



Spotted Knapweed *(Centaurea maculosa)*

SK Provincial Designation:
Prohibited

Overview:

Primarily a biennial plant – producing a rosette the first year and a flowering bolt the second – but can also be a short-lived perennial, blooming for a few years before dying. Spotted knapweed can self-pollinate and is also cross-pollinated by insects.

A prolific seed producer – individual plants can produce over 140,000 seeds per year – control is extremely difficult on established infestations.

Knapweeds have become well known because of their almost wholesale degradation of large tracts of rangeland in the northwestern US and parts of southern BC. Knapweed contaminated hay or plant skeletons caught in vehicle undercarriages often contribute to spread. In winter plant skeletons break off and tumble in the wind, spreading seed. Spotted knapweed roots exude a chemical that inhibits the root growth of other plants.



Habitat:

Native to Eastern Europe, spotted knapweed is commonly found on well-drained, light to coarse textured soils, but is intolerant of dense shade. It prefers moister habitats than diffuse knapweed, but is intolerant of constant moisture. Infestations often form monocultures and can even extend into relatively undisturbed plant communities, displacing forage for wildlife and livestock.

Identification:

Stems: Upright and branched, growing up to 1.5m tall. There may be one or a few stems per plant.

Leaves: Rosettes are up to 15 cm long and deeply lobed. On bolting stems, the leaves alternate and become pinnately divided (feather-like) and can be slightly hairy.

Flowers: Borne singly at the ends of branches. The flowers are pinkish-purple but can occasionally be a creamy white. Bracts on the flower's base have black tips, distinguishing it from other knapweed species.

Seed: The brown, oval seeds are 1/16 to 1/8 inch long, with pale longitudinal lines and a short fringe on one end.

ABOVE: Spotted knapweed flower

LEFT: Spotted knapweed infestation

Both photos by John M. Randall, The Nature Conservancy, Bugwood.org

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INVASIVE ALIEN SPECIES

Spotted Knapweed *(continued)*

Prevention:

Producers should exercise caution when using hay from road ditches, especially primary roadways, and when purchasing hay from known infested areas.

Control:

Knapweed seeds have an extremely hard seed coat and can be viable for at least 5-10 years. Therefore knapweed control sites will need to be re-visited for many years.

Grazing: Despite having an extremely bitter taste, livestock and wildlife will graze knapweed. However this compounds the problem as viable seed is distributed in their droppings and manure. Grazing when the plant is in the rosette stage is most effective when combined with herbicide treatments. *Invasive plants should never be considered as forage.*

Cultivation: Generally, knapweed is not a problem in frequently cultivated areas.

Mechanical: Cutting or pulling before flowering can be effective on small infestations to prevent seed production, but will require several years' effort to eradicate. Remove as much of the root system as possible to prevent re-sprouting. Bare skin contact with knapweed can cause irritation, so wear gloves.

Chemical:¹ Several herbicides are effective on spotted knapweed – residual products (picloram) are the most effective. Consult your Regional Forage Specialist, the Saskatchewan Agriculture Knowledge Centre at 1-866-457-2377 or the Guide to Crop Protection for more information.

Biological: Twelve bio-control agents have been imported to North America; 3 moths, 4 flies, 4 weevils, and a rust. Most are seed-feeders and a few are root-miners. Many of these have become very widespread throughout the northwestern US and southern BC. These agents have caused dramatic reductions in plant size, and therefore seed production in some areas.



TOP RIGHT: Spotted knapweed rosette (first year growth)

BOTTOM RIGHT: Spotted knapweed plant (second year growth)

Both photos by Steve Dewey, Utah State University, Bugwood.org

Always follow the product labels. Pesticides should only be applied by certified pesticide applicators. The use of pesticides in any manner not published on the label or registered under the *Minor Use of Pesticides* regulation constitutes an offence under both the *Federal Pest Control Products Act* and provincial acts in Saskatchewan.

For the latest information on pesticides for agricultural use in Saskatchewan, please consult the provincial *Guide To Crop Protection*, produced annually by the Saskatchewan Ministry of Agriculture.