Lamium purpureum

PURPLE DEAD-NETTLE

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ENGLISH NAMES Purple Dead-nettle, Red Dead-nettle

SCIENTIFIC NAME *Lamium purpureum* var. *purpureum*

FAMILY Lamiaceae (Mint)

RANGE/KNOWN DISTRIBUTION

Purple Dead-nettle is a weed of cereal crops, kitchen gardens, and roadsides. It is native to Europe, growing from Scandinavia south to the Mediterranean. Purple Dead-nettle has been recorded as an alien weed in the United States, including Alaska; in Maritime and eastern Canada, as well as in British Columbia; in southeast Australia, New Zealand, Japan, Korea, and in southeastern South America and the Falkland Islands. In British Columbia, Purple Dead-nettle grows in the south of the province, west of the Cascade Mountains. Purple Dead-nettle can grow successfully in many conditions and can be invasive.

IMPACTS ON GARRY OAK AND ASSOCIATED ECOSYSTEMS

In Garry Oak and associated ecosystems, Purple Dead-nettle is frequently observed in seasonally moist areas where very thin soil occurs over rocky outcrops. Where Purple Dead-nettle forms dense coverage, other spring flowering annuals that inhabit the same areas (such as native *Mimulus, Plectritis,* and *Collinsia*) may be shaded out. Mosses form the primary ground cover in many areas being invaded by Purple Dead-nettle. The effects of Purple Dead-nettle on native mosses are unknown.

FIELD DESCRIPTION

Purple Dead-nettle is an annual or facultative biennial (delaying reproduction to second year due to environmental conditions) member of the Mint (Lamiaceae) family. Individuals grow from fibrous roots with erect, square stems to 30 cm in height. The plant's heart- to oval-shaped leaves are opposite, 2-4 cm long and broad, and grow from 1-2 cm petioles (leaf stalks). Basal leaves are longer-stalked (more petiolate) than the upper leaves. The leaves of Purple Dead-nettle are crenate (with rounded teeth), softly hairy, and obviously veined. The leaves and stems of Purple Dead-nettle are green

Purple Dead-nettle growing among native mosses in a thin-soil, rocky site. Photo credit: © CITY OF VICTORIA

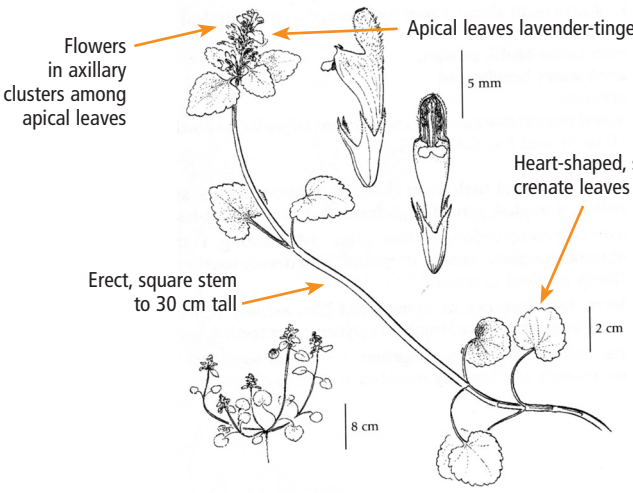

Illustration from Vascular Plants of the Pacific Northwest, Leo C. Hitchcock; Arthur Cronquist, and Mario Ownbey, illustrations by Jeanne R. Janish. Published by University of Washington Press (1969)

to lavender in colour. Purple Dead-nettle produces small red-purple or pink flowers. These flowers are axillary (attached at the juncture of stem and leaf stalks) and are arranged in false whorls of 3-6 flowers. Purple Dead-nettle produces nutlets with one seed per fruit. A single plant generally produces 300 seeds.

Purple Dead-nettle may be confused easily with Self-heal (*Prunella vulgaris*), another weedy member of the Mint family. Perhaps the most observable characteristics that differentiate these look-alike plants are the leaves and the position of the flowers. Purple Dead-nettle leaves are consistently crenate and the most apical leaves have a lavender tinge. The flowers of Purple Dead-nettle occur in several axillary groups that appear clustered amongst the apical leaves. In comparison, the leaves of Self-heal may be obscurely toothed or entirely round, but are not crenate and the leaves are not purple in colour. The many flowers of Self-heal occur in a single inflorescence above the upper leaves.

The leaves of young Garlic Mustard (*Alliaria petiolata*), a highly invasive plant in southern British Columbia, may also be confused with those of Purple Dead-nettle. Garlic Mustard's stems are round, and its triangular to heart-shaped leaves are coarsely pointy-toothed, not crenate, large (5-9 cm long and broad), and smell strongly of garlic when crushed.

LIFE HISTORY

Purple Dead-nettle may grow as an annual or biennial. Flowers have both male and female reproductive organs and self-pollinate prior to opening. However, insects, including hymenoptera (bees, wasps), are commonly observed visiting the flowers of Purple Dead-nettle and may contribute to cross-pollination. Individual plants produce large numbers of seeds: estimates range from many hundreds to many thousands of seeds per

individual. The seeds of Purple Dead-nettle can germinate year-round when buried at depths of 0.5-2 cm. Purple Dead-nettle also sprouts from stem and root fragments. Flowering on southeastern Vancouver Island is most common from March to May but can continue until fall if sufficient moisture is available. If left uncontrolled, Purple Dead-nettle can occur in high abundance, forming large colonies.

HABITAT

Purple Dead-nettle favours mesic to dry areas, but is tolerant of various soil types and moisture regimes. It is also frost-tolerant. In its native range, Purple Dead-nettle occurs most often in loamy or sandy soils. It also thrives in clay soils. Purple Dead-nettle is a weed of cereal crops, including maize and wheat, but also grows in waste and fallow lands, gardens, orchards, and along roadsides. Purple Dead-nettle prefers open environments and soils less acidic than do closely related *Lamium* species.

MANAGEMENT

Focus control efforts on preventing Purple Dead-nettle from going to seed. Continue until the seed bank is exhausted.

Develop a long-term, realistic program for invasive species removal before undertaking any work. Before taking action, obtain expert advice. Please refer to the introductory section of this manual.

PHYSICAL CONTROL: Hand-pull Purple Dead-nettle at the seedling stage to control it in sensitive areas such as thin soil and mossy sites where native species are present. Hand-cutting stems prior to flowering will prevent additions to the seed bank; ensure cut material is bagged and properly disposed of. Germination rate of Purple Dead-nettle increases with soil disturbance. To control Purple Dead-nettle in gardens and yards, mulch in fall with layers of cardboard, followed by a layer of oak leaves.

BIOLOGICAL CONTROL: No biological controls for Purple Dead-nettle are known in this region.

CHEMICAL CONTROL: *Herbicides should only be used under expert advice and with extreme caution in Garry Oak ecosystems.* Many chemical controls for Purple Dead-nettle are known because of its occurrence as a weed of cereal crops. However, these chemical sprays are designed for use with agricultural crops, not for natural areas, and are often safe only for specific crops. Their use in natural ecosystems may not be appropriate. Please consult local bylaws and pesticide listings in your region before attempting to control Purple Dead-nettle by chemical means.

OTHER TECHNIQUES: Photo-control (manipulating the light regime experienced by germinating plants) has been investigated as a potential control measure for Purple Dead-nettle. This technique is not suitable for landscape-level control.

PERSISTENCE: Seeds of Purple Dead-nettle were found viable after 7 years of dormancy and may persist in the seed bank for 8-9 years. Seeds in the seed bank will germinate at different times throughout the year depending on soil humidity and temperatures.

PREVENTATIVE MEASURES: Purple Dead-nettle readily reproduces from stem and root fragments. Do not compost material containing Purple Dead-nettle; bag and dispose of it in a municipal composting facility or during municipal curbside brush collection. Clean all equipment, including mowers, before leaving an area where Purple Dead-nettle has been cut. Use only clean soil, uncontaminated with Purple Dead-nettle seeds, when planting or conducting restoration activities in or near natural areas.

SELECT REFERENCES

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A comprehensive bibliography of literature specific to Purple Dead-nettle is available at www.goert.ca/invasive.

For more information contact the Garry Oak Ecosystems Recovery Team, or see the website at www.goert.ca