5-1956

Weeds of Western Australia - The thornapples (Datua species)

G. R. W. Meadly

Follow this and additional works at: https://researchlibrary.agric.wa.gov.au/journal_agriculture3

Recommended Citation
Available at: https://researchlibrary.agric.wa.gov.au/journal_agriculture3/vol5/iss3/8

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 3 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.
The name thornapple is applied to several related species of *Datura*, a genus which belongs to the same family as the tomato, potato and tobacco. Thornapple is favoured by soils that are moist during the summer. The plants are toxic, the seeds being the most harmful part.
THE THORNAPPLES
(Datura species)

The name Thornapple is applied to several related species of Datura, a genus belonging to the same family as a number of plants cultivated either for ornament or their commercial value. Among the garden subjects are the petunia, cestrum and schizanthus, while the potato, tomato, capsicum and tobacco are also well known members. The trumpet-flowered shrub referred to by some nurserymen as Brugmansia is D. arborea and a smaller plant, D. metel is also grown in gardens.

Besides these two, five other species of Datura occur in Western Australia, one D. Leichhardtii, is native to the North-West, being found on the flats of the Gascoyne, Minilya and Ashburton Rivers, the remaining four, D. stramonium, D. tatula, D. ferox and D. meteloides are introduced plants which have become troublesome weeds in some localities. Their country of origin and method of introduction are not known with certainty. It is safe to say, however, that their natural habitat is tropical and includes India and the Americas. The presence of Datura seeds in bird seeds and summer crop seeds such as maize and Sudan grass, suggests a likely method of introduction. Packing material may also have been responsible.

The Thornapples now occur in all States of Australia but are most prevalent in New South Wales and Queensland in association with summer rains. This is understandable with summer-growing annuals favoured by warm, moist conditions. In Western Australia they are widely scattered, the species collectively being recorded from localities ranging from the Eastern Goldfields to the metropolitan area and Shark Bay to Albany.

DESCRIPTION
The common name is derived from the large fruit which has somewhat the shape of an apple and is covered with spines which vary in number and size according to the species. The differences between the four weed species are mainly related to the shape of the leaves, the size and shape of the fruit along with the type of spines and the disposition of the fruit. It may be either erect or drooping. The illustrations demonstrate these variations. The following brief description of D. stramonium, along with the plates will assist in the identification of the weed species.

The plant is an almost hairless, erect, annual reaching three feet in height. The leaves are pointed-ovate up to six inches in length, with wavy margins and small points at distant intervals. The white funnel-shaped flowers are 3-4 inches long on short stalks which remain erect after the fruits have been formed. The fruit is ovoid, 1½-2 inches long and covered with prominent prickles. It contains many somewhat wrinkled kidney-shaped seeds about ½in. in length.
Fig. 1.—COMMON THORN APPLE (Datura stramonium L.): A—Habit; B—Fruit in longitudinal section; C—Fruit; D—Transverse section of fruit; E—Seeds (enlarged).

(From a pen drawing by the Government Botanist, Mr. C. A. Gardner.)
Selective Weedicides

- For the Control and/or Eradication of Weeds in Cereal Crops and Pastures

50% 2,4D amine 68/9 Per Gallon
40% Ethyl Ester 70/- Per Gallon

- Available in quantities from 4 to 44 gallons upwards
- Prompt Delivery of any quantity required

Formulated and Distributed in W.A. by...

CHEMEX PRODUCTS

97 St George's Tce.—PERTH. Phone B 2208 or MJ 1556

Manufacturers of:
OVEX Sheep Lick — — BOVEX Cattle Lick
Above every acre of land there floats an estimated 37,500 tons of free or atmospheric nitrogen. In this form it is worthless to your plants. But with the help of legume crops that have been inoculated with Nodulaid this nitrogen can be converted into a form easily absorbed by all plant life. Results show that Nodulaid-inoculated legume crops can add more than 100lb. of nitrogen to every acre of your soil under average conditions. This is more nitrogen than you get out of nearly 5 cwt's. of Sulphate of Ammonia, worth £10.

If Nodulaid is not available from your local seed merchant contact your State Distributor. He will be glad to help you.

A PRODUCT OF AGRICULTURAL LABORATORIES PTY. LTD.
Carlingford Road, Sefton, N.S.W.

Distributed by:

N.S.W. and QUEENSLAND: Eggins Foster Pty. Ltd.
194 Sussex Street, Sydney.

S.A.: M. F. Hodge & Son Limited.
23 Grenfell Street, Adelaide

VIC.: F. H. Brunning Pty. Ltd.
22 Hanna Street, South Melbourne.

111-113 St George’s Terrace, Perth.

TO EVERY FARMER USING . . .

NODULAILD

. . . DRY POWDER LEGUME INOCULANT
Fig. 2.—FRUITS OF DATURA SPECIES: A—Datura ferox L.; B—D. stramonium L.; C—D. metel L.;
D—D. Leichhardtii F. Muell.
(From a pen drawing by the Government Botanist, Mr. C. A. Gardner.)
Fig. 3.—LEAVES OF DATURA SPECIES: A—*Datura metel* L.; B—*D. ferox* L.; C—*stramonium* L.; D—*D. Leichhardtii* F. Muell.

(From a pen drawing by the Government Botanist, Mr. C. A. Gardner.)
SIGNIFICANCE

Being summer-growing annuals, Thornapples are usually found on land that is naturally moist or irrigated during the summer. They are often associated with shallow watercourses, depressions and fallowed land and grow vigorously on flats near Kalgoorlie if moisture is retained during the warm weather.

They compete with crop plants for moisture as well as soil nutrients and the broad, spreading leaves often have a severe shading effect. The toxicity of the plants, particularly the seeds, however, is the most undesirable feature. In very early times medicinal properties were attributed to the plants and Sanscrit writers described them as being beneficial for many ailments including mental derangements, fever, skin diseases and tumours. A pill made from the pounded seeds was placed in a tooth decayed to relieve toothache and the leaves, when smoked, were claimed to be beneficial for asthma.

The alkaloids hyoscyamine, atropine and hyoscine have been obtained from *D. stramonium* and no doubt comprise the toxic principle. There have been cases of poisoning of humans, particularly children, as a result of eating the seeds, some with fatal results. Losses of animals attributed to Thornapples, however, are relatively few. They tend to avoid the plants when grazing, possible because of the disagreeable odour and unpleasant flavour. The risk is probably greatest with contaminated chaff, hay or ensilage, especially if it contains seeds of the weed. Toxic aspects are dealt with fully by C. A. Gardner and H. W. Bennetts—Poison Plants of Western Australia, The Thornapples—Journal of Agriculture of Western Australia Vol. 2. March-April, 1953.

CONTROL

As already mentioned, seeds of Thornapple occur from time to time in seeds imported for both sowing and feeding to birds. The risk of contamination is greatest in the case of summer crops such as Sudan grass, maize, sorghums and sunflower. A close inspection of such lines is carried out before they are distributed and in recent years the quality of imported seed has improved considerably. The dark, kidney-shaped seeds can be detected quite readily with the naked eye.

When plants are located, measures should be taken to prevent seeding. Odd plants can be hand-pulled or hoed, making sure not to scatter seeds from ripe capsules and to destroy by burning, all plants bearing seeds. More extensive infestations should be ploughed before the plants have flowered. Thornapple seeds will retain their vitality for many years, thus necessitating inspections for some time after the last seed bearing plant has been destroyed. Although relatively resistant to the growth-regulating or hormone-like chemicals, Thornapples can be killed by spraying with a solution containing one pound of sodium chlorate in two gallons of water.

FARMERS

This is YOUR Journal, and it has been written, edited and presented in a sincere endeavour to give you helpful information in an interesting manner.

We would like to have your views on the Journal—to know whether you like it or whether you don’t. Drop a line to the editor and tell him the features you like and don’t like in this issue—or the features you hope to see in future issues.
GRUBBING
TREES AND STUMPS
and doing speedily what is otherwise slow and laborious work

Tremendous power exerted by
The Monkey Grubber
tears them quickly and cleanly from the earth with roots intact. A thorough and
workmanlike job, and the unrivalled method of dealing with your timbered land.
A GRUBBING MACHINE equipped with cable of correct length, size and weight for
ease of handling and embodying such features as multiple speeds, automatic releasing
gear, rope shortener, snatch block, and simple sturdy rope couplings.
Each one a time saver and a labour saver, and to which the effectiveness gained by
portability and ease of operation must be added.

With the MONKEY GRUBBER a day's work can be done in an hour.
It will surely be to your advantage to know about it from

THE JACK PEOPLE
TREWHELLA BROS. Pty. Ltd.
TRENTHAM, VIC.
W.A. Stockists: HARRIS SCARFE & SANDOVERS LTD.
McLEAN BROS. & RIGG LTD. CO-OPERATIVE WHOLESALE SERVICES LTD.
J. & W. BATEMAN LTD. THE BAIRDS CO. LTD. McPHERSON'S LTD.

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