

# WEEDS

## PUNCTUREVINE (*Tribilus terrestris*)

### INTRODUCTION

Puncturevine, also known as bullhead or goathead, originated in Europe. This plant was first recorded in California in 1903 and the Pacific Northwest in 1924, then moved into Canada in the early 1970's. In BC it occurs only in the southern Okanagan and lower Similkameen regions. It has been classified as a noxious weed for the Okanagan-Similkameen regional district.

Puncturevine prefers dry, sandy or gravelly soils and requires less water than most plants. The most distinguishing features of this weed are its spiny seedpods, for which it is appropriately named. The spines can damage the feet of humans, wildlife and domestic animals and may injure the mouth or stomach and intestinal linings of animals when ingested.

The spiny pods also puncture bikes and small vehicle tires.



### IDENTIFICATION

Puncturevine is a member of the Caltrop family (zygophyllaceae). It is a silky haired annual arising from a shallow taproot. Branching from the root, the green to reddish brown stems range in height from 0.3 – 1.5 m (1 - 4.5 ft). They normally form dense mats but may grow upright where there is competition for light.



Leaves are 13 mm (1-1.5 in) long, opposite, and divided into 4-8 pairs of oval, 13 mm (1-1.5 in) leaflets. The yellow flowers appear from mid-summer until frost, opening in the mornings only. They are solitary on short stalks, each consisting of five petals, 13 mm (1-1.5 in) wide. The fruit is a roughly circular, hard spiny bud with five burs that split when mature. Each bur has two spines and contains 2-5 seeds. The spines hook into humans, wild and domestic animals, tires and other surfaces, allowing for the seeds to be dispersed to new areas.

### BIOLOGY

Puncturevine reproduces only by seed. Without competition it may produce up to 1 million seeds. The seeds are found within the burs (fruit). The seed nearest to the pointed end of the bur is the largest and usually sprouts first. The rest of the seeds germinate in order of position in the bur.

Germination usually starts during spring and continues until frost.

Three weeks after germination, flowers begin to appear on the newly emerged seedlings. Fruits occur 1-2 weeks later.

## PREVENTION

The most effective way to ensure that your lands do not become infested with puncturevine is by prevention. Here are some recommendations to prevent puncturevine invasions:



- Regularly patrol your property for puncturevine plants and immediately treat new infestations.
- Cooperate with adjacent landowners and encourage them to control puncturevine and other weeds.
- Immediately re-vegetate disturbed, bare soils with a suitable seed mix that provides dense, early colonization to prevent weed invasion.
- Clean your vehicles and machinery of plant material and soil before leaving a puncturevine infested site.
- Learn to identify puncturevine and other noxious weeds.

## PHYSICAL CONTROL

The best method for controlling puncturevine is by preventing establishment. First plants found in the area should be destroyed before seedpods begin to form (early spring and summer). The plants should be disposed of by burning if there are seedpods already present. Other methods of control include hoeing, shallow tillage, or hand

pulling of small patches. For long-term control, the seeds must be destroyed to prevent the growth of new plants.

## BIOLOGICAL CONTROL

Two species of weevils, *Microlarinus lareynii* and *M. lypriformis*, were introduced to the United States in 1961. The larvae of the *M. lareynii* feed on the seeds, while the adults eat the foliage. In 1986, *M. lareynii* larvae were released in Osoyoos.

The *M. lypriformis* is a stem mining weevil. Its larvae attack the plant stems. It is established in Oregon, but attempts to establish the weevil in Washington and Idaho have failed. When used in conjunction, these two weevil species provide effective control over large puncturevine infested areas.

## CHEMICAL CONTROL

As with most control, early detection and treatment is key. Herbicides should be applied when plants are young and actively growing. Paraquat (Gramoxone), 2,4-D, glyphosate (Roundup or Rodeo), or dicamba (Banvel) are all chemicals that can be used to treat puncturevine infestations.

Consult your local Ministry of Agriculture and Food office for the most current information on appropriate chemical controls. As with all pesticide treatment, herbicide applicators must handle and apply herbicides in a safe and responsible manner, as dictated by legislation and guidelines under the Pesticide Control Act.

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