

# CHICKWEEDS

*Integrated Pest Management for Home Gardeners and Landscape Professionals*

Two species of chickweed, common (*Stellaria media*) and sticky (*Cerastium glomeratum*), are widespread in California. Both are winter annuals that grow easily in gardens, low-maintenance lawns, and agricultural areas. Mouseear chickweed (*Cerastium fontanum* ssp. *vulgare*) can also be found invading turf. Common chickweed is found in well-watered areas, but sticky chickweed can tolerate somewhat drier sites. Common chickweed is known to be a reservoir for insect pests and plant viruses. As the common name implies, seeds of common chickweed are a preferred food for chickens and many other birds.

Its adaptability to almost all environmental conditions makes common chickweed a very widespread and successful weed. It can start producing seeds within five weeks of germination and can continue to produce seeds for weeks or even months thereafter. Seeds can germinate (sprout) soon after they disperse from the plant and require no further ripening as do seeds of many other weeds.

## IDENTIFICATION AND LIFE CYCLE

*Common chickweed* is a prostrate or erect, somewhat succulent annual that often forms a dense mat. In lawns, it rarely grows higher than 2 inches, but can be taller (4 to 6 inches) and less compact in gardens or under shaded conditions. The stems have a diagnostic band of hairs along one side and the bright green smooth leaves grow opposite each other on each node. The leaves have an obvious pointed tip (see Fig. 1). The flowers are small with five white petals. However, the petals are deeply divided so the flower ap-



Figure 1. Common chickweed, *Stellaria media*.

pears to have 10 petals. The numerous seeds are borne in capsules at the end of the stalk. Roots are shallow and fibrous. Common chickweed will grow in a wide range of soils but does particularly well in neutral pH soils with high nitrogen and poorly in low pH or acid soils.

*Sticky chickweed* is similar in appearance to common chickweed, but has a more upright growth habit. The

leaves as well as stem are hairy, giving the plant a grayer appearance. The abundance of hairs, some with glandular secretions, gives the plant a sticky feel.

Both sticky and common chickweed are annual weeds. The seeds germinate from January to early March in cooler areas when soil temperatures reach about 59°F; the optimal temperature range is 54° to 68°F. However, if

the soil is very moist, seeds can sprout at much higher temperatures. The seeds typically germinate at or very near to the soil surface. Germination can be in large numbers after an irrigation or rain. The deeper the seeds are buried or the drier the soil, the less likely it is that the seeds will germinate or the seedlings will survive. Mature seeds can germinate without a dormancy period. Chickweed can complete its lifecycle in 5 to 6 weeks.

### IMPACT

When growing without competition from other plants, common chickweed can produce approximately 800 seeds and it takes 7 to 8 years for the seed bank (supply of viable seeds in soil) to be 95% depleted, insuring an infestation for many years. Because of its ability to produce large numbers of seeds under cool temperatures, common chickweed rapidly colonizes any cool, moist area before winter or spring crops can become competitive. In commercial situations common chickweed can limit winter vegetable production by competing for space, light, and nitrogen. Additionally, common chickweed can serve as a host for insect pests such as lygus bugs and thrips as well as a reservoir host for tomato spotted wilt virus (TSWV) and cucumber mosaic virus (CMV).

In turf and landscape plantings, common and sticky chickweed can be unsightly, reducing the aesthetic value. In cool, wet conditions common chickweed forms a dense mat of spreading stems that may root at the nodes. This increases the difficulty of hand weeding or hoeing.

### MANAGEMENT

Home gardeners should rely primarily on nonchemical control methods such as hand weeding, cultivation, mulches, and solarization when possible. Herbicides should only be used where the weed covers a very large area or where non-chemical weed management methods are difficult to adapt to the site. The likelihood of crop injury or application to plants that are not on the herbicide label is very high due to

the wide variety of plants grown by home gardeners.

Chickweed should be controlled before it flowers. This can be difficult due to the short period between germination and flower production. However, regular monitoring and removal of plants from the site will prevent seeds from developing and accumulating in the soil (seed bank). It is important not to only remove the plants from the ground but also remove them from the site; common chickweed can reroot from stem nodes in moist areas.

### Cultural Control

Cultivation, including hand weeding, will effectively control chickweed if done early. It is most effective if the soil is dry and plants are small. Cultivation when plants are large and soil is moist can lead to spread of the weed through re-rooting. Under this situation, the weeded debris should be removed. Chickweed germination decreases with depth of the seed. Turning the soil over can reduce seed germination, but may also bring other weed seeds closer to the surface. Monitor the soil surface for chickweed seedlings throughout late fall and winter and then remove them by shallow cultivation or by hand pulling.

Solarization using clear plastic mulch is a method of heating the soil to temperatures lethal to seeds and other pests. It is an effective method for controlling many annual weeds including the chickweeds. If solarization is done in late summer and the soil is not disturbed, subsequent winter crops can develop a canopy and become more competitive before other winter weeds germinate. See UC ANR Publ. 21377 for details of soil solarization.

Using an organic mulch such as wood chips, at least two inches deep, will reduce the amount of weed seeds germinating by limiting light and serving as a physical barrier. Synthetic mulches such as landscape fabrics may also be used. In landscaped areas, they should be covered with an

additional layer of mulch (rock or bark) to reduce deterioration of the fabric by UV radiation. Vegetable gardens also can utilize black plastic, both as mulch into which seeds or transplants are placed and also between rows.

In turf, the primary method of control is to maintain a thick vigorous lawn. This will prevent chickweed seedlings from getting established. Deep, infrequent irrigation also discourages chickweed infestations. Follow fertilization guidelines as recommended for a particular turf species and avoid overapplication of nitrogen. For more detailed fertilizing information see the online UC Guide to Healthy Lawns, [www.ipm.ucdavis.edu/TOOLS/TURF/](http://www.ipm.ucdavis.edu/TOOLS/TURF/), or download *Practical Lawn Fertilization*, UC ANR Publ. 8065.

### Biological Control

Other than grazing by sheep and birds, there are no commercially available biocontrol agents for the chickweed species.

### Chemical Control

In general, nonchemical controls are the safest method for weed control in home gardens and landscapes. When cultural control methods cannot be used, such as on very large areas, in weakly growing turf, or in professionally managed landscapes, herbicides may be an alternative. However, they must be applied at a time when they are most effective for controlling chickweeds and in a way that prevents injury to desired plants. In both vegetable gardens and landscaped areas, mulches, cultivation, and hand weeding would be preferred. For professional landscapers, an herbicide can be helpful as a preemergent treatment when transplanting annuals for fall color or in woody perennial beds where mulches are not used.

**Preemergent products.** Preemergent herbicides must be applied before weed seeds germinate. Therefore, they are most effective if applied in late fall or early winter. It is important to follow the label directions regarding application method. Always check to see if the material should be mixed

into the soil or not and whether the soil can be disturbed after application. Some products can only be used in ornamental areas or turf and must not be applied to areas where food crops will be grown. The label will also contain that information.

**Postemergent products.** Postemergent herbicides are applied to weeds after they have emerged from the soil. These are most effective when applied to weed seedlings. Postemergent

products will injure any plant that is susceptible, including desired plants. Products containing diquat, glyphosate, or glufosinate are nonselective postemergent herbicides; they will injure most plants they encounter and should not be used near desired plants. Other postemergent herbicides listed in Table 1 are selective against broadleaf species and generally will not injure most grasses. This makes them useful materials in turf lawns, but

they should not be used in landscape beds unless the desired plants can be protected from the spray. Products containing triclopyr will injure warm-season grasses like bermudagrass and kikuyugrass, but are safe to use in cool-season grasses like fescue. As with the preemergent herbicides, information regarding plant safety and appropriate use of the herbicide can be found on the product label. Table 1 lists the active ingredient in

<b>Table 1. Herbicide Products Available for Chickweed Control in Home Gardens, Turf, and Landscapes.<sup>1</sup></b>	
<b>PREEMERGENT</b>	
<b>Active ingredient</b>	<b>Most appropriate use</b>
<b>BENEFIN</b> Often a component of “weed and feed” products for lawns. <sup>2</sup> Do not use on vegetables. Apply after plants are well established.	turf, landscaped beds
<b>DITHIOPYR</b> Often a component of “weed and feed” products for lawns. <sup>2</sup> Apply after plants are well established. Do not use on food crops.	turf, landscaped beds
<b>ORYZALIN</b> Do not use on vegetables. Check label of specific product to see if registered for tree fruits and nuts or turf species. Apply after plants are well established and only on non-bearing fruit or nut trees.	turf (some species), landscaped beds
<b>PENDIMETHALIN</b> Often a component of “weed and feed” products for lawns. <sup>2</sup> Apply after plants are well established.	turf
<b>PRODIAMINE</b> Often used as a component of “weed and feed” products for lawns. <sup>2</sup> Apply after plants are well established. Do not disturb soil after application.	turf
<b>TRIFLURALIN</b> Often a component of “weed and feed” products for lawns. <sup>2</sup> Certain products allow for use on vegetables—consult label of specific product.	some vegetables, turf (some species when commercial product is packaged as a combination with benefin)
<b>POSTEMERGENCE</b>	
<b>DICAMBA</b> Often a component of “weed and feed” products for lawns. <sup>2</sup> Will injure or kill broadleaf plants. Do not use near any desired broadleaf ornamental or food crops.	turf
<b>DIQUAT</b> Most effective when applied to small plants. Non-selective contact herbicide—will kill or injure any plant it contacts. Does not translocate (move within the plant). Do not use on food crops.	spot treat in landscapes or broadcast spray in unplanted areas to prepare for planting
<b>GLUFOSINATE</b> Most effective when applied to small plants. Non-selective herbicide will kill or injure any plant that it contacts. Do not use on food crops.	spot treatments in lawn or landscapes or broadcast spray in unplanted areas to prepare for planting
<b>GLYPHOSATE</b> Most effective when applied to small plants but can also control larger ones. Non-selective herbicide—will kill or injure any plant that it contacts. Avoid drift by using a shield on the sprayer or shielding desired plants from spray. Translocates (moves within the plant).	spot treatments in lawn or landscapes or broadcast spray in unplanted areas to prepare for planting
<b>TRICLOPYR</b> Will injure or kill broadleaf plants. Should not be used near any desired broadleaf ornamental or food crop. May also be absorbed by tree and shrub roots. Should be used well away from any desired trees and shrubs. Can injure most warm-season turfgrasses. Consult label for specific uses.	cool-season turf species (e.g., fescue), unplanted areas
<sup>1</sup> Keep in mind that home gardeners should rely primarily on nonchemical methods.	
<sup>2</sup> Turf applications. Unless the turf is expected to have or has a heavy weed infestation, weed and feed combinations are not recommended. It is much more effective to use the correct fertilizer at the appropriate time and overseed to cover bare or thin spots.	

herbicides that provided good control of chickweed in field tests and can be found in products sold for nonprofessional landscape and garden use.

### SUGGESTED READING

Elmore, C. L., J. J. Stapleton, C. E. Bell, and J. E. DeVay. 1997. *Soil Solarization: A Nonpesticidal Method for Controlling Diseases, Nematodes, and Weeds*. Oakland: Univ. Calif. Div. Agric. Nat. Res., Publ. 21377.

Henry, J. M., V. A. Gibeault, and V. F. Lazaneo. 2002. *Practical Lawn Fertilization*. Oakland: Univ. Calif. Div. Agric. Nat. Res. Publ. 8065.

UC Statewide IPM Program. Soil solarization method described online, <http://www.ipm.ucdavis.edu/TOOLS/TURF/SITEPREP/soilsolar.html>.

UC Statewide IPM Program. Lawn fertilization methods described online,

For more information contact the University of California Cooperative Extension in your county. See your telephone directory for addresses and phone numbers.

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To simplify information, trade names of products have been used. No endorsement of named products is intended, nor is criticism implied of similar products that are not mentioned.

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<http://www.ipm.ucdavis.edu/TOOLS/TURF/MAINTAIN/fertilize.html>.

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Holm, L. G., D. L. Plucknett, J. V. Pancho, and J. P. Herberger. 1991. *The World's Worst Weeds: Distribution and Biology*. Krieger Publishing Co. Florida.

Weed Research Information Center. 2004. *Weed Susceptibility Chart*. Davis, California: University of California. Available online, <http://WRIC.ucdavis.edu>. ❖

#### WARNING ON THE USE OF CHEMICALS

Pesticides are poisonous. Always read and carefully follow all precautions and safety recommendations given on the container label. Store all chemicals in the original labeled containers in a locked cabinet or shed, away from food or feeds, and out of the reach of children, unauthorized persons, pets, and livestock.

Confine chemicals to the property being treated. Avoid drift onto neighboring properties, especially gardens containing fruits or vegetables ready to be picked.

Do not place containers containing pesticide in the trash or pour pesticides down sink or toilet. Either use the pesticide according to the label or take unwanted pesticides to a Household Hazardous Waste Collection site. Contact your county agricultural commissioner for additional information on safe container disposal and for the location of the Household Hazardous Waste Collection site nearest you. Dispose of empty containers by following label directions. Never reuse or burn the containers or dispose of them in such a manner that they may contaminate water supplies or natural waterways.

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