

INTEGRATED WEED MANAGEMENT RUSSIAN KNAPWEED



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INTEGRATED WEED MANAGEMENT of RUSSIAN KNAPWEED

No single control method should be used in managing weeds. A combination of methods (IPM) should be used. An integrated pest management plan deals with prevention as well as control. Eradication of weed species is often not a practical goal but in most cases reducing infestation to manageable levels should be the objective.

RUSSIAN KNAPWEED

(*Acroptilon repens*) is a creeping, herbaceous perennial that reproduces from seed and vegetative buds in its root system. Shoots are erect, about 18 to 36 inches tall, and many branched. Lower leaves are 2 to 4 inches long and deeply lobed; upper leaves are smaller generally with smooth margins, but can be slightly lobed. Shoots and leaves are covered with dense gray hairs. The cone-shaped flowering heads are solitary and occur on shoot tips; they generally are ¼ - ½ inches in diameter and have smooth papery bracts. Flower color can be pink, lavender, or white. Russian knapweed has horizontal roots that have a brown to black, scaly appearance. Russian knapweed forms dense, single species stands over time due to allelopathy and competition.

Phenology, Biology, and Occurrence

Russian knapweed emerges in early spring. It generally begins bolting in May to June (elevation dependent) and flowers through the summer into fall. Seeds are produced sparingly (approximately 1200 per plant) and are viable for 2 to 3 years in soil. The weed expends most of its reproductive energy by vegetative propagation. Roots expand rapidly covering up to 12 square yards in diameter in two growing seasons.

Russian knapweed is native to the southern Ukraine, southeast Russia, Iran, Kazakhstan, and Mongolia. It occurs in these regions on clayey, sandy or rocky steppes and sunny meadows, on saline soils, or clayey, rocky or sandy shores of lakes and rivers, on rocky and clayey slopes of hills and bottomlands. It is a weed of cultivated land, dry pastures, and waste places in its native land. Russian knapweed occurs in most western states. In Washington, it is common on heavier, often saline soils of bottomlands and occurs in pastures, hayfields, grainfields and irrigation ditches. In Colorado, Russian knapweed apparently is not restricted to any particular soil type and some rangeland. Stands may survive 75 years or longer. Russian knapweed is toxic to horses.

There are an estimated 50,000 acres in Colorado infested with Russian knapweed affecting at least 27 counties. None is known to be in Douglas County, but it may just have been mistaken for Spotted knapweed.

Like other creeping perennials, the key to controlling Russian knapweed is to exhaust the nutrient stores in its root system. Thus, an integrated management plan should be developed that places continual stress on the weed. Currently, the best management plan will include cultural and chemical control techniques. Mowing (mechanical control) alone will not be sufficient; but, mowing at 2 to 3 week intervals over the growing season followed by a fall applied herbicide may be effective. Data is not available however, to verify success of this system. Currently, no biological control agents are available for Russian knapweed.

Cultural Control:

Russian knapweed forms single species stands and may eliminate other desirable plants. Therefore, sowing desirable plant species may be necessary after the weed is controlled by herbicides. Recent research at Colorado State University indicates that smooth brome will compete with the weed. Other grasses may compete as well, but data to suggest recommendations is not available. If the stand is not too old and grasses are still present, stimulating grass growth by fertility maintenance and/or irrigation (where applicable) should increase grass competition with knapweed thus, keeping the weed under continual stress. When integrating chemical and cultural control, avoid using herbicide rates that will injure grasses. When grasses are injured, effective competition will be reduced.

Biological control:

The experimentation with some plant rusts and a nematode are underway, but at present none of these controls are available to the general public.

Herbicidal Treatments

Always read and follow the label!

Homeowners:

- Use Roundup @ 3oz/gal/1000 sqft. when Russian knapweed is in the late bud to bloom growth stage. Fall also is a good time to attack this weed. **Roundup will injure or kill most grass species if they are present!** The optimum timing for Roundup is the late bud to bloom growth stage.
- Corsair @ 1 gram + 2,4-D amine @ 1.5 tablespoons /1000 sqft. in the spring at the bloom stage or in the fall.

Ranchers and large lot owners:

Marshy areas: Rodeo 7.5 pt/acre.

Shallow water table, areas adjacent to water & in root zone of desirable trees:

Transline (1 1/3 pts/acre) or Curtail @ 4-5qts/acre. Telar @ 1.5oz + 2,4-D @ 1qt/acre.

Non-sensitive rangeland & roadside areas: 1qt of Tordon 22K (Restricted Use Pesticide) + 2,4-D /acre.

Small Grains: 2qts Curtail + 1pt of Tordon 22K (between crops).

We acknowledge that most of this information was compiled by:

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