



# COMMON YARROW

## *Achillea millefolium* L.

Plant Symbol = ACMI2

### Alternative Names

Common Names: milfoil, milenrama

Scientific Names:

*Achillea millefolium* L. var. *lanulosa* (Nutt.) Piper

*Achillea millefolium* L. var. *sensu stricto*

*Achillea millefolium* L. var. *borealis* (Bong.)

### Description

**General:** Common yarrow is an aromatic perennial forb that can grow to 3 feet tall with erect simple stems with few branches (Figure 1, Lackschewitz, 1991; Hart, 1999; Johnson & Larson, 1999; Flora of North America, 2015). Woolly hairs cover the stem and leaves making the plant gray-blue in color (Chandler et al., 1982; Whitson & Burrill, 2002). Leaves are narrow and lance-shaped and can be 1 to 6 inches long (Chandler et al., 1982; Hart, 1999; Lesica, 2002). Leaves alternate on petiole and are divided into many smaller leaflets giving common yarrow a feathery or fern-like appearance (Figure 2, Chandler et al., 1982; Johnson & Larson, 1999; Lesica, 2002; Whitson & Burrill, 2002). At higher elevations or in desert environments, common yarrow will have more leaves than observed in other locations, resulting in a denser plant (Flora of North America, 2015). A rhizomatous and extensive fibrous root system stretches far through soil, resulting in asexual reproduction which can create monoculture colonies of closely bunched plants (Lackschewitz, 1991; Johnson & Larson, 1999; Lesica, 2002; Whitson & Burrill, 2002). Common yarrow flower heads are dome shaped and flat topped with white and occasionally pink ray and disk flowers forming a cluster (Figure 3, Chandler et al., 1982; Lackschewitz, 1991; Hart, 1999; Johnson & Larson, 1999; Lesica, 2002). Flower clusters are usually ½ to 1 inch wide and contain anywhere from 10 to 100 flowers that bloom from May until early fall depending on climate and region (Chandler et al., 1982; Lackschewitz, 1991; Lesica, 2002).

**Distribution:** Common yarrow is circumboreal and found throughout the northern hemisphere from valleys to mountain tops. It is considered both native and introduced (USDA-NRCS, 2022). It is most common in temperate regions in Canada, the United States, and Northern Europe and Asia (Chandler et al., 1982; Lackschewitz, 1991; Hart, 1999; Johnson & Larson, 1999; Lesica, 2002; Flora of North America, 2015; USDA-NRCS, 2022). Common yarrow is one of the most widely distributed native flowers in western United States (Johnson & Larson, 1999). The most common native variety is *Achillea millefolium* var. *lanulosa* (Nutt.) Piper, which is native across Canada and the northern United States. *Achillea millefolium* var. *borealis* (Bong.) is also a native variety found along the west coast of the United States north through Canada and Alaska. *Achillea millefolium* L. *sensu stricto* is the most common introduced variety of common yarrow in the United States and is practically identical to native *Achillea millefolium* var. *lanulosa*. Because these varieties are nearly indistinguishable, the true native range of common yarrow is difficult to determine (Chandler et al., 1982; Alaback et al., 2017). For current distribution, please consult the Plant Profile page for this species in the PLANTS Database (<http://plants.usda.gov/>).



Figure 1: Common yarrow. Image: © William S. Justice, Smithsonian Institution Department of Botany, @ PLANTS

**Habitat:** Common yarrow can be found in pastures, grasslands, woodlands, waste grounds, open forests, prairies, fallow fields, pathway edges, subalpine zones, and exposed ridges (Chandler et al., 1982; Mitich, 1990; Johnson & Larson, 1999; Lesica, 2002; Schalaus, 2009; Flora of North America, 2015; PROTA, 2015; Alaback et al., 2017). It ranges from sea level to 11,000 feet in elevation and can survive in a variety of climates, geographical regions, and soil types (Whitson & Burrill, 2002; Sanecki et al., 2003; Flora of North America, 2015). Common yarrow is often found in a variety of plant communities including turf, aspen, conifer, rangeland, sagebrush, riparian, mountain brush, and meadows (Johnson & Larson, 1999; Whitson & Burrill, 2002). Temperatures above 50° Fahrenheit and dry, open, sunny areas are where common yarrow thrives (Bourdote & Field, 1988; Chandler et al., 1982; Hart, 1999; Johnson & Larson, 1999).



Figure 2: Common yarrow leaves. Image: © Thomas G. Barnes, @ PLANTS

### Adaptation

Common yarrow prefers warm temperatures and direct sunlight but can survive in low temperatures and shaded areas, although flowering may be delayed and seed production limited (Bourdote & Field, 1988; Zhang et al., 1996; Schalaus, 2009). It can grow in cold soils with low nutrients and moisture (Turkington et al., 2002). Common yarrow can establish in dry, sandy soils or damp, clayey soils and can tolerate acidic, alkaline, and neutral pH soils. Various-textured, infertile, and poorly drained soils do not deter common yarrow growth (Mitich, 1990; Hart, 1999; Sanecki et al., 2003; Flora of North America, 2015; PROTA, 2015). This plant is most successful in disturbed areas, particularly overgrazed rangeland where it has minimal competition and can form rhizomatous patches (Johnson & Larson, 1999). Common yarrow can become weedy and hard to remove when not monitored or controlled.

### Uses

**Conservation Practices:** Common yarrow has been used in the United States for land restoration of disturbed sites, installation of low maintenance sites, and erosion control of steep slopes (Johnson & Whitwell, 1997).

**Wildlife:** This plant attracts beneficial insects including green lace wings, lady bugs, hoverflies, and tachinid flies (Al-Doghairi et al., 1999). Flowers of common yarrow are a primary food source for blue copper butterflies, snowshoe hares, deer, and pronghorns (Bird et al., 1995; Johnson & Whitwell, 1997; Johnson & Larson, 1999).

**Ornamental:** Common yarrow has been used in gardens as a full-season flower border for pollinators and other beneficial insects (Chandler et al., 1982). Common yarrow can be found in summer and winter floral arrangements across the United States and Europe (Chandler et al., 1982; Johnson & Larson, 1999).

**Forage:** This plant contains volatile oils, alkaloids, and glycosides and is often avoided by horses and cattle, but sheep will voluntarily graze on flower heads (Johnson & Larson, 1999).

### Ethnobotany

Historically, common yarrow has been used by Native American tribes and Greeks for its medicinal properties since the Trojan War (Chandler et al., 1982; Lackschewitz, 1991; Hart, 1999; Johnson & Larson, 1999; Lesica, 2002; University of Montana, 2021). Whether mashed, poulticed, or steeped in tea, this plant relieves coughing, headaches, toothaches, throat irritations, stomach disorders, nausea, and fevers (Chandler et al., 1982; Johnson & Larson, 1999). Common yarrow can reduce blood flow in wounds, reduce anxiety, and treat open sores, burns, and boils. It has been used as a mild laxative and occasionally as a local anesthetic and anti-inflammatory (Chandler et al., 1982; Lackschewitz, 1991; Hart, 1999; Johnson & Larson, 1999; Lesica, 2002; Jaenson et al., 2006; Akram, 2013; University of Montana, 2021). Native tribes that use this plant medicinally include the Blackfoot, Cherokee, Cheyenne, Chickasaw, Chippewa, Creek, Flathead, Gitksan, Illinois, Kootenai, Menominee, Meskwakis, Miami, Micmac, Mohegan, Montagnais, Ojibwa, Paiute, Potawatomi, Thompson, Ute, Winnebago,

and Zuni tribes (Chandler et al., 1982). Cheyenne and Flathead tribes used common yarrow tea to break fevers due to its sudorific properties that cause a person to sweat profusely (Chandler et al., 1982; Hart, 1999).

Common yarrow ingredients are found in present-day pharmaceuticals and are used by herbalists. Common yarrow contains the compound “achilleine” that reduces the time for blood clotting, giving it hemostatic properties for stopping the bleeding of open wounds (Chandler et al., 1982; Hart, 1999; Johnson & Larson, 1999). Common yarrow extracts have been used as mosquito repellent and it may have a toxicity towards West Nile virus (Chandler et al., 1982; Jaenson et al., 2006). Tribes also use common yarrow as snuff, smoke, or as a beverage (Chandler et al., 1982). In Poland, it is used in bouquets on Assumption Day to bring well-being to farmers and their communities (Luczaj, 2011).



Figure 3: Common yarrow flower head. Image: © Patrick J. Alexander, @ PLANTS

### Status

*Threatened or Endangered:* Common yarrow is not a threatened or endangered species or a state noxious weed.

*Wetland Indicator:* In the continental United States, common yarrow is a facultative upland (FACU) species and in Hawaii it is an obligate upland (UPL) wetland indicator species. Common yarrow does not usually appear in wetlands but can occasionally be found in riparian habitats (USDA-NRCS, 2022).

*Weedy or Invasive:* Common yarrow has the potential to become weedy in disturbed or poorly managed areas such as overgrazed rangeland (Johnson & Larson, 1999). Common yarrow may displace desirable vegetation if not properly managed. Please consult with your local NRCS Field Office, Cooperative Extension Service office, state natural resource, or state agriculture department regarding its status and use.

Please consult the PLANTS Database and your state’s Department of Natural Resources for this plant’s current status (e.g., threatened or endangered species, state noxious status, and wetland indicator values).

### Planting Guidelines

Prepare soil by tilling or loosening the top 12 to 15 inches of soil and plant from September to April indoors or outdoors (USDA-NRCS, 2014). Seed requires one month of cold stratification and direct sunlight for germination. Plant common yarrow at 1 to 2 pounds per acre into warm soil at ¼ inch depth and 3 feet apart in a sunny area (Sanders, 1905; Clark, 1998; Hebel et al., 1998; Noller, 2001; Schalau, 2009; Alaback et al., 2017). If broadcast seeding, double the seeding rate. Germination occurs within one or two weeks. Root cuttings can be propagated by placing them into warm soil in direct sunlight in the spring or fall (Sanders, 1905; Clark, 1998; Hebel et al., 1998; Schalau, 2009; Alaback et al., 2017).

### Management

Common yarrow can be slow to grow in diverse environments and prefers well drained soils (Schalau, 2009). It is fairly drought tolerant and requires little to no irrigation (Mitich, 1990; Hart, 1999; Sanecki et al., 2003; Flora of North America, 2015; PROTA, 2015). In areas with less than 1 inch of precipitation per week, water as needed. Patches of common yarrow should be divided every 3 to 4 years to encourage growth (Clark, 1998; Hebel et al., 1998). Keep area free of weeds until the plant is well established. Cutting or mowing dead, brown flower heads can promote a second round of flower production. Common yarrow does not require fertilizer to grow successfully. However, common yarrow started in containers can benefit from 5N:4P:2K fertilizer when transplanted either into the ground or to larger containers (Jensen, 2019).

Since common yarrow can be weedy, ensure it is seeded in a contained area or with other competitive plants. If common yarrow becomes weedy or prevents the success of a desired plant, it should be controlled.



## **Pests and Potential Problems**

Common yarrow is susceptible to gray mold, root rot in poorly drained soils, and powdery mildew. Pests include common leaf bugs, flea beetles, and spittlebugs found mostly in the Great Plains region and the Midwest (Schuster, n.d.; Warwick & Black, 1982).

## **Environmental Concerns**

Common yarrow can be considered weedy or invasive in some regions, particularly in disturbed sites including overgrazed rangeland. Because common yarrow can form colonies with its extensive rhizome, it can be difficult to remove once established and can create a monoculture when not controlled. Cattle will avoid grazing this plant when provided with other options, while sheep and deer may choose common yarrow to graze on (Johnson & Larson, 1999).

## **Control**

Control in unwanted areas can be achieved through diversifying the plant community. Biodiversity can limit common yarrow from forming rhizomatous colonies (Bourdôt & Field, 1985; Johnson & Larson, 1999; Sanecki et al., 2003). In agricultural systems, common yarrow can be controlled with nitrogen fertilizer application. Adding nitrogen promotes growth of the main crop and reduces growth in common yarrow (Bourdôt et al., 1985). Control can also be achieved by hand pulling plants, mowing prior to flowering, or cutting plants to prevent seeds heads from developing. Removing the root system and/or spot-treating with post-emergent herbicides can control common yarrow (Davis et al., 2013).

Please contact your local agricultural extension specialist or county weed specialist to learn what works best in your area and how to use it safely. Always read herbicide labels and safety instructions for each control method.

## **Seeds and Plant Production**

Common yarrow has high seed production from late summer to early fall, producing approximately 2.2 to 4.1 million seeds per pound (Noller, 2001). Seeds are viable for 5 to 7 years when stored in a cool, dry place around 40 to 50° Fahrenheit (Noller, 2001; Jensen, 2019). Flower heads will turn brown and become hard when seeds are ready to be harvested. Seeds can be harvested by hand or with a combine. For essential oils, harvest when it is beginning to flower and dry in the shade (Clark, 1998; Hebel et al., 1998). Seeds can be cleaned with a hammer mill and then through an air screen cleaner (Noller, 2001).

## **Cultivars, Improved, and Selected Materials (and area of origin)**

These plant materials are usually available from commercial sources as seed or container plants. There are many ornamental cultivars of common yarrow with a variety of flower colors such as white, cream, pink, yellow, red, and more (Schalau, 2009).

Cultivars should be selected based on the local climate, resistance to local pests, and intended use. Consult with your local land grant university, local extension, or local USDA NRCS office for recommendations on adapted cultivars for use in your area.

## **Literature Cited**

- Akram, M. 2013. Minireview on *Achillea millefolium* L. Journal of Membrane Biology, 246:661-663.
- Alaback P., J. McAleer, L. Matthews and L. Bilsing. 2017. Wildflowers and other plants of the Larimer County foothills region. 2nd ed. Department of Natural Resources. 235 p.
- Al-Doghairi M. and W. Cranshaw. 1999. Surveys on visitation of flowering landscape plants by common biological control agents in Colorado. Journal of the Kansas Entomological Society, 72(2):190-196.
- Bird C., G. Hilchie, N. Kondlae, E. Pike and F. Sterling. 1995. Alberta Butterflies. Provincial Museum of Alberta. Edmonton, Alberta.
- Bourdôt G. and R. Field. 1988. Review on ecology and control of *Achillea millefolium* L. (yarrow) on arable land in New Zealand. New Zealand Journal of Crop and Horticultural Science, 16(2):99-108.
- Bourdôt G., R. Field and J. White. 1985. Growth analysis of *Achillea millefolium* L. (yarrow) in the presence and absence of a competitor - *Hordeum vulgare* L. (barley). New Phytologist, 101(3):507-519.
- Chandler R., S. Hooper and M. Harvey. 1982. Ethnobotany and phytochemistry of yarrow, *Achillea millefolium*, Compositae. Economic Botany, 36(2), 203-223.
- Clark H. 1998. Finding and developing an export market for medicinal herbs. Proceedings of the Prairie Medicinal and Aromatic Plant Conference 1998. Saskatoon, SK, pp. 90 - 93.

- Davis R., B. Hunter, K. Johnson, C. Nischwitz, R. Ramirez and K. Wagner. 2013. Common turfgrass pests of Utah. Utah State University Extension, Logan, UT. 62 p.
- Flora of North America, 2015. Flora of North America North of Mexico. St. Louis, Missouri and Cambridge, Massachusetts, USA: Missouri Botanical Garden and Harvard University Herbaria.
- Hart J. 1999. Montana Native Plants and Early Peoples. Montana Historical Society Press. Helena, MT.
- Hausen B. 1979. The sensitizing capacity of Compositae plants. Part 3. Test results and cross reactions in Compositae sensitive patients. *Dermatologica* 159: 1-11.
- Hebel S., T. Burnham, W. Bell, L. Huenefeld, R. Short and T. Pier. 1998. Yarrow. The Lawrence Review of Natural Products: Facts and Comparisons. St. Louis, MO.
- Jaenson T., K. Palsson and A. Borg-Karlson. 2006. Evaluation of extracts and oils of mosquito (Diptera: *Culicidae*) repellent plants from Sweden and Guinea-Bissau. *Journal of Medical Entomology*, 43(1):113-119.
- Jensen, A. 2019. Propagation protocol for production of container (plug) *Achillea millefolium* L. Plants Grand Canyon Native Plant Nursery. Grand Canyon, Arizona.
- Johnson A. and T. Whitwell. 1997. Selecting species to develop a field-grown wildflower sod. *HortTechnology*, 7(4):411-414.
- Johnson J. and G. Larson. 1999. Grassland plants of South Dakota and the Northern Great Plains. South Dakota State University. College of Agriculture and Biological Sciences. South Dakota Agricultural Experiment Station, Bulletin 566 (revised). Brookings, SD.
- Lackschewitz K. 1991. Vascular plants of west-central Montana, identification guide, General Technical Report INT-277. USDA-USFS, Intermountain Research Station. Ogden, UT. 202p.
- Lesica P. 2002. Flora of Glacier National Park. Oregon State University Press. Corvallis, Oregon.
- Luczaj L. 2011. Changes in Assumption Day herbal bouquets in Poland: a nineteenth century study revisited. *Economic Botany*, 65(1):66-75.
- Mitich L. 1990. Yarrow - the herb of Achilles. *Weed Technology*, 4(2):451-453.
- Murray N. n.d. Weed of the Month - Common Yarrow. Wisconsin State University.
- Noller, G. 2001. Propagation protocol for production of propagules (seeds, cuttings, poles, etc.) *Achillea millefolium* L. plants Upper Colorado Environmental Plant Center. Meeker, Colorado.
- PROTA, 2015. PROTA4U web database. Grubben GJH, Denton OA, eds. Wageningen, Netherlands: Plant Resources of Tropical Africa. Available at <https://www.prota4u.org/database/> (accessed on 9/15/22).
- Sanders T. 1905. Sanders' encyclopedia of gardening. A.G.L. Hellyer 1958. Revised. W.H. and L. Collingridge Limited. New York, New York. 526 pp.
- Sanecki G., K. Sanecki, G. Wright and F. Johnston. 2003. The control of *Achillea millefolium* in the Snowy Mountains of Australia. *Weed Research* (Oxford), 43(5):357-361.
- Schalau J. 2009. Growing Yarrow. Backyard Gardener. Agriculture and Natural Resources. University of Arizona Cooperative Extension. Yavapai County. Tucson, AZ.
- Schuster J. n.d. Diseases of *Achillea* Sp. (Yarrow). Focus on Plant Problems. University of Illinois Extension, West Lafayette, IN.
- Turkington R., E. John, S. Watson and P. Seccombe-Hett. 2002. The effects of fertilization and herbivory on the herbaceous vegetation of the boreal forest in north-western Canada: a 10-year study. *Journal of Ecology* (Oxford), 90(2):325-337.
- University of Montana. 2021. Payne Family Native American Center Garden. Missoula, MT.
- USDA-NRCS. 2014. Western yarrow *Achillea millefolium* var. *occidentalis* a native forb for conservation in Montana and Wyoming. USDA-NRCS, Plant Materials Technical Note MT-103. Bridger Plant Materials Center, Bridger, MT. 6p.
- USDA-NRCS. 2022. The PLANTS Database (<http://plants.usda.gov>, 9/15/2022). National Plant Data Team, Greensboro, NC USA.
- Warwick S. and L Black. 1982. The biology of Canadian weeds. *Achillea millefolium* L. *Canadian Journal of Plant Science*. 62:163-182.
- Whitson T. and L. Burrill. 2002. Weeds of the West. 9th ed. Western Society of Weed Science in cooperation with the Western United States Land Grant Universities Cooperative Extension Services. Newark, CA.
- Zhang D., A. Armitage, J. Affolter and M. Dirr. 1996. Environmental control of flowering and growth of *Achillea millefolium* L. summer pastels. *HortScience* 31 (3):364-365.

## Citation

Mann A., M. Majeski and M. Pokorny. 2022. Plant Guide for common yarrow (*Achillea millefolium* L.). USDA-Natural Resources Conservation Service, Bridger Plant Materials Center. Bridger, MT.

Some of the information in this Plant Guide was originally compiled by Matthew D. Hurteau, Formerly USDA NRCS National Plant Data Center, published in 2001.

Published: October 2022

For more information about this and other plants, please contact your local NRCS field office or Conservation District at <http://www.nrcs.usda.gov/> and visit the PLANTS Web site at <http://plants.usda.gov/> or the Plant Materials Program web site: <http://plant-materials.nrcs.usda.gov>. PLANTS is not responsible for the content or availability of other Web sites.

In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at [How to File a Program Discrimination Complaint](#) and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: [program.intake@usda.gov](mailto:program.intake@usda.gov).

USDA is an equal opportunity provider, employer, and lender.

*Helping People Help the Land*