



tion/application forms which are invalid until the grower pays his acreage fees and gets his validation number for each field on the burning day. Fees are \$4 an acre, up from \$3 in 1975 and will be \$5.50 an acre in 1977 and \$8 in 1978. These revenues fund the registration program, its records, and the state smoke management program. If a grower files too late and is to blame for his lateness, he could pay \$1 an acre and must have his registration approved by DEQ. Other fines are levied for violations, water pollution or intentionally burning fields

not approved for burning.

- Cereal grain crops may be burned only if the grower gives a signed statement under oath or an affirmation that the acreage for burning will follow with seed crops (other than cereal grains, hairy vetch or field pea crops) which require flame sanitation for proper cultivation.

- All growers, turf seed or cereal grain, must keep a copy of the burning permit at the burn site and keep it available for at least one year after issuance for possible inspection.

Farmer combining fescue for seed in Willamette Valley.

tion. All burning records should be kept this way.

- The DEQ will monitor burning and will not issue burning quotas once 195,000 acres (for 1976) have been burned.

- Allocations to growers will be given on first and second allocation process. First allocations are assigned according to the total acreage each grower has beyond 100 acres. A second allocation is awarded to each grower with over

100 registered acres based upon the grower's proportional share of the unallocated remainder of the 214,500 acre grower allocation. Fire district allocations follow the sum of all first allocations applied to growers within the district and the proportional district share of the unallocated portion of the 195,000 total burnable acres.

- The Department may adjust allocation of the 195,000 burnable acres made to fire districts but cannot transfer allocations on one-in/one-out basis after the 195,000 acres are burned. No fire district may burn beyond its quota allocation.

- As DEQ sets the number of daily burning, no burning may be greater than its decree for the marginal day except if the quota is 50 acres or less. At this time, a permit may allow burning in one field if the field isn't over 100 acres and if no other permit is given that day. Fifty acres quota districts may not get 50 acre permits on two consecutive days.

- The burning season is from July 1 to October 31 and may begin at 9:30 a.m. PDT under marginal conditions but no open field burning is allowed one half hour before sunset or may continue later than one and one half hour after sunset. Fire chief or his deput may change these hours to aid air quality.

- Marginal burning is rated as follows: marginal Class N burning is limited to: North Valley: one basic quota may be issued; South Valley: one property area quota for priority area burning.

- Marginal S conditions: North Valley: one basic quota may be issued in concordance with the following permits jurisdiction: Aumsville, Drakes Crossing, Marion County District 1, Silverton, Stayton, Sublimity, and the Marion County portion of the Clackamas-Marion Area burning. No field may burn on the upwind side of any city, airport or highway within a priority area.

- Priority areas are:

—in or within three miles of the city limits of incorporated cities having population of 10,000 or greater;

*Continues on page 14*

## Willamette Valley Suited For Grass Seed Culture

Oregon's Willamette Valley is the world's foremost producer of grass seed. Two important factors explain why — climatic conditions and soil. Fifty inches of rainfall during the winter and early spring, followed by dry summer months create ideal growing conditions on the heavy soils which are particularly well-suited for grass culture. Seed is produced from Oregon City in the north to Eugene in the south.

The Willamette Valley is the only area in the world where grass seed is grown commercially to such an extent as a primary crop. It contrasts to many areas where harvesting is dictated by favorable price.

The industry boosts the agricultural income of the state on the average of \$60 million, with goods and services purchased and used in producing and distributing seed likely to exceed \$500 million.

A minimum land requirement for an economically favorable operation to support a family unit is 800 acres, rented, leased or owned outright, with the price of land now varying from \$600 to \$900 an acre. This reflects about \$300 to \$500 higher an acre than 10 years ago. Machinery is also a heavy capital investment.

As for expenses, the cost of seed stock is minimal. Labor, facilities, equipment, fertilizer and other supplies are the major items, but farming without the right equipment to do the right work at the right time is risky business; economizing on fertilizer is faulty thrift.

Successful seed farmers try to schedule their operations five to seven years in advance. Bob Richardson at Willamette Seed & Grain in Shedd, Ore., adds: "Those who invest their time and money wisely can't economize on fertilizer or weed control and expect to realize maximum quality

— the way to real profit."

Oregon's world-wide reputation for high quality grass seed is due primarily to a seed certification program. To have a crop variety entered in the program, a written request is submitted a year prior to certification time. The seed must also have some attributes which makes it merit certification, as well as being distinguishable from other varieties. One of the preliminary steps in producing certified seed is an application filed with the county agent 60 days before planting. Each crop has its own application showing a variety, field, township, range, section, quarter and a map of the location. A five-year field history of crops grown is also listed.

The 60 day provision allows for sprouting time after which fields are inspected for contaminating grasses. Evidence of such grasses dictates a certification turndown putting the crop into a commercial classification. Of the 120,000 acres inspected last year, 4,147 acres were rejected.

The heart of the certification program is the seed testing laboratory located at Oregon State University in Corvallis. It is the only lab in Oregon which can test for certification and is operated under the School of Agriculture with Ed Hardin, an OSU faculty member, directing lab operation. While the lab does not actually certify, test results indicate the decision. From precisely measured samples, experienced personnel, using powerful magnification, separate grass seeds, weed seeds and inert ingredients to determine the percentage of purity and germination — basic facts required for certification. The seed grower pays a flat fee per field for extension service field inspections and lab work. □

*When your reputation  
is the turf you grow . . .*

PLANT

# Bonnieblue

## Kentucky Bluegrass

Rich dark-green color over a long growing season. Good rhizome and tiller development. Low growth with excellent density even at moderately low mowing heights. Strong disease resistance. A sod with high strength that cuts easily and holds well.

That's Bonnieblue Kentucky bluegrass, and you can stake your reputation on it. We know because at E. F. Burlingham & Sons we value our 70-year reputation as seedsmen—and we're sold on the credentials of Bonnieblue. Credentials that include development of the variety through a special breeding project initiated at Rutgers University in 1962. Our tests and trials across the country on a continuous basis with Bonnieblue consistently ranking among the highest in overall turf quality. And now, the important steps we have taken to maintain genetically pure seed stock and painstaking production for plump, bright, high quality seed.

So, when your reputation is the turf you grow, stake it on the performance of Bonnieblue.

We do!

---

E. F. Burlingham & Sons, P.O. Box 217,  
Forest Grove, OR 97116. Phone: (503) 357-2141;  
Telex: 36-0274; Cable: Burlingham.

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E. F. BURLINGHAM & SONS



—areas within one mile of airports serving regularly scheduled airline flights;

—areas in or within three miles of city limits of Lebanon;

—areas west side of and within ¼ mile of these highways: U.S. Interstates 5, 99, 99E and 99W.

—areas on the south side of within ¼ mile of U.S. Highway 20 between Albany and Lebanon, Oregon Highway 228 from its junction south of Brownsville to its rail crossing at the community of Tulsa.

To help ease the watchdog effort, 'skywatch' planes were set up by the bill.

Although the bill says, regional air quality control authorities are forbidden to regulate burning or perennial grass seed crops, annual grass seed crops and grain crops, it provides for the Oregon Field Sanitation Committee to replace the Field Burning Committee. The five member group, seated for four year terms, would represent two members of five nominated by the Oregon Seed Council, two representing the public appointed by the director of the Department and a fifth person appointed by the governor.

Its duties and powers would revolve about field burning, its alternatives, studies by outside agencies, contracts and establishment of air emission standards for alternatives. DEQ would oversee the committee enforce its rules and help fire districts with burning regulations. The bill also establishes two inspectors for spot checking fields during the burning season and stations a field burning program manager in Eugene, Ore.

Number of acres is also set — SB 311 allows not more than 235,000 acres to be burned in 1975; 195,000 in 1976 and 95,000 in 1977. In 1978 and each year later, the commission will study the bill's factors and may allow burning of no more than 50,000 acres.

Of 280,183 acres approved for burning, only 186,260 were burned in 1975, the lowest number since 1968. This is 82 percent of the South Valley and 76 percent of the North Valley, due to rain, wind direction



Mechanical sanitizer, one alternative to open field burning, shown in operation. Several kinks must be worked out before it becomes a practical replacement.

and other atmospheric factors. The later the season, the fewer the proper burning days.

There were 761 complaints of smoke in 1975, according to DEQ statistics, down from 1198 in 1974. The all time high was 5142 in 1968 and low of 144 in 1967, but less burning failed to improve air, DEX noted, and accounted for only 20 percent of all smoky days. Much of what Eugene complains about is actually skag burning and city pollution, not field burnings.

By comparison on an annual basis, field burning in 1973 produced 1,050 tons of nitrogen oxides a year, no sulfur oxide tons and 8,404 tons of particulates while slash burning produced 2,154 tons of nitrogen oxides, no tons of sulfur oxides and 9,705 tons of particulates. Motor vehicles emissions yielded 70,179 tons of nitrogen oxides per year, 2,499 tons of sulfur oxides and 4,122 tons of particulates.

Regardless of the gains the bill's supporters have made for their cause, SB 311 is taking a severe toll upon Oregon's home-based industry with a yet unforeseen effect upon the state's precarious economy, high unemployment and its relationship with the foreign market. The situation is bringing in greater competition from the outside, with new

problems for worldwide grass seed.

Denmark is a heavy competitor, levying a steadier business in orchardgrass and perennial ryegrass for U.S. customers. Canada deals in a fine fescue and red creeping which has concerned Oregon business annually. so does England, New Zealand, Poland, Argentina, Chile and Holland.

As Japan concentrates upon producing finer strains of turf-grasses, it is estimated that 35 percent of all forage grasses, mainly ryegrasses and orchardgrass, will come from Japan by 1980.

Economically, the restrictions on open field burning costs Oregon \$22,884,000 at the farm gate, a 35 percent decrease in 1973 markets. Only 209,000 or 285,000 acres produced seed with added burdens of till and no-till methods. No-till of ryegrass costs \$15.74 a hundred acres but tilling is \$18.26. Orchardgrass alone costs \$25 a hundred pounds but in Denmark alone it receives a \$12.50 subsidy per hundred pound from the European Economic Community Government. Oregon growers pay a tax to burn, a situation that the Weed Council believes will force them to import inferior Danish orchardgrass by 1977.

Europe tends to lose, too, since some countries send their seeds to

*Continues on page 44*

Is your new bluegrass plagued with weeds?

# FYLKING IS PURE.

The famous Swedish beauty, Fylking Kentucky bluegrass seed contains no annual bluegrass (*Poa annua*), bentgrass or short-awned foxtail. Strict controls and countless inspections guarantee the physical purity and genetically true seed typical of Fylking Kentucky bluegrass. These procedures make your seed dollars go farther. Fylking is one of the lowest priced elite bluegrass seeds on the market.

Fylking, used as the backbone of your seed mix, will produce a lawn that will make you proud. Fast germination and growth, development of a dense, compact rhizome and root system, make Fylking a natural choice. Low-growing, low-mowing (low as 1/2 inch), more disease, drought, smog and traffic resistant. Fylking is persistent, brilliant green from early spring to late fall.

For a purely beautiful, tough turf, specify Fylking Kentucky bluegrass. Available at your local wholesale seed or sod distributor.



**FYLKING  
KENTUCKY  
BLUEGRASS**

U.S. Plant Patent 2887

Another fine quality product  
of Jacklin Seed Company.



Fylking plants started from "original" breeder's seed in sterile greenhouse media are transplanted to fumigated soil in isolated breeders block for seed increase.



Individually harvested, progeny seed from each original "mother plant" is cross tested for genetic purity. Physical and genetic purity are carefully maintained by constant evaluation, chemical spot roguing and physical removal.

## TURF HERBICIDES

WEEDS TREES & TURF is following its recent turf fungicide report with a detailed study of major manufacturers' turf herbicides. Those contacted were asked to identify their products and what weeds they can control. Their responses were:

**J. & L. Adikes, Inc.**, manufactures two turf herbicides suitable for controlling a wide range of turf weeds. Their Gro-Well crabgrass and broadleaf weed killer can control crabgrass, chickweed and a variety of broadleaf lawn weeds such as dandelion, plantain, knotweed, spotted spurge, pennywort and purslane.

It should be used with care on bents, fescues and clover since it could cause temporary discoloration. This product is not designed for use on St. Augustine, carpet or centipede grasses or on bent golf greens.

Its active ingredients are 8 percent dodecylammonium methanearsonate; 8 percent octylammonium methanearsonate and 5.44 percent octylamine salt of 2,4-dichlorophenoxyacetic acid.

The company's Gro-Well dandelion and broadleaf weed killer can control bluegrass, ryegrass, fescue, Bermuda and Zoysia lawns. Its special targets are knotweed, chickweed, spotted spurge, henbit, black medic, sheep sorrel, bedstraw, buckhorn, chicory, dock, ground ivy, heal-all, lambsquarters, lespedeza, mallow, morning glory, peppergrass, pigweed, plantains, poison ivy, poison oak, purslane, ragweed, shepherd's purse, speedwell, spurge, wild carrot, wild garlic, wild lettuce, wild onion and yarrow.

It is not recommended for use on centipede and St. Augustine grass lawns and shouldn't be applied to

dichondra, carpetgrass or lawns with desirable bentgrass or clovers.

Its active ingredients are: 3.66 percent dimethylamine salt of 2-(2-methyl-4-chlorophenoxy) propionic acid; 8.07 percent dimethylamine salt of 2,4-dichlorophenoxyacetic acid; .84 percent dimethylamine salt of dicamba (3,6-dichloro-o-anisic acid) and .11 percent dimethylamine salt of related compounds.

**Rhodia, Inc.**, Monmouth Junction, N.J., markets five herbicides. Chipco Bucril can control blue mustard, groundsel, lambsquarters and tarweed.

Chemically, it's 33.8 percent octanoic acid ester of bromoxynil (3,5-dibromo-4-hydroxydenzotrile), a broadleaf herbicide.

Chipco Turf Herbicide "D" works against buckhorn, and other plantains, curled dock, dandelion, red sorrel, wild garlic and wild onions.

Its active chemical component is 49.8 percent dimethylamine salt of 2,4-dichlorophenoxyacetic acid.

The company's Chipco Turf Herbicide MCPP works to control surface creeping broadleaf weeds such as common chickweed, mouse-ear chickweed, red clover, white clover, ground ivy, stitchwort and knotweed.

Its active ingredient is 32.8 percent diethanolamine salt of 2-(2-methyl-4-chlorophenoxy) propionic acid.

Chipco Turf Kleen combines MCPP and 2,4-D to control a wider range of weeds than either product. These include curly dock, dandelion, buckhorn and common chickweed.

Chipco Crab Kleen can control grassy weeds as dalligrass, sandbur, bahiagrass, nutsedge, chickweed and wood sorrel.

Its chemically active ingredient is 21.76 percent disodium methanearsonate.

**DuPont**, Wilmington, Del., manufactures Tuperan Siduron weed killer for use on annual weed grasses. It is designed for pre-emergence control of annual weed grasses such as both smooth and hairy crabgrass, foxtail and barnyardgrass. Clover, annual bluegrass (*Poa annua*) and most broadleaf weeds are not controlled by Tuperan.

Its chemical makeup of active ingredient is 50 percent siduron (1-2-methylcyclohexyl)-3-phenylurea).

**Uniroyal Chemical**, Nauagatuck, Conn. produces Slo-Gro, a growth retardant which controls annual bluegrass by reducing reseeding of *Poa annua*.

Active component is 58 percent dimethanolamine salt of 6-hydroxy-3-(2H)-pyridiazione.

**Diamond Shamrock**, Cleveland, Ohio, markets a number of turf herbicides for pre-emerging weeds. Its Dachtal herbicide can control both smooth and large crabgrass, *Poa annua*, goosegrass, carpetweed, common chickweed, johnsongrass (from seed), lambsquarters, lovegrass, purslane, and Veronica (creeping speedwell).

It is not recommended for putting greens or bentgrasses mowed at putting green height.

Its chemically active ingredient is 75 percent dimethyl tetrachloroterephthalate.

Daconate 6 is manufactured for use in selective control of bahiagrass, dalligrass, barnyardgrass and grassy weeds like chickweed, nutsedge, sandbur and wood sorrel. It also controls barnyard cocklebur, goosegrass, and johnsongrass.

Daconate 6 may injure bent-

*continued on page 20*

Maintaining an effective turf-care program often becomes a contest between you, nature and the budget. And professional turf-care managers know the value of having top quality, precision-built equipment in their line-up.

That's why we build Ryan turf equipment with performance, dependability, and economy. Because, after all, good turf-care isn't a game. It's a profession.

For more information write for your free catalog today.

- 1 **Greensaire II\*** Second generation of the Ryan coring aerator. Removes cores on 2" centers down to 3" depth.
- 2 **Core Processor\*** Attaches to Greensaire II. Processes cores,

picks up plant material and returns soil to green.

- 3 **Spikeaire\*** Disc spiker for aeration.
- 4 **Mataway\*** Heavy-duty deep slicer and disc spiker.
- 5 **Ren-O-Thin\*** Removes thatch, grooves for seed, pulverizes aeration cores.
- 6 **Turf Minute-Miser\*** Personnel transportation and towing ball



## RYAN TURF-CARE EQUIPMENT

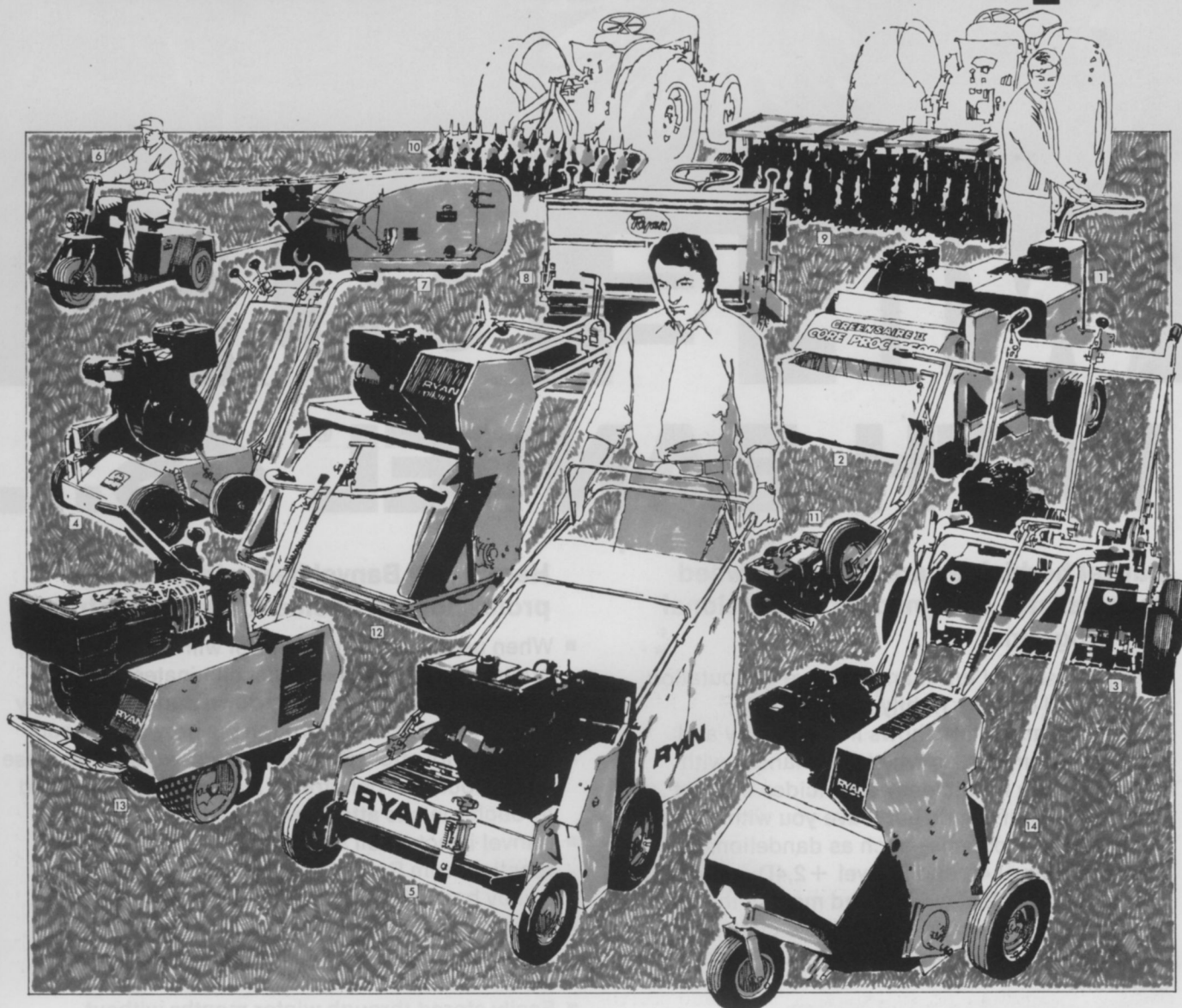
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P.O. Box 82409,  
Lincoln, Nebraska 68501

pickers, Greensweep, utility trailer.

- 7 **Greensweep\*** Picks up cores, thatch, debris from greens, turf and pavement.
- 8 **Spread-rite\*** Top dresser, fertilizer spreader. Handles sand, too.
- 9 **Renovaire.** Turf aerator for large, contoured areas. Interchangeable tines for coring, slicing, open spoon aerating.
- 10 **Tracaire.** Three-point hitch aerator.
- 11 **Pro-Edge\*** Professional edger.
- 12 **Rollaire\*** All-purpose roller.
- 13 **Sod Cutters\*** Self-propelled heavy-duty and junior models.
- 14 **Lawnaire\*** Home lawn aerator.

\*Self-powered and/or propelled.

# The turf-care line-up.





# WIPE OUT WITH BANVEL® 4S...

**Banvel herbicides are broadleaf weed “specialists” designed for professional turf programs.**

As a professional turf man you have a reputation to be proud of. And, rightly so! Your skill, knowledge and effort shows in the beauty and quality of your turf. So why take chances with understrength herbicides? Herbicides that get some broadleaf weeds but leave you with repeated deep-rooted problems—such as dandelions and plantain. Banvel 4S and Banvel +2,4D control all the major broadleaf weeds, and most of the time with just one application. Check the chart and compare your weed problems with the herbicides available.

**Here’s why Banvel herbicides are the professionals’ choice for weed control**

- When used as directed Banvel will not harm trees, ornamentals or grass—it just eliminates weeds.
- No season restrictions. Lay down Banvel from early spring to late fall—all through the growing season.
- Rain will not affect Banvel. It keeps working because it translocates—penetrates leaves and is absorbed through roots to attack every part of the weed.
- Banvel is not a soil sterilant. There is no residual reaction from Banvel as it is broken down in the soil by bacterial action. It is biodegradable.
- No special spraying equipment necessary. It is easy to clean out of equipment after use.
- Mixes readily with hard or soft water.
- Easily stored through winter months without losing potency.



# WEEDS

## BANVEL<sup>®</sup>+2,4D

herbicides...



Circle 124 on free information card

### "Two" is better!

Some weeds simply aren't affected by single herbicide treatment. But Banvel + 2,4D has an "additive effect" in that the two herbicides get weeds that one alone just weakens.

**Banvel herbicides—products for professional turf men**

# Velsicol

Velsicol Chemical Corporation  
341 East Ohio Street • Chicago, Ill. 60611

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WTT-876

### Herbicide and Broadleaf Weed Susceptibility

Weed	2,4-D	Meco-		
		Silvex	prop	Dicamba
Bindweed	S	S-I	S-I	S
Bittercress	S	S-I	S-I	S
Black medic	R	S-I	I	S
Buttercup	S-I	I	I	S
Carpetweed	S	S	S	S
Chickweed, common	R	S	S-I	S
Mouse-ear	I-R	S	S-I	S
Chicory	S	S	S	S
Clover, crimson	S	S	S	S
Hop	I	S	S	S
White	I	S	S	S
Cranesbill	S	S-I	S-I	S
Daisy, oxeye	I	I	I	I
Dandelion	S	S	S	S
Dock	I	I-R	I-R	S
Dogfennel	I	S	I	S
Garlic, wild	S-I	R	R	S-I
Ground ivy	I-R	S-I	I	S-I
Hawkweed	S-I	R	R	S-I
Henbit	I	S	I	S
Knapweed, spotted	I	S-I	I	S
Knawel	R	S	I	S
Knotweed	R	I	I	S
Lambsquarter	S	S	S	S
Lespedeza	I-R	S	S	S
Mugwort	I	I-R	I-R	S-I
Mustards	S	S-I	I	S
Nutsedge	I	R	R	R
Onion, wild	I	R	R	S-I
Ornamental plants	S-I	S-I	S-I	S
Woodsorrel	R	S	R	I
Pennycress	S	S-I	I	S
Pepperweed	S	S-I	S-I	S
Pigweed	S	S	S	S
Plantains	S	I	I-R	I-R
Poison ivy	I	S	R	S-I
Pony foot	S	I	I	S-I
Prostrate spurge	I	I	I	S
Purslane	I	S-I	R	S
Red sorrel	R	I	R	S
Shepherdspurse	S	S	S-I	S
Speedwell	I-R	I-R	I-R	I-R
Spotted spurge	I-R	I	S-I	S-I
Thistle, musk, curl	S	I	I	S
Thistle, Canada	I	I	I	S
Vegetables	S	S	S	S
Wild carrot	S	S-I	S-I	S
Wild strawberry	R	I	R	S-I
Yarrow	I	I-R	I-R	S
Yellow rocket	S-I	I	I	S-I

S = weed susceptible; I = intermediate, good control at times with high rates, sometimes poor, usually require more than one treatment; R = resistant weeds in most instances.

Chart reprinted by permission, S. Wayne Bingham, Ph. D.

## WTT Turf Herbicide Report

grasses and fescues and is not designed for application on St. Augustine grass, carpetgrass, centipede grass or dichondra lawns.

Its active ingredient is 48.35 percent monosodium methanearsonate.

Dacamine can control annual chickweed, broadleaf plantain, buckhorn, buttercup, bull thistle, hoary cress, knotweed, leafy spurge, morning glory, milkweed, mustard, Canada thistle, carpetweed, chickory, curly dock, dandelion, field bindweed, ground ivy, henbit, puncturevine, purslane, ragweed, shepherd's purse, wild carrot, wild garlic and wild onion.

Active ingredients are 33 percent N-oleyl-1, 3-propylene-diamine salt of 2,4-dichlorophenoxyacetic acid.

**W. A. Cleary**, Somerset, N.J., has several postemergent herbicides for turf. AMA plus 2,4-D can control crabgrass, dandelion, plantain, chickweed, silver crabgrass, dalligrass and knotweed. It may cause temporary discoloration of bents, fescues and clovers and should not be used on St. Augustine, carpet or centipede grasses or bent golf courses.

Super Methar can control dalligrass and crabgrasses but may discolor fescue and bentgrasses and should not be used on St. Augustine, carpet or centipede grasses.

Active ingredients are 8 percent octylammonium methanearsonate; 8 percent dodecylammonium methanearsonate and 5.44 percent octylammonium salt of 2,4-D dichlorophenoxyacetic acid.

Methar 30 is marketed to control crabgrass and dalligrass and should not be applied to St. Augustine, carpet or centipede grasses. It may discolor fescue and bentgrass areas.

It is actively 18.90 percent disodium methanearsonate anhydrous.

Methar 80 can control crabgrass but may discolor fescue and bentgrass. It is not designed for St. Augustine, carpet or centipede grasses.

Chemically, it is 50 percent disodium methanearsonate.

Cleary's MCPP can control chickweed (common and mouse-ear

chickweed), knotweed, clover and common plantain.

It is 25.9 percent potassium salt of 2-(2-methyl-4-chlorophenoxy) propionic acid (MCP).

Cleary's MCPP-2,4-D can control broadleaves. It can control dandelion, clover, common chickweed, plantain, pigweed, ragweed, lambsquarters and is less successful on knotweed, black medic, English daisy, dock, purslane, wood sorrel and mallow.

The herbicide is not intended for uses on home lawns or golf greens or tees.

Active chemical components are 31 percent diethanolamine salt of 2-(2-methyl-4-chlorophenoxy) propionic acid and 15.35 percent diethanolamine salt of 2,4-dichlorophenoxyacetic acid.

**Lawn Medic**, Rochester, N.Y. has developed three turf herbicides. Crabgrass Preventer 1 can control smooth and hairy crabgrasses, foxtail and barnyardgrass. Its use on other bentgrass or Bermudagrass may damage turf or golf greens. This product will not control weeds on *Poa annua*, clover or most broadleaf weeds.

Its active ingredient, 7.66 percent, is siduron (1-(2-methylcyclohexyl)-3-phenylurea).

Crabgrass Preventer 2 can control carpetweed, common chickweed, fall panicum, Florida pusley, green foxtail, hairy crabgrass, johnsongrass (from seed), lovegrass, purslane, smooth crabgrass, Texas millet, witch grass, yellow foxtail, and lambsquarters. It should not be used on cohansy, Toronto bents or dichondra.

Its 6.86 percent concentration is its active ingredient, dimethyl tetrachloroterephthalate.

"Liquid" crabgrass killer can control crabgrass in its two and three leaf stage and as branched crabgrass. It may injure fescue and bentgrasses and shouldn't be used on St. Augustine grass.

Its active ingredient is 18.90 percent disodium methanearsonate anhydrous. **Rohm and Haas**, Philadelphia, manufactures Kerb 50-W, a herbicide which can control *Poa annua* in Bermudagrass. It can

also control perennial bluegrass, barnyardgrass, canarygrass, cheatgrass, crabgrass, downy brome, fall panicum, foxtail, goosegrass, lovegrass, orchardgrass, quackgrass, ryegrass, volunteer barley, volunteer oats, volunteer rye, volunteer wheat, annual morning glory, carpetweed, henbit, knotweed, lambsquarter, London rocket, mustards, nettle-leaf goosefoot, nettles, nightshades, purslane, shepherd's purse, smartweeds, and volunteer tomatoes. Kerb will not work on nutgrass (sedges), Bermudagrass, johnsongrass, or such members of the composite family as dandelion, pineapple weed, dog fennel, galinsoga, groundsol, wild lettuce, sowthistle, clover and black medic.

ProTurf of **Scotts**, Marysville, Ohio, produces a wide spectrum of turf herbicides. ProTurf fertilizer with weedgrass preventer can control sprouting grassy weeds of crabgrass, foxtail, goosegrass and *Poa annua* and sprouting broadleaf weeds of lambsquarters, pigweed, shepherd's purse and henbit. It works best on all turfgrasses and dichondra but is not recommended for use on turf areas having 50 percent *Poa annua* or more. Its fertilizer analysis is 26-0-12 (nitrogen sources — 17.3 percent water soluble from urea and methylene ureas, 8.7 percent water insoluble from methylene ureas). Its herbicide is bensulide.

ProTurf fertilizer plus dicot weed control is effective against black medic, buckhorn, buttonweed, chickweed, clover, cudweed, curly dock, shepherd's purse, yellow rocket, ground ivy, heal-all, knotweed, dandelion, filaree, pepperweed, plantain, purslane, lambsquarter, matchweed, English daisy, horseweed, pennywort, pigweed, prickly lettuce, ragweed and sheep sorrel. It is not made to use on St. Augustine, carpetgrass, dichondra or on putting greens. Fertilizer analysis is 30-50-3 (nitrogen sources — 1.2 percent from ammoniated phosphate, 18.8 percent soluble from urea and methylene ureas, 10 percent water insoluble from methylene ureas). Other components are phosphorus from am-