



INVASIVE ALIEN SPECIES

Sulfur Cinquefoil (*Potentilla recta*) aka Rough-fruited cinquefoil, Erect cinquefoil

Provincial Designation: Prohibited Noxious

Overview:

A long-lived perennial that reproduces by seed, but also vegetatively by shoots emerging from woody rootstocks. Over time, the annual re-sprouting from the main root becomes several closely spaced individual plants circling the old, decaying root. Some plants in long-term infestations have been estimated to be nearly 20 years old. Sulfur cinquefoil can self-pollinate, and seedlings quickly mature into blooming plants. It is able to invade and dominate pasture/range that is in good condition. Native to Eastern Europe and the Mediterranean, it was introduced to North America sometime before 1900 and has been observed to out-compete some knapweed species.

Habitat:

Grows in a wide variety of soil types and climates, but does best in semi-arid regions. It will grow under open forest canopy but is intolerant of complete shade.



PHOTO: USDA ARS Archive, USDA Agricultural Research Service, Bugwood.org

Identification:

Stems: Stems are upright with some branching in upper portions and grow 30-70 cm tall. There may be one or many stems per plant. Perpendicular hairs cover all parts of the plant except the flowers. Older plants may lose those hairs over time due to exposure.

Leaves: Leaves are stalked, numerous, alternate and palmately compound with 5-7 leaflets (sometimes 9) having toothed edges. Leaflets are 3 to 6 cm long and less than 1 cm wide with green undersides.

Flowers: Flowers are light yellow (sulfur-colored) and darker yellow at the flower's center. Petals (5) are heart-shaped with a distinctive notch. Stamens are numerous.

Seeds: Seeds are tiny, dark brown with ridges. An average plant can produce ~1400 seeds per season – seeds are viable for about 4 years.

Prevention:

Sulfur cinquefoil can be very difficult to distinguish from some of the native cinquefoils – even for the experienced – and is easily unnoticed when not in bloom. The following table contrasts this invader's characteristics with those of the similar, native Graceful cinquefoil (*Potentilla gracilis*).

Graceful/Slender cinquefoil	Sulfur cinquefoil
short, spreading hairs on leafstalk and stem	longer hairs perpendicular to leafstalk and stem
few stem leaves; mostly basal leaves	numerous stem leaves; fewer basal leaves
smooth seed coat	net-like pattern on seed coat
most have a dense, woolly underleaf	sparse, stiff hairs; both sides of leaf are similar
short rhizomes	woody taproot with short branch roots
flowers brighter yellow	flowers paler yellow
leaves are green to gray	leaves more yellowish
about 20 stamens	25 or more stamens
leaflet serrations sometimes deep	leaflet serrations halfway to mid-vein

SOURCE: http://www.fs.fed.us/database/feis/plants/forb/potrec/botanical_and_ecological_characteristics.html

¹ Always follow the product labels. The use of pesticides in any manner not published on the label or registered under the *Minor Use of Pesticides* regulation constitutes an offence under both the *Federal Pest Control Products Act* and *Alberta's Environmental Protection and Enhancement Act*.



PHOTOS: Richard Old, XID Services, Inc., Bugwood.org

Control:

Grazing: High tannin content in this plant makes it unpalatable to almost all livestock and wildlife. *Invasive plants should never be considered as forage.*

Cultivation: Repeated cultivation before seed set can be effective over time, but equipment must be cleaned after – root fragments can produce new plants. Hand digging is effective on small infestations – be sure to get as much root as possible. Several years' effort is required to deplete the seed bank.

Mechanical: Mowing is not effective, as new shoots will replace the cut stems.

Chemical:¹ Picloram and Glyphosate have been effective. Consult your local Agricultural Fieldman or Certified Pesticide Dispenser for more information.

Biological: None researched to date.