Cotton fireweed : a native weed menace

G R W Meadly

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

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

Recommended Citation

Available at: https://researchlibrary.agric.wa.gov.au/journal_agriculture4/vol2/iss9/19
COTTON FIREWEED—A NATIVE WEED MENACE

By G. R. W. MEADLY, Officer in Charge, Weeds and Seeds Branch

INTRODUCED plants have provided most of our weed problems. Cape tulip, double gee and soursoob come from South Africa, Saffron thistle, Paterson's curse, wild turnip and wild radish from Europe, mesquite from the southern United States and Bathurst burr from South America. The relatively few native plants which have become troublesome weeds include Afghan thistle and Sarsaparilla.

Another native plant which has gained unfavourable notoriety during the past two or three years is Erechites quadridentata which, fortunately, has the more acceptable common name of cotton fireweed.

Cotton fireweed is a perennial species found naturally over an extensive area in temperate Australia and New Zealand, including the southern part of Western Australia. Although usually insignificant until the land is cleared, it then tends to multiply rapidly and dominate pastures, particularly in their early stages of development.

It is mainly a problem on lighter soils but does occur on some heavy land. The largest infestations are in the Jerramongup-Borden-Many Peaks area.

Clearing is often followed by a general increase in weed growth, which may include some native plants. Usually after cropping and establishment of pastures, however, these tend to become reduced. This has been the experience in some districts with cotton fireweed. For example, at the Esperance Research Station, it appeared in quantity some years ago, but has decreased in significance as the pastures have developed.
But in the Ongerup-Jerramongup area in particular, cotton fireweed is not following this pattern, and is increasing rather than decreasing in extent.

The rapid increase during the past two years can be attributed in part to favourable seasons, especially during the summer, but it is obvious that this tract of country is so well suited to the growth of the weed that we cannot rely on a natural decline and must look for some more positive control measure. A number of War Service Land Settlement properties are among the worst affected.

Cotton fireweed is a rather shallow rooted perennial which, under some conditions, may also grow as an annual or biennial. It is a rather compact plant, growing to a height of from two or four feet. The hairs on the narrow leaves and stems give it a generally grey appearance.

Numerous relatively small yellow, daisy-like flower heads are formed in a panicle. Each head gives rise to many seeds, with a pappus (or parachute attachment) which enables them to be carried long distances by the wind.

Officers of the Department of Agriculture and War Service Land Settlement have discussed the problem with settlers in the affected areas and possible control measures are being investigated. Trials include various rotations involving cultivation, cropping and pasture establishment, along with mowing, burning and the use of chemicals.

These are mainly long term treatments and, at this early stage, little information from them can be expected.

It is already obvious, however, that cotton fireweed is relatively resistant to chemicals, which have not given control at rates economical for large areas.

THE WILUNA GROUND WATER RESEARCH STATION

By D. G. WILCOX, Adviser, North-West Division, Wiluna

UNDERGROUND waters are cheap irrigation supplies. They don't need costly dams and diversion works for their exploitation, because they are available right at the farm site. And since they are stored underground they are not subject to evaporative losses, which can be over six feet a year in surface dams.

The Wiluna Ground Water Research station will use this type of water, from deposits very close to the old mining town. It will be one of the first irrigation stations in Australia using underground water.

While Wiluna has always been noted for its good water supply, irrigation supplies have not been suspected in other parts of inland Western Australia. However, a recent survey by the C.S.I.R.O., of an area around Meekatharra and Wiluna has indicated that water in sufficient quantities for irrigation is available over very wide areas. In fact their study has indicated that the Wiluna basin is really quite a minor one compared to some of the others located during the survey.

It will be the aim of the Wiluna Research Station to try to find means of exploiting this water to the best possible advantage.

EXISTING GRAZING INDUSTRIES

Probably the most immediately rewarding investigations will be those which will bolster up the existing sheep and cattle industry. This industry often suffers through periods of severe drought when sheep and cattle losses are high. Supplementary feeding for survival during periods of stress can help to avoid these often catastrophic losses. A very few properties have their own irrigation patches where these supplementary feeds are grown. It will be one of the tasks of the new station to improve on the production methods used, to inquire into new varieties which could be grown, and to develop feeding techniques for the best use of fodder, as well as to foster and encourage station owners to undertake their own irrigation schemes.
Mr. Wilcox inspects the outlet of part of an underground water supply which has been used to grow 20 acres of lucerne on a station in the Wiluna district. Hay produced here provides supplementary feed for sheep on inland stations. Country in the background is typical of that on which the new research station will be established.

Most of the research work into supplementary feeding under desert range conditions has been along the lines of feeding for survival. There is a whole field of research into the feeding of sheep for maximum wool production, at all times, in the feeding of lambs and weaners for maximum development, in the feeding of pregnant ewes, and the fattening of cattle, which needs to be developed. We hope to be able to use some of the production from our irrigation trials in field experiments on these aspects of sheep and cattle management in arid areas.

**COMMERCIAL CROPS**

Investigations of a long term nature on the research station involve the examination of commercial crops. Already, peanuts and cotton have given promising yields and it is hoped that this line of work will extend to embrace crops such as castor oil, tobacco, dates and citrus fruits. This phase of the activities of the station will be concerned with testing types of crops and varieties in the early stages, and it is not expected that much will come of it for some years.

The indications are that the water supplies available are large enough to support some form of commercial cropping without endangering the demands of the sheep and cattle stations.

**NATIVE PLANTS**

Along-side these more or less expected lines of research we hope to be able to commence a study of the native plants of the area. The task of developing a proper grazing management scheme for pastoralists to follow has always been made difficult by the haphazard rainfall which limits the growth of the plants. It often takes years of intermittent growth before a plant matures. At the research station we hope to overcome these delays by growing the native plants under ideal conditions so that their various features can be recognised in a short time, then incorporated in range management trials.

With a plant introduction section, this part of the programme could develop into a major research project, the results of which could serve to assist workers in similar vegetation zones in Australia.

We hope that the programme which we will undertake at the Research Station will be well balanced. It covers the present and presumed demands of the existing industry and it provides for the development of a new industry based on commercial cropping.

Whatever industry proves most rewarding, it will be because of the exploitation of a new resource in inland Western Australia, its ground water.
DESPITE differences in environment, dairy farmers all over the world are familiar with certain common ailments in their cattle. Calving troubles, infertility, mastitis, calf scours and metabolic disorders are found in all dairying districts.

The best known of the metabolic disease group is of course milk fever, which, before the advent of calcium treatment, was the No. 1 killer of freshly calved dairy cows.

Rather less prevalent but of extreme importance to the farmer endeavouring to maintain milk production, often under difficult conditions, is acetonemia.

Acetonemia has been recognised and accepted by farmers for many years as a vague type of condition which rarely causes death. Each year, and especially during the summer, a number of the best cows in a herd would become affected, and in some dairies even first-calf heifers might show symptoms of the disease.

The incidence of acetonemia rises sharply in December and remains quite high until March. About 90 per cent. of cases occur within the first six weeks after calving.

**Symptoms:**

In a typical case, a cow which has been milking well is suddenly noticed to be dull and without appetite and the milk yield falls quite markedly. Body condition is rapidly lost and affected animals appear to be weak and walk in a stiff, slow manner.

Constipation is common. There is however, no rise in the temperature of an affected animal.

In a few cases nervous symptoms are seen, the commonest of these being grinding of the teeth and sucking of the tongue. If left untreated, the cow slowly recovers her appetite after about two weeks, but only rarely does milk production return to its former high level.

In attempts to diagnose the disease, acetone testing tablets are useful, especially in cows showing little else than a sharp drop in the milk supply and a loss of appetite and condition. Farmers who have had some experience with the disease often become quite adept in detecting the characteristic, sweetish smell of acetone in the breath and in the milk.

In few diseases has such an extensive repertoire of drugs been lavished on ailing cows in attempts to bring them back to normal health and production.

The modern veterinary approach to Acetonemia usually relies on hormones such as A.C.T.H. and cortisone; these are undoubtedly efficient but are very costly at adequate dosage levels. Other useful treatments involve daily subcutaneous injections of glucose, followed by drenching the cow with glycerine.

Yet another helpful drug is cobalt, which is known to simulate the rumen bacteria, and thus indirectly reactivates the animal's appetite. The old-fashioned mixture of ammonium carbonate and nux vomica is still used to achieve a similar effect.

Most cases of Acetonemia occur soon after calving, and it is common practice to bring them straight in from a dry paddock at this time.

I suggest that the sudden change from such a paddock environment to bale feeding places an unnecessary stress on the freshly calved cow. It is far better to feed concentrates and some green feed, if this is available, for at least two weeks before the due date of calving. This procedure will allow the rumen bacteria to adjust to the change of diet.

I would also urge that concentrates be fed at high levels during the first six weeks after calving.

If these straight-forward management and feeding practices are carried out conscientiously, not only will the incidence of acetonemia in the herd be reduced, but increased milk production can be assured.