e-GRO Alert

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Identification and Control of Common Chickweed (*Stellaria media*) in Greenhouse Container Production

Originally native to Eurasia and North Africa, common chickweed was introduced to North America accidentally by early settlers transporting seed in soil or animal feed. Chickweed and other fast-growing annuals can quickly colonize bare ground. They are often referred to as pioneer species or "weedy" plants and are one of the first steps in ecological succession. When introduced to a barren landscape, they are some of the first plants to become established.

Figure 1. Common chickweed (*Stellaria media*), a common weed. Photo credits: MSU Plant & Pest Diagnostics.

Its nectar and pollen attract bees, butterflies and songbirds, and it also acts as a host plant for many butterfly and moth species (Missouri Department of Conservation [MDC]). While common chickweed can add ecological value in a conservation sense, its proficiency at spreading quickly and covering large patches of ground makes it a nuisance to growers, and thus it is classified as a weed (Fig. 1). In commercial greenhouse settings common chickweed can restrict winter crop production by competing for space, light, and nitrogen. Common chickweed can also serve as a host plant for unwanted insects such as lygus bugs and thrips and sometimes acts as a reservoir host for tomato spotted wilt virus and cucumber mosaic virus (MDC).

Biology of Common Chickweed:

Habitat: Common chickweed is a winter annual in the Caryophyllaceae (pink) family and grows most vigorously in late winter and early spring. Its preferred growing conditions include moist, neutral soil, and it can thrive in both full sun or partial shade. It grows prosperously in fertile soil, particularly soil rich in Nitrogen (MSUE), but can also flower and send seed out in infertile soil but at a smaller plant size.

Growth Habits: Common chickweed has a creeping, spreading growth habit and can become very dense (Fig. 2). It branches extensively at the base and typically radiates out horizontally, low to the ground, creating a mat like appearance. This mat-like growth habit can help reduce erosion in the winter months by keeping the soil secure within its root system.

Root System: Root system is shallow and fibrous (Chandran 2020, North Carolina State University [NCSU]). In a greenhouse setting the creeping stems can overlap between pots and take hold by rooting, creating a connected system of roots that spans over multiple pots. It can also creep upwards from the ground when given the opportunity and can crowd the aisles and walls.

Shoots: Stems branch out horizontally over large surfaces and can be brown, copper, or green. Common Chickweed have a line of very small white hairs running down these stems.

Leaves: The leaves are opposite from each other, mostly hairless and oval shaped (Fig. 4). They are rounded at the tip and truncate at the base, straight and perpendicular to its stem. They are also slightly tapered at the tip.

Figure 2. Common chickweed in its natural dense growth habit. Photo credits: MSU, Plan &Pest Diagnostics.

Figure 3. Seedling of common chickweed. Photo credits: MSU, Plan &Pest Diagnostics.

Figure 4. Common chickweed leaves are opposite from each other, oval shaped and slightly tapered at the tips. Photo credits: The Forager's Year https://foragersyear.wordpress.com/2012/07/17/chickweed-stellaria-media-winters-edible-weed/

Figure 5. Common chickweed flower contains 5 white petals that are deeply lobed giving the appearance of ten petals. Photo credits: MSU, Plan &Pest Diagnostics.

Figure 6. Rounded oval shaped seeds inside cylindrical capsule. Photo credits: MSU, Plan &Pest Diagnostics.

Flowers: Flowers are very small and occur both in clusters and solitarily. Around each flower there are 5 green sepals at the base that are at least as long as the petals and resemble leaves. The flower itself contains 5 petals that are white and deeply lobed (Fig. 5), so that each petal looks like two, giving the appearance of ten petals (MDC). The flowers open in the morning and remain open for about 12 hours. They do not open in poor weather, and the leaves fold up at night to protect the vulnerable buds of new shoots (NCSU).

Fruit and Seeds: After pollination, each flower is replaced by a light brown, cylindrical seed capsule that has 6 small teeth along its upper rim. These seed capsules can contain 10-20 seeds (Fig. 6), and sometimes more. When mature, seeds are reddish brown, and a rounded oval shape. In greenhouses, transplanting, repotting, and moving pots can expose dormant seeds to light and prompt an infestation in and around the greenhouse.

Propagation: Common chickweed spreads both by reseeding itself and vegetatively by rooting at the leaf nodes along the stems. This happens quickly in moist soil (Cornell CALS). It sets flowers and seeds at the same time so it can spread rapidly in the right conditions (NCSU). Mature seeds can germinate without a dormancy period. The seeds germinate when soil temperatures reach about 59°F; the optimal temperature range is 54° to 68°F, with some emergence in late summer to early fall and another in early spring (Chandran, 2020). If the soil is very moist, seeds can sprout at much higher temperatures.

Seedlings: When propagated through seeds, most seedlings emerge from a soil depth of less than one inch, with a maximum emergence depth of about 2 inches (MSUE). The seeds typically germinate at or very near to the soil surface and can emerge in large numbers after irrigation or rain. The deeper the seeds are buried or the drier the soil, the less likely it is that the seeds will germinate and the seedlings that do germinate will likely not survive. Due to its ability to produce large numbers of seeds in lower

temperatures, common chickweed rapidly colonizes any cool, moist area before winter or spring crops become competitive (MDC). Common chickweed also does very well in habitats that fall outside of the ideal growing conditions, which is why it has become such a prevalent weed species in North America.

Management:

The first step in any pest-management program is scouting greenhouse and surrounding areas for weeds. It can be done by simply walking and recording the species encountered.

Non-chemical control: Chickweed should be removed before it flowers. It is a copious seeder with a very short interval between germination to flowering (four to six weeks). If chickweed is an issue in a greenhouse, frequent hand weeding (every two to three weeks) will prevent further spread. In container production, organic mulch such as pine bark, wood chips, rice hulls can provide effective control if applied at depths of 1-2 inches.

Chemical control: Herbicides such as those that contain flumioxazin (Broadstar, SureGuard) and indaziflam (Marengo, Specticle) are effective preemergence herbicide options. For postemergence control pelargonic acid (Scythe) can be an option for greenhouse growers. However, for chemical control inside greenhouses, it is always recommended to read the label of herbicide carefully before applying and make sure the ornamentals are on the label and try to avoid over-the top applications. Spot spraying or directed applications are recommended to avoid severe injuries to the ornamental crops.

References:

Chandran, Rakesh. “Common Chickweed.” Extension, West Virginia University Extension, June 2020, extension.wvu.edu/lawn-gardening-pests/weeds/common-chickweed. Accessed 1 May 2025.

“Common Chickweed.” CALS, Cornell University College of Agriculture and Life Sciences , cals.cornell.edu/weed-science/weed-profiles/common-chickweed#:~:text=Leaves%20are%20broadly%20teardrop%20to,%2D100%20cm)%20in%20diameter. Accessed 30 Apr. 2025.

“Common Chickweed.” Common Chickweed Field Guide , Missouri Department of Conservation, mdc.mo.gov/discover-nature/field-guide/common-chickweed#:~:text=Because%20common%20chickweed%20is%20a,nectar%2C%20pollen%2C%20or%20both. Accessed 30 Apr. 2025.

“Common Chickweed.” Division of Plant Sciences, University of Missouri, weedid.missouri.edu/weedinfo.cfm?weed_id=280. Accessed 3 May 2025.

“Common Chickweed.” MSU Extension Field Crop Production, Department of Plant, Soil, and Microbial Sciences , www.canr.msu.edu/weeds/extension/common-chickweed. Accessed 1 May 2025.

“Stellaria Media.” Stellaria Media (Birdweed, Chickenwort, Chickweed, Common Chickweed, Starweed, Starwort, Winterweed) | North Carolina Extension Gardener Plant Toolbox, NC State University, plants.ces.ncsu.edu/plants/stellaria-media/. Accessed 1 May 2025.

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