

Soybean

Management Strategies for Sicklepod

Sicklepod [*Senna obtusifolia* (L.) Irwin & Barnaby] is a problem weed in many parts of Mississippi and other Southern states. This annual legume produces seed abundantly. Seeds can germinate soon after falling from the mother plant. Rarely do you see one sicklepod plant. Infestations usually start with a few plants but if not eradicated, quickly spread to tens of thousands or millions of plants per acre. It takes fairly heavy infestations of sicklepod to reduce soybean yield, but populations quickly reach levels that can cause yield losses. Lower populations may not reduce yield but can reduce soybean quality, increase grain moisture, cause dockage at the market, and create higher infestations in following years.

Management Tactics

Once sicklepod is established in an area, producers must use all available management tactics to prevent further spread of this weed. Timely planting, reduced row spacing, soil fertility maintenance, and protection from insects, plant pathogens and herbicide injury improve soybeans' competitiveness with weeds. It appears that weed management strategies that disturb the soil surface stimulate sicklepod seedling emergence, since new flushes of sicklepod seedlings emerge soon after each cultivation. Because of this, cultivation alone is not a highly effective management strategy unless you use it frequently. Since sicklepod is best adapted to conventional tillage systems, changing to a reduced till or stale seedbed production system creates a less favorable environment for sicklepod growth and development.

Perhaps one of the most overlooked forms of control for sicklepod and other weeds is good sanitation. The combine has contributed to new weed seed in many soybean fields. As the combine moves into the field to remove the soybean seed, weed seed on the surfaces of the combine may fall to fertile, new sites of infestation. This can be especially true with smaller farmers who rely on custom harvest. Carefully cleaning the combine between use in infested and non-infested fields may have prevented many of the weed problems producers face with sicklepod and other weeds. Care must also be taken to clean soybean seed. Producers who traditionally plant "brown bag" seed must be extremely cautious that weed seed, especially sicklepod seed, have been cleaned from seed stocks.

Several herbicide treatments can be used for effective sicklepod control, although most often a systems approach is necessary. No one product provides season-long sicklepod control with one application. The most effective sicklepod management systems are described below, and Tables 1 and 2 list rates for products mentioned below.

Roundup Ready Soybeans

Until recently the most effective control strategy for sicklepod in soybeans involved a systems approach, using the production tactics mentioned above with preemergence and postemergence herbicide treatments. Currently the most effective strategy for sicklepod control in soybeans is glyphosate applications to a Roundup Ready variety. The number of glyphosate applications needed for season-long control will vary and is influenced by the effectiveness of soil-applied treatments before or at planting, quickness of soybean canopy closure, and the number of sicklepod seedling flushes. Lower rates of glyphosate can control sicklepod if seedlings are not beyond the two-leaf stage and are actively growing. However, higher rates are needed to control sicklepod that is larger or stressed.

Conventional Soybeans

The second most effective and easy to apply sicklepod treatment is metribuzin (Sencor) applied preemergence followed by Classic applied postemergence at 0.50 oz/acre or FirstRate at 0.30 oz/acre. Sencor application rates depend on soil texture and organic matter content. You must be careful to avoid planting a metribuzin-sensitive soybean variety. You cannot use metribuzin on soils with less than 0.5% organic matter. Preemergence application of Python or Scepter is an alternative to metribuzin. Applications of Sencor on soils with pH above 7.5 or with history of iron chlorosis is not recommended. Likewise, application of Sencor is not recommended to soils with a calcareous surface layer. Python has only one soil application restriction: do not apply to soils with pH greater than 7.8. Although not as effective for sicklepod control as Sencor, this less restrictive labeling allows applications of Python to soils where soybean injury to these other herbicides could occur.

Lastly, postemergence directed applications of metribuzin or linuron plus 2,4-DB effectively control sicklepod. These treatments are probably the most effective to control large sicklepod, but they are also phytotoxic to soybean. You must be very careful to avoid contacting soybean foliage higher than 25 to 30% above the soil line

with these herbicide treatments. You can use these treatments only where you grow soybeans in rows wide enough for directed or hooded application, and when there is enough difference in height between sicklepod and soybean to apply directed sprays. Do not use these treatments before soybeans reach 8 inches high or V4 stage.

Table 1. Rates per acre of soil applied herbicides recommended for sicklepod control.

Herbicide	Trade name	Timing	Soil Texture		
			Coarse	Medium	Fine
flumetsulam	Python	PRE	1.0 oz	1.2 oz	1.4
imazaquin	Scepter	PPI	2.8 oz	2.8 oz	2.8 oz
imazaquin + pendimethalin	Squadron	PRE	3 pt	3 pt	3 pt
metribuzin	Sencor 4L	PRE	0.50 - 0.75 pt	0.75 - 1.0 pt	1.0 - 1.25 pt
	Sencor 75DF		0.33 - 0.50 lb	0.50 - 0.67 lb	0.67- 0.83 lb
metribuzin + metolachlor	Boundary	PRE, PPI	1 - 1.5 pt	1.8 - 2.0 pt	2.4 - 2.7 pt

Table 2. Rates per acre of postemergence herbicides recommended for sicklepod control.

Rate	Trade name	Method	Rate
chlorimuron	Classic	Over the top	0.50 oz
cloransulam	First Rate	Over the top	0.30 oz
cloransulam + flumetsulam	Frontrow	Over the top	0.42 oz
glyphosate	(several)	Over the top of Roundup Ready soybean only	0.75 lb ae ¹
linuron + 2,4-DB	Lorox 50DF	Directed	1.0 lb
	Linex 4L		1.0 pt
	(several 2 lb/gal)		0.8 pt
	(several 1.75 lb/gal)		0.9 pt
metribuzin + 2,4-DB	Sencor 75DF	Directed	0.67 lb
	Sencor 4L		1.0 pt
	(several 2 lb/gal)		0.8 pt
	(several 1.75 lb/gal)		0.9 pt

¹Refer to glyphosate products, formulations, and rate conversions table in publication 1532, Weed Control Guidelines for Mississippi, for equivalent rates of various glyphosate products.



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