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Identification and Management of Camelthorn
[*Alhagi pseudalhagi* (M.Bieb.)]

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Camelthorn [*Alhagi pseudalhagi* (M.Bieb.)] is a weedy perennial shrub in the Fabaceae (Pea) family that is native to the Mediterranean region and western Asia. It occurs primarily in dry, open rangeland and has been found in Clark County, Nevada and most western states. While the weed is not yet well established in Nevada, it is adapted to dry climates and alkaline soils, and shows great potential to thrive and spread across most of the state.

Why should we be concerned?

Camelthorn is an invasive weed that is very difficult to eradicate. It aggressively invades disturbed areas, and once established, its extensive root system makes it extremely difficult to manage. The spiny nature of the plant causes injury to both livestock and humans, and interferes with recreational activities.

What does camelthorn look like?

Camelthorn is greenish and hairless, and is recognizable by its spiny, intricate branches. Mature plants grow from 1.5 feet to 4 feet tall. The stems are marked with fine lines and have 0.25- to 1.75-inch long spines. Its simple, entire leaves are alternately arranged on the branches. The leaves are oval to lance-shaped and range from 0.25 inches to 1.25 inches long. The pinkish purple to maroon flowers, produced in June, are small and pea-like. They are found on the short spine-tipped branches along the upper portion of the plant. The seeds are contained in reddish-brown, jointed pods that curve upward and are deeply indented.

Camelthorn may be confused with Russian salttree [*Halimodendron halodendron* (L.) Voss], a deciduous, thorny, leguminous shrub. However, unlike camelthorn, salttree has evenly pinnate compound leaves clustered on short spurs and short, black inflated pods that open slowly and are not constricted between seeds.

Where does it grow?

Camelthorn thrives in both dry and wet sites, including arid agricultural areas, riverbanks, canals, sandbars, and saline meadows. Its vigorous root system can reach water tables as deep as 45 feet below the soil surface, allowing it to survive in areas with little rainfall but high water tables. It grows in many types of soils, ranging from sand to clay, and can tolerate moderate soil salinity.

How does it spread?

The extensive root system of camelthorn can grow more than 6 feet deep and spread 25 feet or farther from the plant. Shallow underground stems called rhizomes produce new plants at 3 feet to 5 feet intervals from the original plant. This allows infestations to spread at a rate of about 30 feet per year.

While camelthorn spreads most rapidly by rhizomes, it also spreads by seed. The seeds turn dark brown when mature and may remain viable in the soil for several years. The seed may be dispersed by livestock that feed on the fruits and pass the seeds in their manure. The process of digestion appears to stimulate germination.

How is camelthorn controlled?

Prevention is key to controlling this invasive weed. To avoid spread by livestock, forage should be weed-free. Restrict grazing in areas where camelthorn occurs, and quarantine livestock for seven days after they have fed on the weed, providing weed-free forage.

Due to the deep and extensive root system, mechanical controls are not recommended. Tillage is likely to increase weed density, with new plants growing from pieces of roots and rhizomes. While tilling multiple times per season may eventually deplete a camelthorn infestation over several seasons, it is very expensive. To avoid spreading this weed to new areas via contaminated tillage equipment, clean all equipment and vehicles before leaving a contaminated area.

Currently, no registered biocontrol agent for camelthorn is available in the United States. Chemical controls will likely provide the best results, although repeat applications may be necessary. The key is to deplete the carbohydrate reserves of the extensive root system. Picloram applied at 1 lb/acre is one of the most effective chemical control options. Glyphosate applied at 1.5 lbs/acre provides some control, although repeat applications will be necessary. Clopyralid is usually an effective control agent on legumes, but has not been tested on camelthorn. It generally is not very effective on woody legume shrubs. A combination of 1.5 lbs/acre 2,4-D and 1.4 lbs/acre dicamba gave 95 percent control in one study. Another researcher reported a 95 percent reduction following three years of 2,4-D applied at 4 lbs/acre twice each year. Currently, however, no more than 2 lbs/acre of 2,4-D may be lawfully applied at a given site.

Near streams or rivers, or in areas with shallow water tables, special care must be taken when applying herbicides. Pesticides must be applied according to the label directions on the pesticide container to be lawfully and effectively applied.

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