

U.S. National Early Detection and Rapid Response System for Invasive Plants

EDRR Fact Sheet

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Common Name: Puncturevine, Goathead

Scientific Name: *Tribulus terrestris* L.

Family: Zygophyllaceae

Description: An herbaceous perennial, patch-forming plant, with a deep taproot (up to 9'); an annual in colder climates. **Branching** stems radiate from the crown to a diameter of 2-5'. **Leaves** opposite, hairy, 1-3" long, pinnately compound, with 3-7 pairs of leaflets. **Flowers** yellow, with five petals, 0.5" wide, developing singly in the leaf axils. **Fruit** a round, spiny bur that splits into 4-5 hard burs. **Burs** with 2-3 sharp spines, enclosing the seeds. **Seeds** viable in the soil for 3-7 years.

Habitat: Puncturevine grows in crop fields, pastures, along roadsides and railways, in waste places, walkways, parks, yards, and other disturbed areas. It grows best on dry sandy soil, but will tolerate other types of soil. It is intolerant of freezing temperatures.

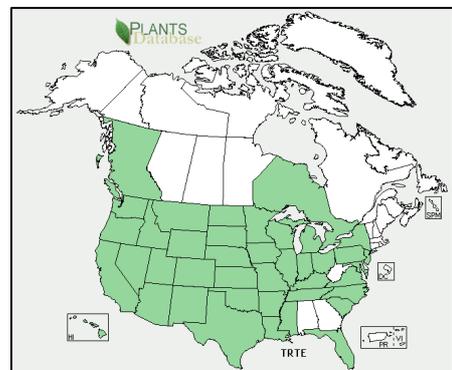
Native Range: Southern Europe and Asia.

Pathways of Introduction and Spread: Puncturevine was accidentally introduced into the U.S. and Canada and is spread as a contaminant of seeds and as a hitchhiker on vehicles and equipment. It is also intentionally planted as a dietary supplement. Extracts from the plant are promoted as a supplement to increase sexual drive and muscle mass in men. It has also been recommended for treating serious illnesses such as cancer, kidney ailments, and blood pressure problems.

U.S. and Canada Distribution:

Ecological and Economic Impacts: When allowed to grow untreated, Puncturevine develops a thick mat that hides the sharp burs. It competes aggressively with turf and field crops for water and nutrients. Livestock should not be grazed in areas that are infested with the plant. The sharp burs can injure the mouth, digestive tract, and feet of grazing animals. The plant is particularly toxic to sheep – causing photodermatitis (sensitivity to light) with skin lesions, blindness, and death in young animals. Hay contaminated with the sharp burs is also very dangerous to livestock. The sharp burs are dangerous to people and pets, and will puncture bicycle and small truck tires.

Manual and Cultural Control: Small patches of the plant can manually removed by chopping off the plant from the taproot with a hoe before seeding. This is effective because the plant does not root from the stem or stem fragments. Mowing is not an effective method of control because



the plant grows very close to the ground. Another approach is to crowd out the invader by providing good competition from desirable plants such as turf grasses.

Chemical Control: Pre-emergent herbicides applied in late winter to mid-spring to control germinating seedlings include oryzalin ([Surflan](#) and others), benfen ([Balan](#) and others), or trifluralin ([Treflan](#) and others). Post-emergent herbicides that control plants after they have emerged from the soil include 2,4-D ([2,4-D Amine 4](#) and others), glyphosate ([Roundup](#) and others), and Dicamba ([Banvel](#) and others). These are most effective if applied when the plants are small and young.

Biological Control: Two weevils, including *Microthorus lareynni* and *M. lypriformis*, which are native to Europe, were introduced into the western U.S. in 1961 for control of Puncturevine. The larvae of the weevils attack the seeds and stem of the plant. Refer to WWW.goathead.com for more information.

Regulatory Status: Puncturevine is regulated as a state noxious weed in [Arizona](#), [California](#), [Colorado](#), [Idaho](#), [Iowa](#), [Michigan](#), [Nevada](#), [North Carolina](#), [Oregon](#), [South Dakota](#), and [Washington](#). Puncturevine is regulated as [Class B Noxious Weed in Durham and New Hanover Counties](#), North Carolina.

Online Resources:

Goathead.com – Commercial Source for Puncturevine Weevils. Information about the Plant and the Weevils. URL: <http://www.goatheads.com/>

How Tribulus Terrestris Works. How Stuff Works Website.
URL: <http://health.howstuffworks.com/health-illness/wellness/natural-medicine/alternative-medicines/tribulus-terrestris.htm>

Puncturevine Images – U-GA Bugwood Image Gallery.
URL: <http://www.invasive.org/species/subject.cfm?sub=3937>

Puncturevine Profile – CDFA Encyclopedea.
URL: <http://www.cdfa.ca.gov/phpps/ipc/weedinfo/tribulus-terrestris.htm>

Puncturevine Profile – U-CA IPM Online.
URL: <http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn74128.html>

Puncturevine Profile – USDA Plants Database.
URL: <http://plants.usda.gov/java/profile?symbol=trte>

Puncturevine Profile – Washington State Noxious Weed Control Board.
URL: http://www.nwcb.wa.gov/weed_info/Tribulus_terrestris.html

Tribulus Terrestris Profile and Article – Wikipedia.
URL: http://en.wikipedia.org/wiki/Tribulus_terrestris