Sphaerophysa salsula (Pall.) DC.

Swainsonpea

Family: Fabaceae
Range: Much of the western United States, with the exception of North and South Dakota. Considered eradicated in California.
Habitat: Disturbed sites, roadsides, irrigation ditches, cultivated crops. It has a high potential for establishment along streams, irrigation canals, waste ways, pastures, and meadows with a high water table. Has become a problem in some poorly drained, marshy, or saline areas of the western U.S. Most often found as a weed where alfalfa is grown for seed, because the seeds of the two species closely resemble each other.
Origin: Native to Asia. It may have been introduced to the United States for forage or soil stabilization.
Impacts: Mostly a problem for alfalfa seed producers. Can somewhat impact native plant diversity along riparian areas. Can impact mineral cycling or nutrient dynamics of an area. It is also unpalatable to livestock and wildlife.
Western states listed as Noxious Weed: California, Nevada, Oregon, Washington

Swainsonpea is an herbaceous perennial to 5 ft tall, with pinnate-compound leaves. Plants often develop an extensive system of vigorous, woody, creeping, horizontal roots that develop new shoots. Stems are erect to ascending and covered with short white hairs. The leaves are odd pinnate-compound with 15 to 23 leaflets that are oblong to ovate and up to 1 inch long. The upper surface of leaflets is mostly glabrous, while the lower surface is covered with short, white hairs. Roots are associated with nitrogen-fixing bacteria. Plants are often long-lived.

The pea-like flowers are about 0.5 inch long and brick-red to orange-red. They are arranged in axillary racemes near the stem tips. The pods inflate at maturity and become ovoid to spherical, 0.75 to 1.5 inches long with a short stalk-like base. The pods are indehiscent with numerous seeds. Plants spread by seeds and lateral creeping roots. Entire pods disperse as units with seeds enclosed. A large proportion of the seed is hard-coated and requires scarification to germinate. Like other members of the Fabaceae, the seeds likely survive for many years in the seedbank.

NON-CHEMICAL CONTROL

Mechanical (pulling, cutting, disking)	Small populations can be controlled by manually removing individual plants, including as much of the root system as possible, followed by frequent removal of root sprouts and seedlings. Mowing may reduce seed production, but will not completely control this species. Tillage may be ineffective due to an extensive creeping root system that sends up numerous shoots, and may spread severed rootstocks to new areas.
Cultural	Grazing may reduce seed production, but will not completely control this species. Cattle likely prefer the seed pods of swainsonpea, and seed viability probably remains high after passing through animals. Therefore, cattle should be removed from areas after seed production. Like many other legumes, the seeds are extremely hard and may be viable in the soil for many years. Burning is not an effective control method, as fire stimulates root sprouting.
Biological	Currently, no registered biocontrol agent for swainsonpea is available in the United States.

CHEMICAL CONTROL

The following specific use information is based on published papers and reports by researchers and land managers. Other trade names may be available, and other compounds also are labeled for this weed. Directions for use may vary between brands; see label before use. Herbicides are listed by mode of action and then alphabetically. The order of herbicide listing is not reflective of the order of efficacy or preference.

GROWTH REGULATORS	
2,4-D Several names	**Rate:** 1 qt product/acre (0.95 lb a.e./acre) **Timing:** Postemergence, to rapidly growing plants, particularly at the budding stage. **Remarks:** 2,4-D is a broadleaf herbicide with no soil residual activity. Repeated applications at the label rate for 2 or more years may be effective. Do not apply ester formulations when outside temperatures exceed 80°F. 2,4-D appears to be the herbicide most commonly used to control swainsonpea.
Aminopyralid *Milestone*	**Rate:** 5 to 7 oz product/acre (1.25 to 1.75 oz a.e./acre) **Timing:** Postemergence in early bloom or during fall when translocation of carbohydrates to the roots is maximized. **Remarks:** Aminopyralid is a broadleaf herbicide similar to picloram, but more selective and with shorter soil residual activity. It is generally very safe on grasses. Broadcast applications will also provide preemergence control of germinating seeds.
Clopyralid *Transline*	**Rate:** 0.25 to 1.33 pt/acre (1.5 to 8 oz a.e./acre) **Timing:** Postemergence in early bloom or during fall when translocation of carbohydrates to the roots is maximized. **Remarks:** Clopyralid selectively controls certain broadleaf species, particularly members of the Asteraceae and Fabaceae. It is safe on grasses. Clopyralid has some soil residual activity, but not as long as aminopyralid. Repeat treatments will be necessary until seedbank is depleted, possibly several years.
Dicamba *Banvel*, *Clarity*	**Rate:** 2 to 3 qt/acre (2 to 3 lb a.e./acre) **Timing:** Postemergence in early bloom or during fall when translocation of carbohydrates to the roots is maximized. **Remarks:** Dicamba is broadleaf-selective and has short soil activity. Do not apply when outside temperatures exceed 80°F.
Picloram *Tordon 22K*	**Rate:** 1 to 2 qt product/acre (0.5 to 1 lb a.e./acre) **Timing:** Postemergence in spring or fall. **Remarks:** Picloram is one of the most effective chemical control options. It has long soil residual, so broadcast applications will also control germinating seed. *Tordon 22K* is a federally restricted use pesticide. Picloram is not registered for use in California.
Triclopyr *Garlon 3A, Garlon 4 Ultra*	**Rate:** 1 to 1.5 pt *Garlon 4 Ultra* /acre (0.5 to 0.75 lb a.e./acre) or 1 qt *Garlon 3A* (0.75 lb ae/acre) **Timing:** Postemergence in early bloom or during fall when translocation of carbohydrates to the roots is maximized. **Remarks:** Triclopyr is a growth regulator herbicide with little or no soil residual activity. It is broadleaf-selective and typically does not harm grasses. *Garlon 4 Ultra* is formulated as a low volatile ester. However, in warm temperatures, spraying onto hard surfaces such as rocks or pavement can increase the risk of volatilization and off-target damage.
AROMATIC AMINO ACID INHIBITORS	
Glyphosate *Roundup*, *Accord XRT II*, and others	**Rate:** 2 qt product (*Roundup ProMax*)/acre (2.25 lb a.e./acre) **Timing:** Postemergence in early bloom or during fall when translocation of carbohydrates to the roots is maximized. **Remarks:** Glyphosate has no soil activity and is nonselective. Repeated applications will probably be necessary. This species is a good candidate for wiper applications at 33% to 50% v/v solution. Regrowth is likely and reapplication may be necessary.

RECOMMENDED CITATION: DiTomaso, J.M., G.B. Kyser et al. 2013. *Weed Control in Natural Areas in the Western United States*. Weed Research and Information Center, University of California. 544 pp.