

EUROPEAN BUCKTHORN

Rhamnus cathartica
(Aka Common buckthorn)



Overview:

Common buckthorn is a deciduous shrub or small tree, introduced from Europe in the early 1800's as an ornamental hedge plant. In Canada common buckthorn was valued for its compact structure and ease of propagation and hardiness and was widely planted for shelterbelts and ornamental purposes. By the 1920's it was discovered that common buckthorn was an alternate host for an oat crop rust.¹

This shrub is dioecious (each produces only male or female flowers) therefore fruiting trees are always female. Reproduction is primarily by seed – cut stems will re-sprout but roots do not have rhizomes. The extent of the root system seems to vary with site characteristics.

Common buckthorn begins flowering late spring/early summer and flowers can appear with leaf-out. Fruits turn from green to red and to black when ripe by late summer/early fall. The fruits tend to remain on the plant through most of the winter.¹

Common buckthorn forms dense, even-aged stands which crowd and shade out native understory plants. Most of the fruits fall directly below the parent plant, creating a dense understory of buckthorn seedlings.²

Common buckthorn barks, leaves, and fruits have a strong laxative effect when consumed. Other effects include nausea, stomach cramps, diarrhea, and irritation of the lining of bowels to the point of bleeding.¹

Habitat:

Common buckthorn grows in well drained sand or clay soils, or poorly drained calcareous or alkaline soils. It has a wide range of environmental tolerances (temperature, moisture, substrate, shade) but grows best on fertile, sunny, moist, and disturbed sites. It is hardy to -40°C.¹

Identification:

Stems: Grow 1-4 m tall in shrub form with many stems and branches. In tree form a single main stem with ascending branches growing to 5-8 m tall. Many branches are tipped with a thorn 0.5-2.2 cm long. Young bark is smooth with lighter-colored lenticels and older bark is grey scaly.¹ Branches have prominent leaf scars and terminal buds are hairy in winter.³

Leaves: Are simple, elliptic, dull green, and smooth on both surfaces with minutely toothed edges.³ Leaf size is 1.5-7 cm long and 0.9-7 cm wide. Leaves occur near branch tips, are usually opposite but sometimes alternate, and often remain green until falling in late autumn.¹

Flowers: Are small, inconspicuous, and occur in small clusters. Two to eight staminate flowers are clustered in leaf axils, and pistillate flowers occur in clusters of 2 to 15. Fruits can be single or in clusters, borne in leaf axils or at the end of spur branches. Fruits are 5-10 mm in diameter bearing 1-4 seeds. Seeds are 4-5 mm long.¹

Prevention:

Common buckthorn seeds germinate best in disturbed sites. Germination and seedling survival is poor under thick litter layers. Therefore, underplanting disturbed wooded area with native woody species is potentially effective to prevent primary invasion or reinvasion of buck- thorns.¹ Seed dispersal is aided by rodent caches and birds consuming the fruits. Common buckthorn fruits have a laxative effect which facilitates dispersal.

Control:

Grazing: Consumption of common buckthorn by cattle in sufficient quantity causes poisoning and reduces milk quantity and quality. Sheep grazing as control has been experimented with.¹ Invasive plants should never be considered as forage.

Mechanical: Prescribed burning will top kill stems and destroy the seeds but will require repetition. Common buckthorn can also be difficult to ignite. In wetland areas, raising the water table can effectively kill the shrub.² Small plants can be hand pulled when the soil is moist. Larger plants will require some digging to get the root out. Soil disturbance will aid germination of buried seed so these areas will require future control efforts.³

Chemical: Triclopyr is registered for use on buckthorn. Always check product labels to ensure the herbicide is registered for use on the target plant in Canada by the Pest Management Regulatory Agency. Always read and follow label directions. Consult your local Agricultural Fieldman or Certified Pesticide Dispenser for more information.

Biological: Since 2001, research has been on-going to identify potential biocontrol agents using a predator, disease or other natural control to fight Common buckthorn. Over the past 10 years, nine species have been studied and discarded because they may have impacts on other non- target species (lack of host-specificity). Testing for Common Buckthorn is ongoing using two psyllids (sap-sucking lice) and a seed-feeding midge that have shown host-specificity in early trials. Research into the relationship between soil organisms and pathogens and Common Buckthorn will also be conducted in the future.

References:

- 1Zouhar, Kris. 2011. *Rhamnus cathartica*, *R. davurica*. In: Fire Effects Information System, [Online]. U. S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Available: <http://www.fs.fed.us/database/feis/> [2012, March 13].
- 2*Rhamnus cathartica*. Global Invasive Species Database, Invasive Species Specialist Group (ISSG) of the IUCN Species Survival Commission. www.issg.org
- 3Common buckthorn. Wisconsin Dept. of Natural Resources. www.dnr.wi.gov/invasives/fact/buckthorn_com.htm

