Restricted invasive plant

Sicklepods

Sicklepod (*Senna obtusifolia*), **foetid senna** (*Senna tora*) and **hairy senna** (*Senna hirsuta*)

These species can invade and completely dominate pastures and other disturbed areas such as roadsides, fence lines, creek banks and disturbed areas. They have the potential to become major weeds of many crops within a matter of two or three growing seasons.

Sicklepod and sennas are unpalatable to domestic stock. However, cattle and horses will eat mature seed, which can pass through the animal and germinate in dung. This is the most common manner of seed spread from one property to another.

Seed reserves of 2000 seeds/m^2 of soil have been recorded in dense stands of sicklepod. These large reserves may germinate at any time of the year under favourable conditions. Once a seed population develops in the soil, sicklepod can remain a problem for many years. Seed can remain viable for up to 10 years.

Queensland Government

Legal requirements

All three sicklepods are category 3 restricted invasive plants under the *Biosecurity Act 2014*. They must not be given away, sold, or released into the environment. The Act requires everyone to take all reasonable and practical steps to minimise the risks associated with invasive plants under their control. This is called a general biosecurity obligation (GBO). This fact sheet gives examples of how you can meet your GBO.

At a local level, each local government must have a biosecurity plan that covers invasive plants in its area. This plan may include actions to be taken on certain species. Some of these actions may be required under local laws. Contact your local government for more information.

Description

Sicklepod (*Senna obtusifolia*) and foetid senna (*Senna tora*) are closely related annual weeds. Sicklepod is a vigorously growing, very competitive woody shrub which grows 1.5–2.5 m tall and 1 m wide. It is normally an annual, but plants which have been slashed or have survived chemical treatment often reshoot, flower and last for another year. Leaves are divided into three opposite pairs about 4 cm long and 2 cm wide, rounded at the end and wedge-shaped at the base.

Flowers are yellow, small, about 1 cm across and have five petals. The seed pod is long (10–15 cm), slender (3–5 mm wide) and sickle-shaped. When ripe, the pods burst open, shedding their shiny, flattened, dark brown seeds.

If you have noticed a shorter form of sicklepod that flowers and matures three to four weeks earlier than the main infestation of sicklepod, it could be foetid senna (*Senna tora*).

Foetid senna possibly originated from a sicklepod-like ancestor in the Asia–Pacific region; however, it has been recorded from Darwin, Mackay, Innisfail and Cairns. It is often found mixed in with sicklepod.

Hairy senna is a soft woody perennial shrub with hairy leaves and pods. Hairy senna can be distinguished from sicklepod and foetid senna by its hairiness and leaflets. Sicklepod and foetid senna leaflets are rounded in shape whereas hairy senna leaflets are pointed at the tips. A prominent conical gland is found at the base of each leaf stalk.

Flowers are larger and borne in clusters of two to eight in the upper branches of the plant. Seed pods are hairy, slightly curved and also occur in clusters. Seeds are dark and round in shape, whereas sicklepod and foetid senna seeds are rhomboid in shape.

Habitat and distribution

Sicklepod and sennas are weedy in many tropical countries around the world and are thought to be native to America. Sicklepod and foetid senna occur predominantly in pasture and sugarcane along the tropical east coast of Queensland (from Sarina to the tip of Cape York) and the top end of the Northern Territory. Hairy senna is a perennial weed of pastures and rainforests along coastal Queensland and northern New South Wales.

Sicklepod prefers well drained, fertile soils and is well suited to open coastal forest country.

Table 1. Characteristics of sicklepod, foetid senna and hairy senna

Situation	Sicklepod *Senna obtusifolia*	Foetid senna *Senna tora*	Hairy senna *Senna hirsuta*
Flower anthers	Beaked (narrow at apex)	Rounded at apex	Beaked (narrow at apex)
Flower pedicel (stalk)	15–20 mm long	10 mm long	12–20 mm long
Seed areole	Narrow (‹1 mm) and oblique	Wide (1.5–2 mm) and longitudinal	No areole
Leaf petiole (stalk)	15–20 mm long	20–45 mm long	40–65 mm long
Leaf glands	1–2 glands on lowest pairs of leaflets	2 glands on lowest two pairs of leaflets	1 conical gland at base of leaf petiole (stalk)
Pod pedicel	15–20 mm long	10 mm long	15–20 mm long
Odour of crushed foliage	No unpleasant odour	Foetid, unpleasant odour	No unpleasant odour
Height	Up to 2 m tall	Up to 0.5 m tall	Up to 2.5 m tall

Control

Managing sicklepods

The GBO requires a person to take reasonable and practical steps to minimise the risks posed by sicklepods. This fact sheet provides information and some options for controlling sicklepods.

Prevention and early detection

The most important aim of control should be to prevent further seed production. Then aim to replace sicklepod with a competitive pasture or crop. Pasture or crop management should thereafter include spot spraying of any sicklepod seedlings that establish.

As hairy senna is not as widely distributed, landholders need to be on the lookout for it. Early detection and treatment is the most economical approach to control.

Pasture management

Do not allow stock to graze paddocks containing sicklepod or senna, especially when mature seed is present. Stock introduced from infested areas should be confined to a small paddock or yard for a week to be sure all ingested seeds have been passed. Germinating seedlings will be easily seen and can then be treated.

The effectiveness of herbicides will be optimised if used in conjunction with sound pasture management practices. Maintenance of a vigorous pasture ensures maximum annual production as well as out-competing sicklepod and senna.

A constant, dense sward of grass will exclude sunlight and help to maintain soil moisture. This combination will limit seed germination and hasten the decomposition of seed reserves in the ground. Both signal grass (*Brachiaria decumbens*) and pangola grass (*Digitaria decumbens*) offer good suppression and respond well to regular applications of nitrogen fertiliser.

Stock should be excluded at least until a dense sward of grass is obtained. Spot spraying of sicklepod and senna seedlings will need to be continued for some time.

Mechanical control

Slashing can be undertaken to reduce old plants to a manageable size.

Sharp slasher blade cuts will encourage the plant to reshoot so blunt blades must be used to shatter the stems of the plant. Slashing should always be done prior to seed set, preferably when plants are flowering.

Rotary hoeing or discing infested areas and immediately sowing with improved pastures can be effective, provided that the grasses are well managed. All machinery should be cleaned on site following mechanical control in order to reduce possible seed spread into clean areas.

Herbicide control

Using a power spray or knapsack, thoroughly wet all of the leaves and stems to the point of run-off with one of the spray mixtures outlined in Table 2. Currently no herbicide is registered for the control of hairy senna. Remember to read the label before using any herbicide.

Non-crop areas

Sicklepod is not difficult to control in the seedling stage; however, control rapidly becomes more difficult with increasing plant age, requiring higher herbicide application rates.

Crop areas

Advice should be obtained from Biosecurity Queensland or the regional Sugarcane Industry Productivity Services if these weeds are found in your crop. Herbicides used and application rates will depend on the crop to be planted.

Further information

Further information is available from your local government office, or by contacting Biosecurity Queensland on 13 25 23 or visit biosecurity.qld.gov.au.

Table 2. Herbicides for the control of sicklepods

Situation	Herbicide	Rate	Comments
Agricultural non-crop areas, commercial and industrial areas, forests, pastures and rights-of-way	Triclopyr 300 g/L + Picloram 100 g/L (e.g. Conqueror) or Triclopyr 300 g/L + Picloram 100 g/L + Aminopyralid 8 g/L (Grazon Extra)	3 L/ha or 200 mL/100 L + wetter (consult label)	Spray from early seedling stage until well before flowering
	2,4-D 300 g/L + Picloram 75 g/L (e.g. Tordon 75-D)	300 mL/100 L water	Spot spray (handgun or knapsack)
		700 mL – 1.5 L/ha + 800 mL 2,4-D amine (625 g/L (consult label)	Boom spray
Non-crop and rights-of-way	Dichlorprop as K salt 600 g/L (e.g. Lantana 600)	1 L/200 L	Completely wet all leaves and stems of target plants For best results spray at flowering
Sugarcane	2,4-D as tipa 300 g/L + Picloram 75 g/L[1] (e.g. Tordon 75-D) + 2,4-D amine (625 g/L) (e.g. Ken-Amine 625) (tank mix)	700 mL – 1.5 L/ha + 800 mL 2,4-D (consult label)	High volume foliar spray Rate depends on plant size (consult label)
	Dicamba as Na salt 700 g/kg[1] (e.g. Cadence WG) + atrazine 600 g/L (e.g. Gesaprim) or 900 g/kg (e.g. Gesaprim Granules) (tank mix)	560 g plus 830 mL atrazine 600 g/L or 560 g atrazine 900 g/kg	Boom or aerial application by licenced operator
		740 g plus 1660 mL atrazine 600 g/L or 1.1 kg atrazine 900 g/kg (consult label)	Consult label
	Paraquat as dichloride 135 g/L + Diquat as dibromide 115 g/L[2] (e.g. Sprayseed)	1.2–1.6 L/ha + wetter (consult label)	

Notes:
[1] There is a 56 day withholding period before harvest and a 56 day withholding period before grazing or cutting for stock food.
[2] See label for withholding period required before grazing or cutting for stock food.

Read the label carefully before use. Always use the herbicide in accordance with the directions on the label.

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