WRITTEN FINDINGS OF THE
WASHINGTON STATE NOXIOUS WEED CONTROL BOARD

Scientific Name: *Tribulus terrestris* L.

Common Name: Puncturevine

Family: Zygophyllaceae

Legal Status: Class B: (a) Skagit County of region 2.
(b) Kittitas County of region 6.
(c) Adams County.

Description and Variation: Puncturevine is a prostrate annual herb, from a simple, woody taproot. The plant produces numerous stems, up to 6 ft. long, that are much branched and arise from the crown to produce a dense mat. The leaves are opposite, short-petioled, 1-3 inches long, oblong, pubescent, and divided into pinnate leaflets; each leaflet 1/4 inch long. The small, yellow, 5-petaled flowers are borne on short stalks at leaf nodes. The fruit is a woody burr with sharp, rigid spines (strong enough to puncture bicycle tires or penetrate shoe soles).

Economic Importance: *Detrimental* - Puncturevine is a serious weed in pastures, roadsides, waste places, and cultivated fields. The spines of the fruit can cause damage to the feet of animals and are a nuisance to children. If growing in orchards or vineyards, it is a problem to the fruit pickers. If grazing animals happen to eat a bur, it may cause injury to the mouth, stomach and intestines. Generally puncturevine is not grazed, but if it is, it is also toxic.

Beneficial - No beneficial uses have been reported.

Geographic Distribution: Puncturevine is found throughout the United States, except along the northern tier from Montana to New England. It is also found in Asia, South Africa, the Mediterranean region, South America, and Australia.

Habitat: Puncturevine is adapted to warm temperate conditions. It requires relatively high temperatures for germination and growth. It is highly adaptable to a wide range of conditions. Puncturevine prefers light-textured soils, but will grow on almost any type of soil. Puncturevine is found in pastures, roadsides, orchards, vineyards, waste places, parks, railway yards and agricultural areas.

History: Puncturevine was introduced into the United States with livestock imported from the Mediterranean region. It has become widespread since then.

Growth and Development: Puncturevine reproduces completely by seeds, and there is considerable seed dormancy over the autumn and winter. Seeds germinate in late spring and early summer under

suitably moist conditions. Flowers may form within three weeks and continue for several months. Fruits are thus produced through summer and fall.

Reproduction: Puncturevine flowers are cross-pollinated by insects. A single plant can produce as many as 400 fruits, each containing 2-3 seeds. Seed dispersal is by animals and by rubber-tired vehicles. The seeds have an initial dormancy and very few will germinate immediately after development. A germination rate of 84% has been reported in 6 month old seed. Seeds may remain viable for many years if buried in the soil.

Population Dynamics: Puncturevine is capable of large population increases over a short period of time. With its large seed production and the viability of seeds over a long period of time, puncturevine can increase in numbers rapidly if given the right conditions.

Response to Herbicides: Picloram, applied as a pre-emergence spray, can give adequate, but not complete control. The spraying of young plants with amitrole, cholsulfuron, or 2,4-D may also be desirable.

Response to Cultural Methods: Repeated cultivation just after germination is an effective control. If burrs are produced before cultivation, it is necessary to remove the plants and burrs and burn them.

Response to Parasites: Two weevils, *Microlarinus lareynii* and *M. lypriformis*, native to India, France and Italy, have been introduced into the United States as biocontrol agents. The larvae attack the seed and stems and have given reasonably good results. No microorganisms or viruses are known to give control.

References:

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