

TARTARY BUCKWHEAT

Fagopyrum tataricum (L.) Gaertn.

Family: *Polygonaceae* (Buckwheat).

Other Scientific Names: None.

Other Common Names: Tartarian buckwheat, sarrasin.

Legal Status: Regional Noxious: Peace River.



Identification

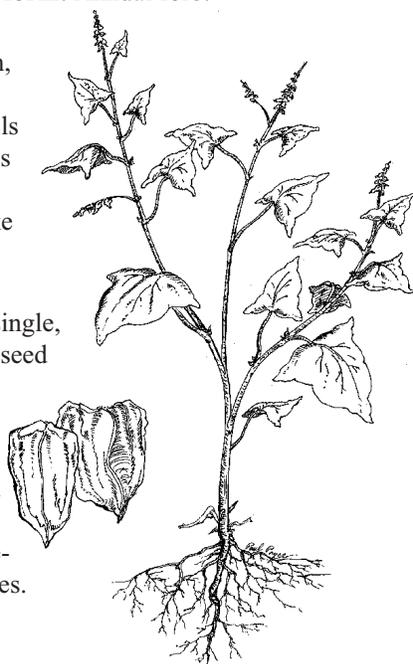
Growth form: Annual forb.

Flower:
Greenish,

small flowers are clustered at leaf axils and stem tips. Petals are absent; instead there are 5 petal-like sepals.

Seeds/Fruit: Each flower produces a single, wrinkled, 3-angled seed that protrudes from the sepals.

Leaves: Light green, heart-shaped leaves are 3–10 cm long and have wide-spreading basal lobes.



Leaves are alternate and stalked and have paper sheaths where the stalk joins the stem.

Stems: Erect, green stems to 1.0 m.

Roots: Taproot.

Seedling: Cotyledons are round with stalks and are notched at the base. First leaves are triangular with rounded basal lobes and a papery sheath at the base of the leaves (Royer and Dickinson 1999).

Similar Species

Exotics: Buckwheat (*Fagopyrum esculentum*) has reddish stems, larger white or reddish flowers, and smooth fruit (Frankton and Mulligan 1970).

Natives: Wild buckwheat (*Polygonum convolvulus*) is a twining or prostrate plant whose seeds do not protrude from the sepals (Frankton and Mulligan 1970).

Impacts

Agricultural: A serious weed of cereal and oilseed crops, tartary buckwheat reduces crop yields by as much as 70% and lowers crop quality. Seeds are difficult to remove from grains, reducing grain quality and increasing dockage and cleaning costs (Sharma 1986). Heavily contaminated grains cannot be used for flour, rolled oats, or malting processes (Royer and Dickinson 1999). Infestations can occur in pastures and forage seedings. Pigs and other livestock can suffer

severe skin inflammation after eating large quantities of this species and being exposed to sunlight.

Ecological: Occurs in roadsides and other disturbed habitats but is not likely to invade perennial native communities.

Human: Used for livestock feed, as a green manure crop, and as a soil renovator (Sharma 1986).

Habitat and Ecology

General requirements: Well adapted to relatively moist and cool weather but is susceptible to frost in spring or autumn. It tolerates a wide range of soil conditions but appears best adapted to well-drained

soils; most competitive on low-fertility soils.

Distribution: In BC it grows in cereal and oilseed crops, forage crops, roadsides, and disturbed areas.

This plant is only found in the Peace River agricultural reporting area, where it is regarded as a major concern. Found throughout the US and Canada and is a significant concern in north-central Alberta and west-central Manitoba (Royer and Dickinson 1999).

Historical: Introduced from Asia as a cultivated crop.

Life cycle: Plants overwinter as seed. Most seeds germinate in spring, but some germination occurs throughout the growing season. Mature seeds are produced 60–80 days after emergence. Tartary buckwheat flowers indeterminately, so flowers, immature seeds, and mature seeds may all be present at one time. One generation per year is produced (Sharma 1986).

Mode of reproduction: By seeds.

Seed production: A single plant can produce 400–1,100 seeds, depending mainly on the size of the individual plant.

Seed bank: Fresh seeds require after-ripening to germinate. The period of after-ripening depends on environmental conditions and occurs fastest under warm, dry conditions. Soils are likely to contain seeds at all stages from dormant to fully after-ripened (Sharma 1986)

Dispersal: Some seeds are shed and scattered before harvest, but many seeds are harvested with the crop and contaminate the seed. Machinery can locally disperse seeds, but contaminated seed is the main source of long-distance movement.

Hybridization: None known.

Management

Biocontrol: None.

Mechanical: Cultivation kills seedlings, so practices such as delayed seeding, autumn and spring tillage, summerfallowing, and post-seeding cultivation are effective control methods. Shallow autumn tillage can result in a flush of emerging seedlings that will be killed by frost, if post-harvest weather conditions are warm and dry enough to allow seed after-ripening. Mowing before seed-set will prevent seed production.

Fire: No information available.

Herbicides: Tartary buckwheat is susceptible to many herbicides. Dicamba, dicamba mixes, and 2,4-D have been effective on pastures and rangelands when weeds are actively growing. Consult the most recent edition of BC Ministry of Agriculture, Food and Fisheries Crop Production Guides for specific recommendations.

Before applying herbicides, read the label for full use and precautionary instructions.

Cultural/Preventive: Fall-seeded crops can reduce infestations through competition and by stimulating autumn emergence of weed seedlings that cannot survive the winter.

Integrated Management Summary

A combination of tillage, seeding, and herbicides appears to be the best approach to integrated management of this species. Forage crops used in a rotation also may control tartary buckwheat. Fertilizers containing phosphorous can improve crop yield at the expense of tartary buckwheat, but the fertilizer must be placed near the crop seed.

References

Frankton, C., and G. A. Mulligan. 1970. *Weeds of Canada*. Publication 948. Ottawa: Canada Department of Agriculture.

Royer, F., and R. Dickinson. 1999. *Weeds of Canada and the Northern United States*. Edmonton: University of Alberta Press.

Sharma, M. P. 1986. The biology of Canadian weeds. 74. *Fagopyrum tataricum* (L.) Gaertn. *Canadian Journal of Plant Science* 66: 381–393.

