



NSW DEPARTMENT OF
PRIMARY INDUSTRIES

Weed Alert

HAVE YOU SEEN THIS PLANT?

Witchweed

(*Striga* spp.)



Witchweed causes severe damage to cereal crops.
Photo: Michael Jones, Newman College Birmingham, UK

INTRODUCTION

Parasitic weeds such as witchweed are among the most destructive and difficult to control weeds in agriculture. Witchweeds are parasitic herbs that grow on the roots of a host plant. They are serious weeds of maize, millet, rice, sugarcane, sorghum and legume crops. Crop losses can be as high as 100%.

At least 11 witchweed species around the world are known to attack crops. The most common species are *Striga hermonthica*, *S. asiatica* (both on cereals) and *S. gesnerioides* (on legumes).

WORLD STATUS

Witchweeds are native to tropical Africa and Asia. They infest an estimated two-thirds of all cropping in Africa.

STRIGA ASIATICA

Striga asiatica has the widest distribution and is listed as a weed in 35 countries, including a large infestation in the United States. It is not currently found in Australia.

IDENTIFICATION

Striga asiatica is an annual herb that grows to 30 cm (rarely to 50 cm) high.

It is distinguished by bell-like swellings where witchweed roots attach to the roots of the host crop.

Host plant symptoms of witchweed attack are similar to severe drought stress, nutrient deficiency and vascular disease.



Flowers of *Striga hermonthica*.
Photo: Michael Jones, Newman College Birmingham, UK

Stems

Underground stems are round and white, while the above-ground stems are four-sided and covered with rough white hairs.

Leaves

The leaves are 6–40 mm long and 4 mm wide and taper to a pointed tip. They are green and have a rough surface.

Flowers

The flowers (see picture over page) are in a spike that is 10–15 cm long and found at the top of the stems. The flowers are 5–8 mm long and are red, pink, white, yellow, orange or purple depending on the region of origin.

Fruit

The fruit is a five-sided capsule about 4 mm long and 2 mm wide, containing on average 550 seeds. The seeds are dust-like, 0.2–0.3 mm long, brown and ribbed.

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GROWTH AND SPREAD

Witchweeds are dependent on a host. The most favourable temperatures for germination for *S. asiatica* are 30°–35°C, with no development below 20°C. It will only germinate when exposed to chemicals that a host plant gives off. Numerous parasitic attachments can occur on the same host. *Striga asiatica* spends the first four to seven weeks after germination underground obtaining all its nutrients from the host.

After emergence, witchweeds can flower and produce seed rapidly. Each plant is capable of producing 50 000 to 500 000 seeds. These may remain viable for a number of years in the soil.

Seeds are easily spread short distances by wind, and further by water and soil attached to animals, machinery, tools, footwear and clothing. Contaminated planting seed is the most likely way for witchweeds to be introduced into an area.

Witchweed prefers intensive agriculture where frequent crops, monocultures and fertilisers encourage growth and seed production.

CONTROL

Witchweeds are difficult to control as most of their life cycle is underground and inaccessible to mechanical or herbicidal control until after emergence. By this time, it is usually too late to prevent yield losses.

Crop rotation with trap crops can be beneficial. Depending on the *Striga* spp. of concern trap crops include cotton, sunflower, linseed and *Striga*-resistant maize varieties. These stimulate the *Striga* spp. seeds to germinate without being parasitised themselves.

If you have seen this plant, please report it to your Council Weeds Officer or NSW Department of Primary Industries for positive identification.



Striga asiatica in flower
Photo: Gene Cross North Carolina Department of Agriculture

WATCH OUT FOR AND REPORT ANY FORM OF WITCHWEED.

All *Striga* spp. except the native species are declared noxious throughout NSW as Class 1 weeds under the *Noxious Weeds Act 1993*. These weeds must be eradicated from the land and the land kept free of the plant. As notifiable weeds, all outbreaks must be reported to the local council within three days of detection.

REFERENCES

- Dembele, B., Dembele, D. and Westwood, J.H. (2005) Herbicide Seed Treatments for Control of Purple Witchweed (*Striga hermonthica*) in Sorghum and Millet. *Weed Technology* **19**: 629–635.
- Holm, L.G., Plucknett, D.L., Pancho, J.V. and Herberger, J.P. (1977) *The world's worst weeds: Distribution and Biology*. The University Press of Hawaii, Honolulu. pp 456–464.

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FOR MORE INFORMATION:

Contact your local council weeds officer or district agronomist, or telephone the NSW Department of Primary Industries Hotline on 1800 680 244



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