1-1-1963

Progress in the control of cotton fireweed

Geoffrey A. Pearce

Follow this and additional works at: https://researchlibrary.agric.wa.gov.au/journal_agriculture4

Part of the Plant Biology Commons, Sustainability Commons, and the Weed Science Commons

Recommended Citation

Available at: https://researchlibrary.agric.wa.gov.au/journal_agriculture4/vol4/iss2/3

This article is brought to you for free and open access by Research Library. It has been accepted for inclusion in Journal of the Department of Agriculture, Western Australia, Series 4 by an authorized administrator of Research Library. For more information, please contact jennifer.heathcote@agric.wa.gov.au, sandra.papenfus@agric.wa.gov.au, paul.orange@dpird.wa.gov.au.
IMPORTANT DISCLAIMER

This document has been obtained from DAFWA's research library website (researchlibrary.agric.wa.gov.au) which hosts DAFWA's archival research publications. Although reasonable care was taken to make the information in the document accurate at the time it was first published, DAFWA does not make any representations or warranties about its accuracy, reliability, currency, completeness or suitability for any particular purpose. It may be out of date, inaccurate or misleading or conflict with current laws, polices or practices. DAFWA has not reviewed or revised the information before making the document available from its research library website. Before using the information, you should carefully evaluate its accuracy, currency, completeness and relevance for your purposes. We recommend you also search for more recent information on DAFWA's research library website, DAFWA's main website (https://www.agric.wa.gov.au) and other appropriate websites and sources.

Information in, or referred to in, documents on DAFWA's research library website is not tailored to the circumstances of individual farms, people or businesses, and does not constitute legal, business, scientific, agricultural or farm management advice. We recommend before making any significant decisions, you obtain advice from appropriate professionals who have taken into account your individual circumstances and objectives.

The Chief Executive Officer of the Department of Agriculture and Food and the State of Western Australia and their employees and agents (collectively and individually referred to below as DAFWA) accept no liability whatsoever, by reason of negligence or otherwise, arising from any use or release of information in, or referred to in, this document, or any error, inaccuracy or omission in the information.
Cotton fireweed, a native perennial plant, has become a serious weed in the south coastal districts and is now one of the most widespread weeds in the State.

- It is not palatable to stock and sheep avoid grazing amongst it.
- It responds readily to phosphate and nitrogen, and competes strongly with pasture plants.
- It is resistant to herbicides at economical rates of application.

Department of Agriculture trials during the past two years have shown that a cultural programme properly carried out will give good control.

Cotton Fireweed (*Erechtites quadriden-tata*) is native to Western Australia and was first collected by Drummond before 1850. In its natural habitat it is quite insignificant and passes unnoticed.

Fireweed is a shallow-rooted perennial, which may grow as an annual under dry conditions. The plant is bushy and compact and grows two to three feet high. It has a greyish appearance due to the presence of hairs on the leaves and is often referred to as "grey bush."

The plant produces numerous seeds, each of which has a silky pappus, enabling it to be carried by the wind over long distances. This means that there is always a large seed population ready to germinate when conditions become favourable.

It has been suggested that cotton fireweed was introduced into the south coastal areas with clover seed or superphosphate. However this is not likely, as the weed does not occur in the areas where clover seed was harvested during those years. Nor is it known to grow in the vicinity of fertiliser works.

**SIGNIFICANCE**

Cotton fireweed has spread rapidly during the past 10 years, and there is no reason to suggest that more highly developed pastures will crowd it out. Although light soils are by far the worst affected, infestations are quite common in heavy soils, including mort clay.
Fireweed is a major problem in all the new districts of the south coastal areas from Esperance to Albany and northwards to Lake Grace, and Newdegate. Scattered plants have been found in many districts outside this area. Substantial summer rains which occur from November to April along the south coast provide ideal growing conditions for this perennial weed.

Cotton fireweed stands usually become dense in the year following a crop. This is because the loose soil and cover of the stubble produce favourable conditions for seed germination. Old established pasture paddocks may remain relatively free of the weed for many years, but the position is usually worsened after the ground has been worked.

The weed is seldom a problem in a cereal crop. Some difficulty may be experienced with the cultural operations undertaken in planting a crop due to the blocking of the implements. However, these cultivations usually ensure a weed free crop. Germination of cotton fireweed seed occurs during the spring and autumn when soil temperatures are favourable. However, fireweed appears to be able to germinate
Although cotton fireweed stands usually become very dense the year following a crop, old pasture paddocks often carry scattered plants for many years without becoming a serious problem under a fairly wide range of conditions and general germinations often follow summer rain.

Established plants, with their shallow root system, make quick active growth after any rain. This means that the weed can make active growth during most times of the year and is well established before annual pasture plants germinate with the break of the season.

Trials at Ongerup have shown that even perennials such as sorghum almum and lucerne have little effect on this weed. The response of fireweed to superphosphate is spectacular. Numerous fertiliser trials bear striking evidence to the fact that not only do the plants grow bigger, but phosphate even appears necessary to produce a heavy stand. Moreover, topper strips are quite common in fireweed infestations.

Many farmers are under the impression that cotton fireweed has little effect on pasture production. However, it is most unlikely that a plant which has such an extensive root system and produces such
a large bulk of material in such a short time would not have a high nutrient requirement. This mistaken idea is probably due to the fact that sheep avoid grazing in heavy stands. These areas then appear to have just as much feed present as the less infested areas where the sheep spend most of their time.

Some prominence has been given to a native caterpillar, which readily eats the plant. Although areas as large as 50 acres have been killed out by the parasite, little hope is held for it being effective over extensive areas.

Cultural Programme

As cotton fireweed is readily killed by careful cultivation, the main problem is to prevent the re-infestation of an area after such a treatment.

The following programme has been used to control fireweed over an area of 400 acres at the Newdegate Demonstration Farm. The same operation has proved effective on a much smaller area at Ongerup.

Both infestations consisted of established plants.

1. In the autumn, and at least eight weeks before likely opening rains, the area should be burnt. This overcomes the problem of implements becoming choked with the weed, and also weakens the plant roots by inducing new growth.

2. Some weeks after burning, or when general regrowth has occurred, the area should be ploughed, preferably with a disc implement. If the plants are not completely removed from the ground, a further...
working is necessary to avoid re-growth. It is important that this operation be undertaken before any germination of pasture plants has occurred so that a satisfactory winter pasture can be maintained.

3. A good pasture should then be established; this is essential for control of the weed. If there is not likely to be enough seed present in the soil to produce a good subterranean clover pasture the area should be sown with 6 to 8 lb. of an appropriate strain. A reasonable dressing of superphosphate (at least 150 lb. per acre) must be applied. If the quantity of super is limited the rate of application on other heavily infested areas should be reduced to a maintenance level to enable this to be done.

4. The area should not be stocked during the early part of the winter, but once the pasture has made good growth, say about the beginning of August, a heavy stocking rate should be used. If from four to six sheep an acre are run on the area the soil will be compacted, and with the added effect of the rain this will greatly reduce the likelihood of the weed seeds germinating during the spring.

This programme can be applied to a paddock whether it is in pasture or stubble. The value of the method in districts with a higher summer rainfall, such as at Esperance, remains to be shown. Greater difficulty would be expected due to the higher incidence of summer and autumn rain.

**IN BRIEF**

1. Cotton fireweed, a native plant, is now one of the most widespread weeds in the State. It is mostly confined to the south coastal districts.

2. Trials have shown that a chemical method of control is not economical.

3. The application of a cultural programme involving burning, dry ploughing, an adequate phosphate dressing and heavy stocking has given good control.

4. Careful cultivation to completely kill all growing plants is essential. The programme can be applied to a paddock in pasture or stubble.

---

**FOR . . . LYSAGHT**

Get in touch with **DALGGETY-N.Z.L.**

**LYSAGHT DISTRIBUTORS**

---

Journal of Agruculture Vol 4 No 2, 1963
This low cost LYSAGHT GRAIN AUGER fills your silos cheaper than ever before.

It will pay you immediate and lasting dividends to investigate this new Auger, especially developed for use with Lysaght Silos. With oats particularly, the Auger is faster and more economical than bag handling. Operates by flat belt drive from tractor — and the tractor is very easily positioned. Easily assembled!

**AUGER SELECTION TABLE**

<table>
<thead>
<tr>
<th>SILO ERECTED</th>
<th>SILO CAPACITY IN BUSHELS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1,200</td>
</tr>
<tr>
<td>Without Earth Ring</td>
<td>21 ft</td>
</tr>
<tr>
<td>With Earth Ring</td>
<td>21 ft</td>
</tr>
</tbody>
</table>

**3 POPULAR SIZES**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>21 FT</td>
<td>£105</td>
<td></td>
</tr>
<tr>
<td>26 FT</td>
<td>£119</td>
<td></td>
</tr>
<tr>
<td>31 FT</td>
<td>£125</td>
<td></td>
</tr>
</tbody>
</table>

(SUPPLIED COMPLETE WITH 8 BUSHEL BUILT-IN HOPPER)

**FEATURES**

- Suits all Lysaght Silos in the 1,200 b. to 3,700 b. range.
- No maintenance — all bearings sealed.
- Flat Belt Drive . . . pulley supplied.
- Complete ready for attachment of belt . . . guide rollers for belt provided.
- Designed to fill Silo from centre of roof — enabling maximum capacity to be obtained.
- Exceptionally easy to assemble and erect.
- Chute tubes are telescopic; cleaning doors provided in hopper.

JOHN LYSAGHT (AUSTRALIA) LIMITED

8 Pakenham Street, Fremantle

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