The control of weeds in lawns

G. A. Pearce
The Control of Weeds in Lawns

By G. A. PEARCE, B.Sc. (Agric.), Botanist, Weeds and Seeds Branch

During the summer, a fast-growing lawn with a deep green colour can usually be produced fairly easily by regular applications of nitrogenous fertilisers. Such a lawn should require mowing every seven to ten days, and thus little opportunity is given to new weeds to establish themselves. In fact during this time of the year, there are few annual weeds apart from crab grass which are a problem in home lawns or playing fields in this State, while perennial weeds are limited to white clover and flatweed.

In most cases, summer-growing weeds establish themselves either when the lawn is first planted or when the condition of the turf has deteriorated to a state where bare patches are common and the grass is making little growth. Crab grass makes vigorous growth early in the summer, particularly in bare areas, and this usually prevents the turf grass from growing over weak patches. Once established, crab grass is able to re-establish itself each summer, even in the most vigorous lawn, although the competition provided by such a turf will hold the weed growth in check.

The winter period provides different growing conditions for lawns and although it is possible to maintain the desired green appearance the rate of growth slows considerably. Because of this reduced competition, weeds are able to establish themselves more easily and for this reason a greater variety of weeds are found growing. The vigorous competition provided by weeds such as winter grass can stop the growth of the turf grass completely and any application of fertiliser usually results only in a stronger weed growth.

The need for selective weedkillers to control weeds in lawns has been realised for many years, and in the past chemicals such as sulphate of ammonia, copper sulphate and arsenic pentoxide have been widely used. With the development of so many new selective weedkillers during the last ten years, the use of these older chemicals has been largely superseded by...
more selective ones which have a greater effect on the weeds and are less harmful to the lawn grass.

In Western Australia the most important lawn weeds are crab grass and winter grass and until recently no weedkiller had given satisfactory control of these two weeds without discolouring the lawn grasses. During the coming summer disodium-methyl-arsonate (D.S.M.A.) should become available from commercial firms for the control of crab grass while chlorophenyl-dimethylurea (C.M.U.) for the control of winter grass is already being marketed.

The use of these and other chemicals is discussed later.

There are still some weeds found growing in lawns which cannot be controlled selectively with chemicals and among these should be included nut grass, sour grass, Guildford grass and various sedges. It is fortunate that apart from Guildford grass none of these weeds is widespread.

Guildford grass reproduces by the formation of seed and the development of new corms each year below the ground. Mowing regularly at weekly intervals will control Guildford grass by preventing the development of the corm and seeds but the leaf must be cut each time rather than rolled over. A rotary type mower is ideal for this purpose. In extreme cases where mowing is not practical, Guildford grass can be controlled by spraying with an oil such as kerosene or a mixture of kerosene and sump oil. This treatment discolours the lawn completely and to be effective should be applied six weeks after the general emergence of weed has taken place. A further application five to six weeks later is often required. Following treatment the turf usually remains dormant for the winter period but makes a complete recovery during the spring.

Table 1 shows the more common weeds found in lawns and Column 3 lists the chemicals which can be used for their control. The most effective chemical for each weed is listed first.

The proprietary lines listed in Table 2 are available in small packs suitable for home garden use from the distributors shown. The amount of chemical shown in Column 5 is sufficient to treat 150 square yards and should be dissolved in 4 gallons of water.

LAWN GRASSES

There are a number of grasses used for lawns and because of their different characteristics the problem of weeds is not the same in all types. Similarly the reactions of lawn grasses to chemical treatments differ considerably.

Buffalo Grass.

Buffalo is probably the most common grass used for household lawns mainly because it is less aggressive than most other types. The wide coarse leaves form a dense lawn which is easily kept from intruding into gardens and paths, while any unevenness in the surface of the turf is not so obvious.

Weeds find it difficult to become established in buffalo lawns and, when in good condition, it is probably the only lawn which can check the vigorous growth of weeds like crab grass.

Buffalo grass will not withstand continuous wear and this, along with its spongy nature, makes it unsuitable for playing-fields. During the summer when buffalo is growing actively, it is easily discoloured by the application of weedkillers so that several applications of a weak concentration of hormone-like weedkiller may be more desirable than a single application of a strong solution. For the same reason C.M.U. or C.I.P.C. should only be applied during the winter.

Couch Grass.

The majority of playing-fields and a large proportion of household lawns are grassed with couch which is able to withstand hard wear and at the same time provide a firm even playing surface. Couch reacts quickly to the application of nitrogenous fertilisers and regular waterings and so provides keen competition to weed growth. However, during the winter the rate of growth slows considerably and persistent weeds are able to establish themselves. Weeds such as winter grass are often well established by the spring and make it difficult for couch to make growth during this time of the
year and early summer, so that the use of chemical weedkillers is often of great benefit.

Couch grass is fairly tolerant to most selective weedkillers but is easily discoloured during the summer by the application of C.M.U. or C.I.P.C.

**Superfine Couch.**

This lawn grass was introduced commercially to Western Australia some years ago when it was widely publicised but experience has shown that it has some undesirable characteristics under local conditions. During the winter the loss of colour in superfine couch lawns makes the presence of weeds obvious while through the summer the lawn is easily scorched. Because of the fine appearance of the sward produced, any unevenness in the surface of the lawn is very noticeable. The spongy nature of this grass allows the mower to bite into the turf and remove a proportion of the green top growth leaving brown patches.

Superfine couch is related to the common couch grass and its susceptibility to chemicals is much the same.

**Bent and Kentucky Blue.**

These grasses are widely used in Melbourne for household lawns and under local conditions they are often planted in association with couch grass. The fine sward produced by them is very suitable for golf greens while their active growth during the winter is an added advantage. However, more frequent watering is required than with couch or buffalo during the summer.

They are more susceptible to hormone-like weedkillers than couch grass while because they make active growth at all times of the year, the use of C.M.U. or C.I.P.C. is not recommended.

**Kikuyu.**

Kikuyu lawns are often planted in areas where a shortage of water exists through the summer and under these circumstances this grass is very suitable. Under normal conditions, however, Kikuyu is not often favoured because of its habit of encroaching into gardens and paths. Weeds are not often a problem in these lawns and when they do appear selective weedkillers can be readily used.

**CHEMICALS**

Most garden plants are highly susceptible to weedkilling chemicals and care should always be taken to prevent the spray from drifting onto garden areas. Rain within eight hours of application
can reduce the effect of a chemical while windy conditions at the time of spraying can give uneven results. Even and complete coverage is important when spraying lawns and if the area to be treated is large, then marking into convenient strips with string is recommended. The action of selective weedkillers is usually slow so that lawns should not be cut for three weeks after spraying.

1. C.M.U. (Chloro-phenyl-dimethylurea).

This complex urea derivative should only be used on couch, superfine couch and buffalo grasses and then only during the winter months. When applied at the same rate during the summer, the lawn grass will be discoloured and the rate of growth retarded. C.M.U. is most effective against winter grass and annual clovers.

*Rate of Application.*—One ounce of 80 per cent. C.M.U. dissolved in 4 gallons of water is sufficient to treat 150 square yards. Frequent agitation is required to ensure that the C.M.U. does not settle.

This rate of application is effective against winter grass in the seedling stage but for large plants the rate should be increased to 1½ ounces per 150 square yards.

The action of C.M.U. is slow and little effect is seen for 10 to 14 days after treatment, while maximum results are only seen after three to four weeks. Because C.M.U. can accumulate in the soil no more than one spraying should be made within a period of six weeks.

2. D.N.O.C. (Sodium dinitro-ortho-cresylate).

This yellow dye is extremely safe to use because of the high tolerance grasses have for it. Capeweed, cotula and annual clovers are very susceptible but other broad-leaved weeds such as flatweed and onehunga weed are more resistant. A number of applications can be made, if necessary, at weekly intervals without damaging the lawn.

*Rate of Application.*—Six fluid ounces of 30 per cent. D.N.O.C. dissolved in 4 gallons of water is sufficient to treat 150 square yards. Better results are obtained if a teaspoonful of an activator such as sulphate of ammonia is added to each gallon of solution.


Chloro I.P.C. has given control of winter grass and annual clovers but the lawn grass is usually discoloured to some extent. Because of this discoloration and lower effectiveness the use of C.M.U. is preferred.
MAKE NO MISTAKE! All petrol-powered farm vehicles, cars, trucks, tractors and machinery run better and give greater economy on I.C.A. It's been proved the world over.

Can you afford not to use I.C.A?

I.C.A* IS THE PATENTED PETROL ADDITIVE THAT SAVES MONEY ON OVERHAULS


I.C.A PREVENTS MISFIRING DUE TO SPARK PLUG FOULING

If you look at a spark plug that has been used for a while, you'll find the electrodes and insulator coated with deposits. These deposits short-circuit and weaken the spark so that your engine loses power. I.C.A, by neutralizing deposits, keeps plugs working properly, makes them last longer.

I.C.A PREVENTS PRE-IGNITION CAUSED BY GLOWING DEPOSITS

As an engine is used, combustion deposits build up inside like soot in a chimney. These can sometimes glow and ignite the fuel before the spark plug can do so. This common form of pre-ignition robs your engine of its true power. I.C.A, by fire-proofing deposits, prevents this and saves you money on overhauls.

The Shell Company of Australia Limited

BOTH SHELL PETROLS HAVE I.C.A
No Lice, Keds, or Blowflies here!

They're being protected with...

SHELL

DIELDRIN CONCENTRATE (15%)

Sheepmen the length and breadth of the Country are using DIELDRIN CONCENTRATE (15%) to spray dip their sheep. When you use dieldrin for spray dipping you are sure of results! ... because all recommendations are based on actual field trials, supported by laboratory analysis. For your dieldrin supplies, contact your nearest Shell Chemical Agent.

Shell Chemical

(AUSTRALIA) PTY. LTD. (Inc. in Victoria)

Melbourne • Sydney • Brisbane • Adelaide • Perth • Hobart
An Associate of The Shell Co. of Aust. and registered user of its Trade Marks.

P. S. — mention the "Journal of Agriculture, W.A." when writing to advertisers
4. 2,4-D (2,4-Dichloro-phenoxy-acetic acid).

There are two common types of 2,4-D used for weed spraying, these are the amine and ester derivatives, and although the latter types are the more effective, some caution must be exercised when using them, because of their volatility. Where weeds growing near garden areas are to be sprayed, the use of the amine derivative is preferred while for areas such as bowling greens and playing-fields, the ester type can be used. Most broad leaved weeds are susceptible to 2,4-D.

Rate of Application.—Two fluid ounces of 50 per cent. 2,4-D amine or 40 per cent. 2,4-D ester dissolved in four gallons of water is sufficient to treat 150 square yards of lawn. A second application 10 days later may be required.

5. 2,4,5-T (2,4,5-Trichloro-phenoxy-acetic acid).

This hormone-like weedkiller is closely related to 2,4-D and in the past has proved most effective against woody plants. When applied to lawns 2,4,5-T has given good control of clovers and has proved superior to 2,4-D. However, it is not as effective as 2,4-D against other common lawn weeds and because of its volatility 2,4,5-T should only be used for the control of clovers some distance from garden areas.

Rate of Application.—For crab grass in the seedling stage 4 ounces of 75 per cent. D.S.M.A. dissolved in 4 gallons of water is sufficient to treat 150 square yards and a second application 7 days later is required. When the crab grass is past the seedling stage the rate of application should be increased to 6 ounces for each 150 square yards. The area to be treated should be watered the previous day so that the lawn can be left dry for 5 to 6 days after the chemical is applied.

Table 1.

THE MOST COMMON WEEDS FOUND IN LAWNS.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Clovers</td>
<td>Trifolium spp.</td>
<td>C.M.U. 2,4,5-T or 2,4-D</td>
<td>Autumn or winter</td>
</tr>
<tr>
<td>Capeweed</td>
<td>Cryptostemma calendula</td>
<td>D.N.O.C. or 2,4-D</td>
<td>Autumn or winter</td>
</tr>
<tr>
<td>Corkscrew or Wild geranium</td>
<td>Erodium spp.</td>
<td>2,4-D</td>
<td>Autumn or winter</td>
</tr>
<tr>
<td>Cotula or Mustard weed</td>
<td>Cotula australis</td>
<td>D.N.O.C. or 2,4-D</td>
<td>Autumn or winter</td>
</tr>
<tr>
<td>Crab grass</td>
<td>Digliria sanguinialis</td>
<td>D.S.M.A.</td>
<td>Early summer</td>
</tr>
<tr>
<td>Flatweed</td>
<td>Hypochoeris spp.</td>
<td>2,4-D</td>
<td>Winter or summer</td>
</tr>
<tr>
<td>Guildford grass</td>
<td>Romulea rosea</td>
<td>Resistant</td>
<td>Autumn or winter</td>
</tr>
<tr>
<td>Mosses</td>
<td></td>
<td>Mercurous chloride</td>
<td></td>
</tr>
<tr>
<td>Nut grass</td>
<td>Cyperus rotundus</td>
<td>Resistant</td>
<td>Autumn or winter</td>
</tr>
<tr>
<td>Onehunga</td>
<td>Soliva sessilis</td>
<td>2,4-D</td>
<td>Autumn or winter</td>
</tr>
<tr>
<td>Perennial clovers</td>
<td>Trifolium spp.</td>
<td>2,4,5-T or 2,4-D</td>
<td>Autumn or winter</td>
</tr>
<tr>
<td>Sour grass or Soursob</td>
<td>Oxalis spp.</td>
<td>Resistant</td>
<td>Winter or summer</td>
</tr>
<tr>
<td>Winter grass</td>
<td>Poa annua</td>
<td>C.M.U. or C.I.P.C.</td>
<td>Autumn or winter</td>
</tr>
</tbody>
</table>

Column 3 lists the chemicals which are effective, the first one shown being preferred.
7. **Mercurous Chloride.**

The standard treatment for the control of moss has been the application of a solution containing one ounce of potassium permanganate (Condy's crystals) and one ounce of copper sulphate (bluestone) dissolved in four gallons of water and applied at the rate of one gallon per square yard. Probably a more effective treatment, however, is the use of a solution containing one ounce of mercurous chloride (calomel) dissolved in two gallons of water and applied at the rate of one gallon per 15 square yards.

### Table 2. TABLE OF AVAILABLE CHEMICALS.

<table>
<thead>
<tr>
<th>Trade Name</th>
<th>Distributor</th>
<th>Type</th>
<th>Concentration</th>
<th>Quantities to 4 gals</th>
</tr>
</thead>
<tbody>
<tr>
<td>AK.100</td>
<td>Elder Smith &amp; Co. Ltd.</td>
<td>C.M.U.</td>
<td>30</td>
<td>1 oz.</td>
</tr>
<tr>
<td>Karmex W.</td>
<td>Westralian Farmers Ltd.</td>
<td>C.M.U.</td>
<td>30</td>
<td>1 oz.</td>
</tr>
<tr>
<td>Warners C.I.P.C.</td>
<td>(Butoxone)</td>
<td></td>
<td>50</td>
<td>2 fl. oz.</td>
</tr>
<tr>
<td>Nocweeds D.</td>
<td>Dawson Harrison Ltd.</td>
<td>D.N.O.C.</td>
<td>30</td>
<td>6 fl. oz.</td>
</tr>
<tr>
<td>Blue Cross 2,4-D ester</td>
<td>Agricultural Products Co.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clover Killer</td>
<td>David Gray &amp; Co. Ltd.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estex 40</td>
<td>Wilcox Mofflin Ltd.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lawn Weedkiller</td>
<td>Dawson Harrison Ltd.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nocweeds E</td>
<td>Lanes Pty. Ltd.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blue Cross 2,4-D amine</td>
<td>Agricultural Products Co.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hormex</td>
<td>Wilcox Mofflin Ltd.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nocweeds A.</td>
<td>Lanes Pty. Ltd.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blackberry Killer</td>
<td>Dawson Harrison Ltd.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Butoxone</td>
<td>Elder Smith &amp; Co. Ltd.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>David Gray's 2,4,5-T</td>
<td>Westralian Farmers Ltd.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nocweeds 2,4,5-T</td>
<td>David Gray &amp; Co. Ltd.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Super Trimex</td>
<td>Lanes Pty. Ltd.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The above distributors have indicated that the proprietary lines listed are available in small packs suitable for home garden use. Column 5 shows the amount of chemical which should be dissolved in four gallons of water to spray 150 square yards.
IN JUST SUCH AN EMERGENCY...

You'll remember the times when, after days of brilliant, hot, sunny weather—the sudden change—a falling glass and the weather reports telling of "Approaching Rain"... and how you've redoubled your efforts to get your crop in before it is laid flat.

In just such an emergency, you can pay your equipment no greater compliment than to supply it with Mobil Tractor Fuels—Mobilpower Kerosene (for spark ignition engines), which contains that most powerful of all chemical additives—Ci., or Mobil Distillate for Diesels.

Both Mobilpower Kerosene and Mobil Distillate have been specially refined to ensure that you obtain maximum engine efficiency... with utmost economy

Mobilpower Kerosene
Mobil Distillate

ALL DEPOTS AND AGENTS - VACUUM OIL COMPANY PTY. LTD.
See how much MORE you get for your money in Holden

In feature after feature — beauty, ease of handling, comfort, performance and economy — you get more for your money in Holden. Come along in. Drive Holden yourself — see for yourself just what these features mean to your family in value for money.

MORE room and comfort
There's roomy comfort in Holden's luxurious interior — even when you carry five passengers. And the spacious luggage compartment has ample room for all the gear you'll want to carry. The one-piece curved windscreen and wrap-around rear window give panoramic visibility.

MORE driving pleasure
The famous 21 h.p. 6 cylinder Holden engine makes light of any country and reduces gear changing to a minimum. And Holden gives you a wonderful sense of security and stability on corners, loose gravel and rough roads.

MORE economy
Low first cost, proven operating economy together with an enviable reputation for dependability, all contribute to the low cost motoring you will experience when you choose Holden. Also, factory-guaranteed parts are available throughout Australia.

MORE resale value
Because of its phenomenal popularity Holden retains a consistently high resale value. This high resale value protects your investment right through the time of your ownership, and it saves you a lot of money when the time comes to buy again.

Don't just look at Holden ... be the guest of your Holden Dealer ... and drive it:

HOLDEN

AUSTRALIA'S OWN CAR

From £910 plus tax

Convenient GMAC hire purchase arrangements are available.

"Air Chief" is the radio approved by GMH for Holden.

GENERAL MOTORS-HOLDEN'S LTD.

BRISBANE • SYDNEY • MELBOURNE • ADELAIDE • PERTH

Sold and serviced by Holden Dealers throughout Australia

Please mention the "Journal of Agriculture, W.A.," when writing to advertisers