WEEDS!

a menace to everyone / profits for you

There's money in weeds, if you're on the right side of them. And that's with any of the many Du Pont weed and brush killers. They make custom weed control jobs easy and effective. Check the typical problems below; chances are you'll see at least half of them within a mile of where you're standing. The answers are easy, too, because Du Pont has a product to meet almost any weed control situation you'll encounter.

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**THE ANSWER:** A single application of KARMEX® diuron or TELVAR® monuron weed killers provides effective, low-cost control of weeds and grasses for a whole season.

**THE PROBLEM:** Deep-rooted perennial weeds—morning glory, leafy spurge, Canada thistle and others.

**THE ANSWER:** Easier control of noxious weeds than ever before with TRYSBEN® 200 weed killer. Also controls some woody plants.

**THE PROBLEM:** Undesirable growth of brush on plant sites, roadsides, drainage ditches, rights-of-ways.

**THE ANSWER:** Economical control of brush with safe, non-volatile, AMMATE® X or with DYBAR® fenuron weed and brush killer.

Only a few examples of the type of situations that mean opportunity for you are shown above. Product descriptions are necessarily brief, too — each of these Du Pont herbicides effectively control many other kinds of weeds or brush. For complete information mail the coupon to Du Pont today.

On all chemicals follow label instructions and warnings carefully.
Turf and Aquatic Weed Control Surveyed at 15th Ill. Spray School

Contract applicators were among the more than 500 delegates to the 2-day, fact-filled 15th Annual Illinois Custom Spray Operators’ Training School, held at the University of Illinois, Urbana, Jan. 23-24.

Although directed primarily at spraymen in agriculture, the school also turned its attention to activities in the fast-growing turf maintenance field, and touched on developments in aquatic weed control.

Dr. F. W. Slife, from the University’s Department of Agronomy, led into the sessions on weed control in the urban/industrial market with a review of herbicides, emphasizing pre-emergents.

“Pre-emergent chemicals have proven their worth,” Dr. Slife began. “Although there will undoubtedly be new chemicals introduced, CAs should concentrate now on making the best possible use of the formulations available.”

The importance of knowing soil characteristics before beginning application was stressed. “Each pre-emergent herbicide moves differently in various soils, and this could influence results considerably,” he reminded CAs.

Another important consideration is the length of time a herbicide will remain in the soil, Dr. Slife continued.

Amiben, 2,4-D, dalapon, and Eptam disappear rapidly, Dr. Slife pointed out. “When used at recommended rates, these compounds do not normally persist for more than a month or six weeks,” Dr. Slife revealed. Others, like monuron, atrazine, and simazine, may persist in toxic quantities until the next growing season.

Sod Webworm Damage Reviewed

“Although there are some 60 species of sod webworms in the U.S., less than one-third are economic,” Steve Moore, associate entomologist at the Illinois Natural History Survey, told delegates. Of these, most of the damage in 1962 was caused by the larger sod webworms, Crambus trisectus Walker, Moore observed.

“Most obvious sign of infestation is the presence of an unusual number of birds attracted to the lawn to feed on the webworms,” Moore pointed out. “But by the time birds invade lawns, there may be brown areas because of extensive webworm feeding, necessitating control measures.”

“A well-kept lawn, fertilized and watered, may support a considerable population of webworms without serious damage,” Moore revealed. On the other hand, a shortly mowed, dry lawn may be quickly injured.

Careful inspection is required to detect the larvae, but some of the larvae can be flushed out if water from a garden hose is allowed to run on an infested spot of lawn.

According to Moore, DDT and dieldrin were among the most reliable materials used during 1962. Since it is necessary to apply the insecticide to the blades of grass, granular formulations are not recommended, and sprays take priority over dusts.

Moore concluded with the following recommendations: “DDT should be used at the rate of 2 lbs. per acre, or one gallon of the 25% emulsifiable concentrate for an acre; this equals 1 qt. per 10,000 sq. ft. Use 21/2 pints of the 1.5-lb.-per-gal. dieldrin emulsion concentrate per acre, or 10 oz. for 10,000 sq. ft. Use enough water, 100 gallons per acre or more, to thoroughly wet the grass, and then do not water the lawn for three days.”

“Leading pre-emergent materials for crabgrass control appear to be Daichal and Zytron,” Dr. Slife told the spraymen in his second speech. Daichal is recommended at 10 lbs. per acre, and Zytron at 15 lbs. per acre.

“Applications should be made about 2 weeks before expected crabgrass germination,” Dr. Slife recommended. Both Daichal and Zytron appear to lose their residue by fall, permitting fall seeding of turfgrass, if necessary.

During his discussion of new chemicals for pre-emergent crabgrass control, Dr. Slife noted that although trifluralin has given excellent control, low turf tolerance may bring homeowner complaints.

Calcium propyl arsonate works best when applications are made just before crabgrass germinates, Dr. Slife remarked. Control lasts only six to eight weeks, and seedling turfgrass has good tolerance to it.

Results have been variable, but generally good, with Diphenatrine, according to Dr. Slife. “Turf has good tolerance to it, and like most other pre-emergence crabgrass control chemicals, it works best when applied along with a good fertility program,” Dr. Slife conceded.

Dr. Slife concluded the conference with the warning that every sprayman must be on the lookout for any mistakes, since the threat of more and more restrictive legislation on the use of pesticides is very real.

W-22

WEEDS AND TURF Pest Control, April, 1963
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Know Your Species

**BUCKHORN PLANTAIN**  
(*Plantago lanceolata*)

**BROADLEAF PLANTAIN**  
(*Plantago major*)

Plantains are perennials, reproducing mainly by seed, but also by new shoots from the fibrous roots of some species. They are found on rich soils of lawns and meadows, although they will tolerate drier conditions of roadsides and waste areas. Except for Rugel plantain, which is native to North America, these weeds were introduced from Asia and are now widespread throughout North America. They are uniquely characterized by a basal rosette of longitudinally veined leaves and erect leafless stems bearing many tiny green flowers.

Broadleaf plantain, *Plantago major*, has a long slender spike atop the stem. Leaves are slightly hairy, almost oval, and are borne on long petioles (leaf stalks). Both leaves and stalks are dull green in color. Each tiny flower will bear 6 to 20 seeds, which are about \( \frac{1}{16} \) inch long, variable in shape, angular on one side, and with ridges radiating from a central scar. Seeds are shed from a capsule which opens by a lid.

Buckhorn plantain, *P. lanceolata*, also has a long stem but it terminates in a short, almost cylindrical spike of flowers. Leaves are elongate and slender (lanceolate) and only slightly hairy. Flower parts have dry margins which give the spike a light brown appearance. The filaments which bear the stamens (male portion containing pollen) are very long and can be seen persisting on the spike. Each flower capsule bears two glossy brown, boat-shaped seeds, about \( \frac{1}{4} \) inch long.

A third species, Rugel plantain, *P. rugelli*, is similar to broadleaf plantain except that Rugel is less hairy, more stout, with wavy indentations on the shiny green leaves, and has a purplish petiole.

2,4-D applied in spring or fall will eliminate any of the plantains. Repeated spot treatments may be necessary. Dichondra, St. Augustine grass, and clover may be injured by this treatment.

Prepared in cooperation with Crops Research Division, Agricultural Research Service, United States Department of Agriculture, Beltsville, Maryland.

**Japanese Beetle Shows Changes**

Japanese beetles in Connecticut are moving from good turf to rough turf, entomologist Raimon L. Beard reports. "There has been a sharp decline in the number of Japanese beetles in lawns and gardens, but more and more grubs are found in rough turf," Beard writes in the January issue of "Frontiers of Plant Science," publication of the Connecticut Agricultural Experiment Station.

Greater grub survival in rough grass areas probably results from natural selection, Beard suggests, whereby only individuals able to adapt to new surroundings survive to reproduce. "Japanese beetles have an amazing ability to adapt to changing environment," Beard notes.

Copies of "Frontiers of Plant Science," which include Beard's article, are available by writing Publications, Box 1106, New Haven 4, Conn.

**Ortho Expands Research Units**

New research facilities, including a biological laboratory, are being constructed at Tank Farm Hill, Richmond, Calif., for Ortho Division, California Chemical Co.

Planned complex of buildings is part of an expansion program begun during 1962 by Ortho Research & Development, and will supplement the central research facilities at Richmond headquarters, the firm reveals.

Ortho's new biological research lab will be 50' by 150', with two wings, one devoted to plant science and the other to entomology. To the rear of the main lab will be a 1,000 sq. ft. spray and incubator building and a 20' by 40' greenhouse, one of 6 greenhouses scheduled for completion at a later date.

**Weed Society Sets 1964 Meet**

Fifth Annual Conference of the Weed Society of America will be held at the Pick-Congress Hotel, Chicago, Ill., February 10-13, 1964, the public relations committee of that organization has confirmed.

More than 1,000 applicators, researchers, and education workers, representing colleges, chemical companies, weed control firms, public health and regulatory agencies, and others are expected to attend.
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EASY TO USE—Dyrene is a 50% wettable powder that provides a good suspension in water and is suitable for use in all common types of spray equipment. The formulation is dyed green to blend with the turf and eliminate the unsightly appearance of spray deposits on treated areas. Once dried, the dye does not stain shoes or fabrics. Dyrene will not harm spray equipment, clog nozzles or corrode metal parts of the sprayer.

ERADICANT OR PREVENTATIVE—Under normal weather conditions, Dyrene should be applied at the rate of 4 oz. per 1,000 sq. ft. every 7-10 days. During weather particularly favorable for disease, such as high temperature and humidity, Dyrene may be applied more frequently (5-7 day) or at higher dosages (6-8 ozs. per 1,000 sq. ft.) to keep disease under control with no injury to fine turf grasses. It is common for golf course and park superintendents on a Dyrene program to use 3-4 ozs. per 1,000 sq. ft. of turf on a 12-14 day schedule. This has resulted in disease-free turf all season. When using Dyrene strictly as an eradicant, use 6-8 ozs. per 1,000 sq. ft. for best results. For complete instructions read the label or send for folder DY7.

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