Landcare Notes

Great Mullein

Department of Primary Industries

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Common and scientific names

Great mullein, Aaron's rod, blanket weed

Verbascum thapsus Linnaeus

Family Scrophulariaceae (Foxglove and snapdragon family)

Origin and distribution

Native to Europe and to western and central Asia, but now occurring in most temperate areas of the world. It was introduced to Australia as a garden plant and is also naturalised in Tasmania, New South Wales, Queensland, South Australia and Western Australia. It is widespread in Victoria, particularly in the Western District (mainly inland), central Victoria, the North East, Port Phillip and Westernport regions and East Gippsland.

Great mullein favours dry, well-drained sites, often in disturbed areas on hillsides. It is frequently found on shallow soils with low fertility and high pH, overlying rocks and on limestone soils, in areas with greater than 500 mm annual rainfall. Great mullein occurs on lands that were formerly cultivated, pastures, native grasslands, roadsides, railway easements, the margins of watercourses and in neglected areas.

Description and lifecycle

An erect biennial herb 0.5 to 2.5 m high, commonly 1 to 2 m, forming a basal rosette up to 60 cm in diameter in the first year and producing a single upright flowering stem in the second year.

Stems – single, erect, densely covered with woolly white hairs. Branches from the upper leaf axils are sometimes present.

Leaves – grey-green to whitish or yellowish, densely covered with matted layers of white star-shaped hairs giving a woolly appearance and prominently veined on the underside; lower leaves, 8 to 50 cm long, 2.5 to 14 cm wide, ovate to elliptical, with a short, winged stalk and a blunt pointed apex and forming a rosette close to the ground; stem leaves to 30 cm long, becoming smaller up the stem, stalkless, with a winged extension onto the stem.

Flowers – November to March; yellow, 15 to 30 mm in diameter, 12-18 mm long , densely arranged in groups of 2 to 7 on 1 to 5 mm long stalks in the axils of small bracts off the upright spike, and totalling up to several hundred per spike; 5 fused petals, 5 sepals, 5 stamens. The sepals are 6 to 12 mm long and the corolla (joined petals) is hairy on the outside. The upper 3 stamens have short, white, woolly filaments, the lower 2 have longer, hairless filaments. The lowest flowers on the stem mature first.

Figure 1. Great mullein.

Fruit - an ovoid to globose, hairy capsule, 7 to 10 mm long, with a short stalk. Green when young, brown when dry, splitting into 2 valves when mature.

Seeds – up to 600 per capsule, reddish brown, pitted and ridged, less than 1 mm long, 5 or 6 sided, rod-shaped with one pointed end.

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Roots – long, stout taproot. Great mullein is mainly a biennial but can become a short-lived perennial. Seeds germinate in spring and autumn and seedlings develop to form a large rosette by summer. Flowering mainly occurs from January to March. The flowers open in the early morning and close by mid afternoon.They self-pollinate if cross-pollination does not occur. Plants die in autumn but the dry stems can remain standing for several months.

Figure 2. Flowers of great mullein.

Figure 3. Rosette of great mullein.

Similar species

There are three other *Verbascum* species in Victoria, all introduced. *Verbascum virgatum*, twiggy mullein, is less robust than great mullein, has leaves that are more elongate, are dark green, with scalloped margins and lack the dense covering of soft whitish hairs. The stalks of the flowers and seed pods are usually 2 to 5 mm long. It is a common weed in much of Victoria south of Echuca and Horsham. *V. blattaria*, moth mullein, also has green leaves that lack hairs or are sparsely hairy but has basal leaves that are lobed or toothed and flowers on stalks 10 to 25 mm long. It is locally common in the North East and uncommon in other parts of southern and eastern Victoria. Unlike the other three naturalised *Verbascum* species, *V. creticum*, Cretan mullein, has serrated bracts and sepals, and only 4 stamens, and is known from few widely scattered localities mainly in southern Victoria.

Figure 4. Dense infestation of great mullein.

Properties

Great mullein is suspected of being poisonous, but in pastures is rarely eaten by livestock. Seeds have long term viability and have been claimed to survive in soil for several hundred years.

Numerous medicinal properties have been attributed to the plant which has provided various traditional folk remedies and treatments. The petals and stamens are collected for use in medicine. The leaves have been used as lamp wicks, insoles for footwear and a source of mucilage for smoking. The flowers have provided a source of yellow dye.

Dispersal

The seeds have no special adaptation for dispersal but can contaminate a wide range of materials. They mainly fall within a short distance of the plant.

Management program

Some control methods described in this note are only effective if used in combination with other control options as part of a long-term management program.

If used in isolation, these methods do not effectively

All land managers have a responsibility to control weeds on their property.

destroy the plant, allowing it to re-shoot or continue to grow. Authorised officers from DPI or DSE may direct landowners to undertake specific control activities to ensure methods are used that are capable of destroying plants and preventing their spread.

Where directed to do so, landowners must use the method or methods as directed by the authorised officer. In most cases the landowner will be able to choose from a variety of options appropriate for use in their particular situation.

Pasture management

Great mullein occupies sites with low soil fertility and does not persist when fertility is raised. Improvement of soil fertility and pasture improvement are the preferred control methods on grazing land. The plant is rarely eaten by livestock so is encouraged by heavy grazing.

Manual control

Isolated plants and small patches should be grubbed when the ground is soft or dug out with a mattock, making sure to remove as much of the taproot as possible.

Mechanical control

Repeated mowing or slashing in late spring or summer before flowering will prevent seeding but will not kill the rosette. If germination of new plants is prevented, repeated slashing before flowering for a number of years may eliminate infestations.

Cultivation

Dense patches can be cultivated to a depth that ensures the taproot is severed. Repeat cultivations are necessary to control seedling growth.

Chemical information

The Australian Pesticides & Veterinary Medicine Authority (APVMA) is responsible for the assessment and registration of agricultural and veterinary chemicals in Australia. As chemical products are registered on a daily basis and renewal of these registrations are undertaken each financial year, there is much change in the registration status of products each year. The APVMA information is available at: **http://www.apvma.gov.au/**

The Chemical Standards Branch (CSB) of the Department of Primary Industries provides information on agricultural chemicals registered in Victoria and their uses. Enquiries will be referred through the Customer Service Centre on 136 186. Information can also be obtained by visiting the CSB website: **www.dpi.vic.gov.au/chemicalstandards**

Under Victorian legislation there are controls on the use of agricultural chemicals. It is the responsibility of the user to be familiar with these controls. These responsibilities are outlined in Agriculture Note AG0520: "Responsible use and handling of farm chemicals".

Farm chemicals are registered for specific uses. Each chemical has a 'product label', which documents the approved use and the approved rate of use within each State of Australia. This label is important in determining the appropriateness of chemical use.

Choose only products registered for use in your particular situation. Read the product label carefully and follow all label instructions.

Your chemical retailers can provide information on registered chemical products that are available in their store. They can also supply a 'material safety data sheet' that outlines the health and safety issues associated with use of a product.

Legal use of some restricted chemicals requires the user to possess an Agricultural Chemical User Permit (ACUP). Other chemicals have restrictions on their use in Agricultural Chemical Control Areas (ACCAs).

Information on ACUPs, ACCAs and other chemical information can be found at the website: **http://www.dpi.vic.gov.au/chemicalstandards**

Biological control

No biological control agents are available or under development for this weed in Australia. The European weevil *Gymnaetron tetrum*, accidentally introduced to the USA, causes extensive seed destruction in some areas.

Figure 5. Exceptionally tall specimens of great mullein.

Early treatment of new infestations will give you the best value for your weed control dollar.

Further advice

- Contact your local landcare or friends group for further assistance and advice.
- Call the DPI/DSE Customer Service Centre on 136 186.
- Visit the DPI website at:
  http://www.dpi.vic.gov.au
  and the Weeds Australia website at:
  http://www.weeds.org.au

References

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