf weeds in turf are benefin (Balan), bensulide (Betasan, Betamec-4, Pre-San), DCPA (Dacthal), oxadiazon (Ronstar), and siduron (Tuper-san). Siduron is the only preemergence herbicide that can be applied near time of seeding. Bensulide and DCPA can be applied in the spring following a fall seeding. Benefin and oxadiazon should be applied to established turf. Bensulide can affect rooting of existing bermudagrass, and caution is advised for use of most preemergence herbicides on bermudagrass greens.

Thinning of fine fescue turf and stands of overseeded cool-season grasses in the South have been reported. A list of grasses safe for preemergence application follows.

Benefin	Kentucky bluegrass perennial ryegrass fescue bahiagrass bermudagrass centipedegrass St. Augustine zoysia
Bensulide	perennial bluegrass perennial ryegrass fescue bentgrass bermudagrass bahiagrass centipedegrass St. Augustine zoysia
DCPA	well-established lawn grasses caution for some bent- grasses
Oxadiazon	perennial bluegrass perennial ryegrass bermudagrass St. Augustine
Siduron	perennial bluegrass fescue perennial ryegrass certain bentgrasses zoysia

Preemergence herbicides should be watered in to get the chemical to the seed prior to germination and should remain effective for six to

eight weeks.

Timing of application is critical. Check with local extension for precise dates for application.

The primary postemergence herbicides for grassy weeds in turf are the arsonates; CMA, DSMA, MAMA and MSMA. These chemicals have no residual toxicity so more than one application is required for good control. Treated areas can be seeded after two weeks.

Arsonates should not be used on centipedegrass, St. Augustine, or carpetgrass. Bentgrass and fescue are more sensitive to the arsonates than other grasses. CMA is the safest for use on bentgrass.

Weed foliage should be sprayed while still young (2 to 3 leaf stage). Any discoloration of desired turfgrasses may be remedied by irrigation. Effectiveness of the arsonates improves with temperature and rates may need to be increased for temperatures under 80 degrees F.

The primary postemergence herbicides for broadleaf weeds are 2,4-D, dicamba (Banvel), and MCP. The herbicides should not be applied until a new lawn has had at least three mowings. The target weeds should be actively growing for best results. The temperature should be at least 60 degrees F. Applications during extreme heat or drought can severely damage desirable turf.

Again, consult your local extension agent for precise application timing. At least two treatments are generally necessary. Wait four weeks between treatments. Winter annuals can be sprayed early in the year, followed by summer annuals and perennials. Fall treatment for perennials is possible. When consulting the extension agent, take samples of the target weeds for identification and timing advice.

Often postemergence broadleaf herbicides are combined. Trimec and Trex-san are combinations of all three. Weed-B-Gon is 2,4-D and

MCP. Super-D Weedone and Banvel + 2,4-D are dicamba, 2,4-D combinations.

Specialty Herbicides

Weeds in turf that seem to defy standard treatments, such as *Poa annua*, nutsedge, and goosegrass, require extra effort and specialty herbicides in some situations.

Poa annua is the most prevalent weed on golf courses in the U.S. In cool, moist climates it will dominate fairways if uncontrolled. This prolific seed producer also invades overseeded turf in the South.

Benefin, bensulide, and DCPA are used preemergence against *Poa*, but fall treatment with preemergence also disrupts seeding of desirable grasses. Glyphosate and metribuzin (Sencor 50W) have been used to stop annual bluegrass in dormant bermudagrass. Pronamide (Kerb) and Endothal have provided postemergence control of *Poa annua* in bermudagrass. These treatments for *Poa annua* are also effective against chickweed, henbit, and other broadleaf weeds.

Nutsedge can be controlled with 2,4-D and the arsonates. However, a special label was granted for control of yellow nutsedge with bentazon (Basagran) in established turf.

Goosegrass and crabgrass control in bermudagrass has been helped with a state local need labels for metribuzin (Sencor 50W). Tests at North Carolina State have shown metribuzin as a postemergence controls *Poa annua*, chickweed, and henbit. Some bermudagrasses are partly sensitive to metribuzin. Preemergence treatments of oxadiazon are effective against goosegrass.

Preplant Control

Since many weed headaches are caused by weed seed present in the soil at planting, soil fumigation can prevent problems later. Insects and fungi are controlled at the same

Continues on page 40



Either way, Balan® is your budget's best friend.

For years, Balan® has been one of America's most popular preemergence herbicides. It's earned its popularity by giving dependable control of turfgrass troublemakers like crabgrass, goosegrass, poa annua, and foxtail.

Now, Balan is going to be even more popular. First, you now have the flexibility of either granular or sprayable formulations. And when you compare Balan against other preemergence herbicides, you will find Balan is now the *most economical* in controlling crabgrass in the spring—or goosegrass in early summer—or poa annua in the fall.

So now, granular or sprayable, Balan is your annual weed grasses' worst enemy and your budget's best friend.

Get Balan granular from your Elanco distributor. For sprayable formulation, contact USS Agri-Chemicals or Anderson Chemical.

The Andersons
Lawn Fertilizer Division
P.O. Box 119
Maumee, OH 43537

USS Agri-Chemicals
P.O. Box 1685
Atlanta, GA 30301

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Rear deck rollers work along with the front wheels to keep the deck and blades off the ground, even over rough terrain. Springs are also available to absorb deck weight and allow the deck to "float" with the contour of the ground. (These anti-scalp packages are optional, depending on the contours of your particular turf.)

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The Cushman Front Line doesn't go out of service when the mowing season is over. It can work for you all year 'round when you add accessories like the ROPS structure and weatherite cab, 60" rotary broom (gas unit only) and the 48" snow thrower.

6 Service when you need it.

Your Cushman Front Line dealer stocks parts for the engines, tractors and decks, and services the entire unit. He's an experienced, thoroughly trained professional, dedicated to keeping your Front Line mower in service.

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time.

Methyl bromide (Dowfume), metham (Vapam), dazomet (Mylone) and Vorlex are used for preplant fumigation. Residues can delay seeding up to three weeks or more. Fumigants are applied to loose soil. Lately, glyphosate (Roundup) has provided a faster alternative to fumigants, however, it controls only living plants, not seeds, fungi, or insects. Other nonselective herbicides for grasses are amitrole, cacodylic acid (Phytar), and dalapon. Glyphosate and cacodylic acid are deactivated within seven days, whereas amitrole and dalapon can remain active for four to six weeks.

Ornamental Weed Control

The emphasis on weed control in landscape displays is more on preplant and accurate application of nonselective herbicides than selective herbicides.

Some of the preplant and pre-emergence herbicides can effect bulbs so be sure to read labels carefully for restrictions and uses. In addition to bensulide, DCPA, and oxadiazon, are many other preemergence and preplant products not used for turf. They include chloramben, chlorpropham (Furloe), dichlobenil (Casoran), diphenamid (Dymid, Enide), EPTC (Eptam), oryzalin (Surflan), pronamide (Kerb), trifluralin (Treflan), and simazine (Princep). For certain landscapes, you may want to fimi-gate prepared soil three weeks prior to planting with metham (Vapam), methyl bromide (Dowfume), dazomet (Mico-Fume), or Vorlex. Extra caution is required with use of fumigants. Both fumigants and preemergence and pre-plant materials must be soaked in or mixed with the soil for control. Glyphosate (Roundup) and paraquat can be applied prior to planting on a nonselective basis. These same herbicides can be used with rope wick applicators for postemer-

gence control of weeds. Since it has little or no residual toxicity, paraquat can be mixed with other herbicides (simazine, oryzalin) for extended control.

The primary postemergent herbicides for ornamentals are Devrinol (fall application best), diphenamid (Enide), oryzalin (Surflan), oxadiazon (Ronstar), simazine (Princep), and trifluralin (Treflan). These herbicides should only be applied under no or very low wind conditions, granular products should not be applied over wet

foliage, and all products should be watered in. Few landscape planting contain one type of plant and each plant should be judged for sensitivity to a number of herbicides. Postemergent herbicide toxicity changes with temperature as well.

Brush Control

The list of herbicides for brush control is much longer than for turf or ornamental weed control. The main concern is control of spray

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Herbicides and Manufacturers

Chemical	Brand Name	Company	Chemical	Brand Name	Company
amitrole	Amitrol-T	Union Carbide	Ethofumesate	Nortron	BFC
asulam	Asulox	Phone Poulenc	fenac	Fenatrol	Union Carbide
atrazine	Atratol	Ciba Geigy	fosamine	Krenite	Du Pont
benfen	Balan	Elanco	glyphosate	kleenup	Ortho
bensulide	Betamec	P.B.I. Gordon		Roundup	Monsanto
	Betasan	Stauffer	linuron	Lorox	Du Pont
	Pre-San	Mallinckrodt	methyl bromide	Dowfume	Dow
bentazon	Basagran	BASF	metham	Vapam	Stauffer
bromacil	Hyvar	Du Pont	metribuzin	Sencor	MoBay
bromoxynil	Brominal	Union Carbide	monuron	Urox	Hopkins
cacodylic acid	Phytar	Crystal	MCP	Mecomec	PBI Gordon
chloramben	Amiben	Union Carbide		Chipco Turf	Rhone Poulenc
chlorpropham	Furloe	PPG		Herbicide	
dalapon	Dalapon	Diamond Shamrock	MSMA	MCP	Cleary
dazomet	Mylone	Hopkins	oryzalin	Weedhoe	Vineland
DCPA	Dacthal	Diamond Shamrock	oxadiazon	Surflan	Elanco
dinoseb	Premerge 3	Dow	paraquat	Ronstar	Rhone Poulenc
	Dynamyte	Drexel	picloram		Ortho
Devrinol		Stauffer	prometon	Tordon	Dow
dicamba	Banvel	Velsicol	pronamide	Pramitol	Ciba Geigy
dichlobenil	Casoran	Thompson Hayward	siduron	Kerb	Rohm & Haas
diphenamid	Enide	Tuco/Upjohn	simazine	Tupersan	Du Pont
DSMA		Crystal	tebuthiuron	Princep	Ciba Geigy
dinitrophenol	Dinitro	Thompson Hayward	trifluralin	Spike	Elanco
diuron	Karmex	Du Pont	trifluralin	Treflan	Elanco
diquat	Ortho Diquat	Ortho	triclopyr	Garlon	Dow
endothall	Endothall	Pennwalt	Vorlex		Nor-Am
EPTC	Eptam	Stauffer			

Combinations

Amizine	amitrol and simazine	Union Carbide
Banvel plus	dicamba and 2,4-D	Velsicol
	dicamba and 2,4-D, dalapon	Velsicol
Broadside	MSMA and cacodylic acid	Crystal
Chlorea	diuron, sodium chlorate, sodium metaborate	Rhone Poulenc
Fenamine	amitrole, fenac, atrazine	Union Carbide
Hopkins Rout G-8	bromacil and diuron	Hopkins
Krovax	bromacil and diuron	Du Pont
MonDak	MSMA and dicamba	Velsicol
Pramitol 5PS	prometon, simazine, chlorate	Ciba Geigy
Tordon	picloram and ammonium sulfate	Dow
Trimec	2,4-D, MCP, and dicamba	PBI Gordon
Urox	monuron and TCA	Hopkins
Vegemec	prometon and 2,4-D	PBI Gordon
Weedmaster	dicamba and 2,4-D	Velsicol
Weedone	dichlorprop and 2,4-D	Union Carbide