

Rangeland-Pasture Recommendations

Puncturevine Identification and Management

Puncturevine (*Tribulus terrestris* L) is also known as goatheads, bullheads, Texas sandbur or Texas tacks. Puncturevine is native to warm temperate and tropical regions of southern Europe, Asia, throughout Africa and in northern Australia. A member of the Caltrop Family, it is a tap rooted herbaceous perennial plant that grows as a summer annual in colder climates. It can also thrive in desert climates and poor soil conditions.

A spreading, mat forming plant it can extend up to 10 feet from the central tap root, often forming numerous branches. The leaves are hairy and pinnately compound with 4 to 8 pairs of leaflets. The flowers produced in the leaf axils are lemon yellow with 5 petals. The plants emerge as early as May and continue until frost. The yellow flowers appear as quickly as 3 weeks after the seedlings emerge and are followed by viable fruit and seeds 1 to 2 weeks later. Each fruit consists of 4 to 5 seed sections which at maturity break into hard nutlets with 2 sharp spines. One plant is capable of producing over 500,000 fruits. On average there are 4 seeds per fruit which results in over 1 million seeds per plant. The seeds are viable in the soil for 3 to 7 years.



Puncturevine is a problem throughout Colorado. It is a nuisance weed found in disturbed sites, along roadways, in overgrazed pastures, in lawns, gardens and waste areas. To successfully manage puncturevine, persistence in controlling emerging plants is necessary in order to deplete the soil seed bank.

Of all control methods, prevention is most important. Maintain healthy pastures and rangeland and continually monitor your property for new infestations. A healthy cover of desirable perennial plants will assist in discouraging puncturevine establishment.

On the backside of this sheet are puncturevine management recommendations. If you have any questions or would like more information, please contact the Weld County Public Works Department, Weed Division at (970) 304-6496 ext 3770. Please visit our website www.weldweeds.org.

Recommended management methods:

Cultural – Establishment of selected, aggressive grasses can be an effective cultural control of puncturevine. Contact your local CSU Extension office or Natural Resources Conservation Service office for seed mix recommendations. Good grazing management will stimulate grass growth and keep pastures healthy. Healthy pastures may be more resistant to puncturevine invasion. Bare spots caused by overgrazing are prime habitat for weed infestations.

Mechanical – Cutting or pulling puncturevine at the root crown can effectively eliminate the plant. However constant monitoring is necessary as this is a very rapidly growing plant. Well-established populations have a large seed bank in the soil that can remain viable for 3 to 7 years.

Biological – Two weevil biocontrol agents have been introduced in the U.S. A seed weevil (*Microlarinus lareynii*) and a stem weevil (*Microlarinus lypriformis*) when used in combination can greatly assist in the control of puncturevine. The weevils can be obtained from the Colorado Department of Agriculture’s Insectary. Please call 970-464-7916 or go to www.palisadeinsectary.com for more information.

Herbicides – The following are recommendations for herbicides that can be used in the treatment of puncturevine. Optimum results occur when the plants have recently received moisture and are actively growing. Always read, understand, and follow label directions. The herbicide label is the LAW!

Herbicide	Rate	Application Timing/Comments
Roundup Pro or other 41% Glyphosate product	2% solution or 2 and 2/3 oz/gallon water	Apply at early plant growth. Use caution when applying near grasses or other desirable vegetation. Roundup will possibly kill surrounding vegetation. No residual soil activity. Non-selective herbicide. Will kill all vegetation.
Outlaw (2,4-D and Dicamba)	1 to 2 pints/acre or 0.5 oz – 1.0 oz/gallon water	Spring- at emergence of seedlings. Continue until frost. Add non-ionic surfactant @ 0.32 oz/gal water or 1 qt/100 gal water. Grazing restrictions. DO NOT apply near or under trees or where soils have rapid permeability or where water level is high.
Telar XP	1 to 2.5 oz/acre	Apply pre-emergent or early post-emergent. Add surfactant according to Manufacturers direction. Requires continuous agitation. Apply within 24 hours of mixing to avoid degradation. No grazing restrictions if less than 11/3 oz applied.
Pendulum AquaCap OR Prowl H2O	Short Term 2-4 months: 2.1 quarts/acre Long Term 6-8 months: 4.2 quarts/acre	A pre-emergent chemical –it will not kill established growing plants. Spray solution may stain porous surfaces Length of control is dependent on weather conditions. Not labeled for use in range and pasture settings.

