

COMMON LAMBSQUARTERS

(*Chenopodium album*)

SEEDLING DESCRIPTION

The most distinguishing feature of common lambsquarters is its white mealy coating. The succulent seed leaves (cotyledons) of lambsquarters are opposite and narrow with parallel edges and rounded tips. No veins are visible on either side. Leaf stalks (petioles) are about one-third the length of the seed leaves. The smooth stem below the seed leaves is light green, tan, or light maroon.

The ovate to triangular true leaves of common lambsquarters are alternately arranged and have slightly toothed or lobed edges. They are somewhat thickened and spotted with a mealy coating. Because the lower side of the leaves is nearly covered with this coating, it appears lighter than the upper side. The coating is shed as the leaf matures.

Veins are indistinct in the first few leaves but become evident in subsequent

leaves as slight ridges on both sides. The upper stem is covered with dense, white granules and the lower stem is purplish-pink. Young seedlings have vertically striated stems that become distinctly ridged when the plant matures.

BIOLOGY

Lambsquarters is a rapidly growing summer annual weed. Height averages 3 feet (90 cm), but may vary from a few inches to 6 feet (1.8 m). The extremely variable growth behavior of lambsquarters enables the plant to adapt to almost any environmental condition. Stems are erect and sturdy with freely ascending branches. Stems are often tinged with red or striped with pink, purple, or yellow.

Lambsquarters leaves vary in shape from triangular to ovate to lanceolate. They are thick with white glands that are especially dense on the lower surface.

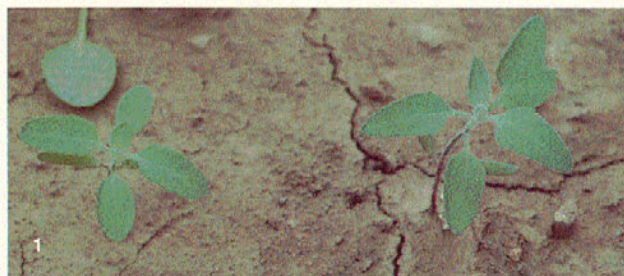
Leaf stalks are much longer than the leaves. Lower leaves may have a goose-foot shape, while upper ones are linear.

Seeds are usually round with notched edges. The seed surface is slightly roughened or glossy. Seed color varies from black to brown to brownish green. The seeds of only one plant may have all these characteristics of form and color, or a whole population may have only one type of seed.

Mature plants are pyramidal, have many branches, and are crowded with clustered spikes of dull green flowers. Flower clusters are located at the ends of stems and branches or in the crooks (axils) of the upper leaves. Flowers are small, mealy, and green.

Flowering occurs from early summer to fall. Lambsquarters flowers no matter what the day length, but a sixteen-hour day hastens flowering and maturity.

1. Seedling leaves with white mealy coating.
2. Older leaves turn green and have slightly toothed margins.
3. Mature plant loaded with flowers.



Flowers are pollinated mainly by the wind, but various insects may also assist in pollination.

Common lambsquarters is propagated by seed, a single plant producing as many as 100,000 seeds. There is believed to be a correlation between the dormancy of a seed and its color or shape. Brown seeds, which are rare, have no dormancy. Because lambsquarters has no special seed-dispersal mechanism, most seeds are deposited near the mother plant, and consequently the plants grow in patches.

Germination may be continuous in the tropics, but it usually begins mid to late May and continues until August in temperate areas. Most germination occurs at the beginning of the growing season. High nitrate levels and temperatures of 32° to 41°F (0° to 5°C) favor germination. Lambsquarters seeds are often distributed as impurities in crop seeds. Seed longevity varies with storage conditions; seeds have been known to survive thirty to forty years in soil. The life cycle of the plant itself is usually complete in about four months, depending on location and photoperiod of the season.

Lambsquarters is found at altitudes ranging from sea level to 11,000 feet (3,350 m). It grows in all inhabited areas of the world except in those with extreme desert climates. It is reported to be one of the twelve most successful colonizing species and one of the five most widely distributed plants in the world. Thriving on all types of soil and at many pH levels, lambsquarters attains its greatest size on fertile, heavy soils but can also survive on coal-pit heaps. It is one of the last weeds to be killed by frost, and its presence is one of the best indicators of good soil. If plowed under when plants are young, lambsquarters makes a good fertilizer.

SIMILAR SPECIES

Several plants from the genus *Chenopodium* resemble common lambsquarters. These include the thick-leaved goosefoot (*Chenopodium desicatum*), the oakleaved goosefoot (*C. glaucum*), and the maple-leaved goosefoot (*C. hybridum*). These goosefoot species are similar in overall aspect to lambsquarters, but differ in leaf shape, hairiness, and flower structure.

Maple-leaved goosefoot differs from lambsquarters in having thin, oval leaves with an acutely pointed tip and one to four pointed lobes on the margins. These leaves are as long as they are wide. Another difference between the two weeds is

that the flowers of maple-leaved goosefoot develop in loose, terminal clusters.

The small, oblong leaves of oak-leaved goosefoot (*C. glaucum*) have very irregular edges and whitened undersurfaces. Flowers look much like those of common lambsquarters, but the clusters are not so branched.

NATURAL HISTORY

Common lambsquarters was once thought to be a native of Europe and Asia. However, recent archaeological studies show that the seeds were stored and used by the American Blackfoot Indians during the sixteenth century, before European trade had come to the New World.

The genus name, *Chenopodium*, derives from the goose-foot shape of the leaf of many species, and the species name, *album*, refers to the mealy white sheen of the leaves. Lambsquarters is also known commonly as white goosefoot, mealweed, fat hen, pigweed, frost-blite, and baconweed.

More than likely, the seeds of common lambsquarters were harvested and stored for human consumption in prehistoric times. Many members of the goosefoot family are edible vegetables, and their seeds may be dried and ground to make flour. The plant is eaten readily by livestock when it is young, but it becomes woody and unpalatable with age.

CONTROL

The weedy nature of lambsquarters comes from its adaptability rather than from the aggressiveness that characterizes many other weeds. Lambsquarters is not destructively competitive; its survival depends primarily on seed production. Once pollination and seed set occur, so many seeds are produced that a carpet of lambsquarters can emerge even in fields frequently cultivated. Seed longevity ensures the continued presence of seedlings for years after a population is apparently controlled. New infestations of lambsquarters are patchy, but stands soon become so dense that they may smother crops.

The best control method is to prevent infestation and spreading by minimizing seed production. Tillage is another useful control method, because common lambsquarters cannot recover from uprooting or mechanical damage. While lambsquarters will germinate throughout the summer, control will be more effective if tillage is timed to correspond with peak emergence

and is repeated to allow establishment of a dense crop canopy. This tillage practice will greatly reduce the number of plants, stunt plants growing under a crop canopy, and result in few seeds. Mowing is another way to prevent seed production.

Herbicides effectively suppress lambsquarters during peak germination and when a crop canopy is established. Any postemergence herbicide recommended for broadleaved weeds may be used. For full-season suppression, herbicides with long residual action in the soil are more effective than others. But they may not be compatible with crop rotation. Lambsquarters is most competitive with crops for nutrients during its early growth stages. Because seedlings accumulate large amounts of nutrients early in the season for later use, early herbicide application is crucial to the success of any control program.

A biotype of common lambsquarters that is reportedly resistant to recommended rates of atrazine exists in Ontario, Canada. The biotype was found in a field where corn had been grown continuously for ten years and atrazine was the only herbicide applied. Experiments on this resistant variety led to the conclusion that weeds may be effectively controlled through crop rotation, herbicide rotation, and cultivation. If the atrazine-resistant biotype becomes a problem, postapplied herbicides such as dicamba (Banvel) or 2,4-D could be used for control.

For specific recommendations, consult your county extension agent or the most recent *Weed Control Manual and Herbicide Guide*, available through Meister Publishing Company, 37841 Euclid Avenue, Willoughby, Ohio 44094. Follow label instruction for all herbicides and observe restrictions on grazing and harvesting procedures.

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Where trade names appear, no discrimination is intended, and no endorsement by the Cooperative Extension Service is implied.

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