



Crabgrass (*Digitaria spp.*) Control in Home Lawns

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Crabgrass (*Digitaria spp.*) is one of the most common and difficult-to-control summer annual grassy weeds in cool season turf. Two species of crabgrass are known to occur in the North-eastern US; large crabgrass (*Digitaria sanguinalis*) and smooth crabgrass (*Digitaria ischaemum*). Crabgrass begins germinating as the temperature in the top inch of soil surface approaches 55°F and remains there or higher for four to five consecutive days. Crabgrass reproduces by seeds and is a prolific seed producer; a single plant can produce over 140,000 seeds.



Image 1: Large crabgrass seedling.

IDENTIFYING CHARACTERISTICS

Seedlings are upright, the first leaf is lanceolate to linear in shape and is about twice as long as it is wide (Image 1). The youngest leaf is rolled in the bud. In large crabgrass, sheaths and blades are covered with dense hairs whereas the smooth

crabgrass lacks hairs on sheaths and blades. Occasionally, smooth crabgrass has sparse hairs on the lower leaf surface. The mature plant has a prostrate or ascending growth habit (Image 2). The stem is round with nodes and internodes. Stems usually bear roots where nodes touch the ground. The ligule is large, membranous, and toothed. Auricles are absent.



Image 2: A mature crabgrass plant.

Since crabgrass produces a large number of seeds which remain viable in soil for many years, it is impossible to achieve complete control of crabgrass in one growing season. No single weed control method, be it an herbicide, a cultural or a mechanical control method, can provide complete control of crabgrass in a season. A good crabgrass management program should include cultural and mechanical control methods,

and the use of herbicides over multiple years. Maintaining a dense, vigorously growing, and healthy stand of turfgrass is the best strategy to manage most turf weeds including crabgrass.



Image 3: A crabgrass seedhead.

MANAGEMENT

Cultural Control

- ✓ **Proper mowing height and frequency**
Proper mowing height and frequency is an important practice to keep weeds under check and maintain aesthetic appeal of the turfgrass. Remove no more than 1/3 of the blade at one mowing. For more info on mowing visit: <http://ag.umass.edu/turf/best-management-practices-for-lawn-landscape-turf/mowing>
- ✓ **Precise watering rate and frequency**
Typically, turfgrass needs an inch of water per week whether from irrigation or rainfall. It is recommended to apply one or two heavy irrigations depending on soil type, weather conditions etc., than multiple light irrigations. For more on turfgrass irrigation visit: <http://extension.missouri.edu/explorepdf/agguides/hort/g06705.pdf>
- ✓ **Proper fertilization and liming.**
Proper application timing and rate of fertilizers and lime are essential to maintain a vigorous and healthy turfgrass

resistant to weed invasion. Get your soil tested at least once in three years to determine the fertilizer and liming requirements. Liming helps to maintain a soil pH that favors optimal availability of nutrients for turfgrass. For more information on proper lawn liming visit: <https://ag.umass.edu/turf/fact-sheets/soil-ph-liming>

- ✓ **Aeration to reduce soil compaction**
Visit the following webpage for detailed information on core aeration: <https://ag.umass.edu/turf/fact-sheets/management-of-compaction-coring>
- ✓ **De-thatching as required**
Visit the following webpage for detailed information on dethatching: <https://ag.umass.edu/turf/fact-sheets/what-is-thatch>

Chemical Control

Crabgrass can effectively be controlled with herbicides. The best shot homeowners can have to stop it from growing in their home lawns is the application of a preemergence herbicide. The best time to apply a preemergence herbicide is before or at the time Forsythia is in full bloom or when soil temperatures reach 55° F for four to five consecutive days.

Several preemergence crabgrass control products are available for homeowners. They are usually combined with fertilizer in 'weed and feed' products. Table 1 contains some of the preemergent crabgrass products commonly sold by retail home garden and lawn care centers. All of the preemergence herbicides (Table 1) except for those containing "Dithiopyr" will not control emerged crabgrass. "Dithiopyr" containing products will control crabgrass seedlings up to the 3 to 5 tillers stage. Ideally, preemergence herbicides can provide

crabgrass control for 2 to 3 months or even longer. However under conditions of unusually high summer temperatures and rainfall/irrigation, preemergence herbicides break down faster resulting in a lawn infested with a late flushes of crabgrass. Caution: For seeding or reseeding your lawn, consult the product label for the recommended waiting period (usually three to four months).

Crabgrass can also be controlled after emergence with postemergence herbicides (Table 2). The postemergence herbicides; Acclaim Extra (fenoxaprop-p-ethyl), Drive XLR8 (quinclorac), Tenacity (mesotrione), and Pylex (topramezone) provide effective post-emergence control of young crabgrass. However, these products are available only for commercial applicators use.

For homeowners, the available postemergent crabgrass herbicides include “**Crabgrass Killer for Lawns**”, a fenoxaprop-p-ethyl product sold by Bayer Advanced, “**Weed B Gon MAX Plus Crabgrass Control Ready-to-Use**” sold by Ortho, “**All-In-One Lawn Weed & Crabgrass Killer-Ready-to-Spray (RTS)**” by Bayer advanced, “**Trimec Crabgrass Plus Lawn Weed Killer**” by Gordon, “**Wipe-Out Crabgrass Killer plus**” by Green Light, and “**Crab-E-Rad plus**” by Monterey. Of these products, “**Crabgrass Killer for Lawns**” contains fenoxaprop -p-ethyl and will control crabgrass and a many other annual grasses. All other products containing 2, 4-D, dicamba, and quinclorac will also control several annual and perennial broadleaf weeds. The herbicide “**Crabgrass Killer for Lawns**” has only grass activity and will be safe around many desirable broadleaf ornamental

flowers and trees. Herbicides containing 2, 4-D, dicamba, and quinclorac should not be allowed to come in contact with sensitive ornamental plants. Both 2, 4-D and dicamba can move off target by vapor or particle drift and injure the adjacent sensitive broadleaf ornamentals. Do not allow drift on to or near desirable plants and do not spray near sensitive plants on a gusty/windy day when the wind velocity exceeds 5 mph and is moving in the direction of adjacent sensitive plants. Do not apply when the air temperature exceeds 80 F. For details consult the product label. Often, both preemergence and postemergence herbicides will be required in some lawns to maintain acceptable levels of crabgrass control year round. Always be sure to read the herbicide label and follow all directions for the safest and effective weed control.

The mentioning of trade names in this publication is solely for the purpose of providing specific information. The CAES does not guarantee or warranty the products named, and references to them in this publication do not signify our approval to the exclusion of other products of suitable composition.

INFORMATION SOURCES

- 1) Biology and Management of Crabgrass.
<https://ag.umass.edu/turf/fact-sheets/biology-management-of-crabgrass>
- 2) Crabgrass Control in Home Lawns:
<http://msue.anr.msu.edu/resources/crabgrass-control-in-home-lawns>.
<https://pubs.ext.vt.edu/450/450-142/450-142.pdf.pdf>
- 3) Crabgrass and Goosegrass Control in Cool Season Turfgrass.

<http://www.tbiunlimited.com/assets/crabgrass%20control%20for%20home%20lawns.pdf>

- 4) Turf Tips-Smooth Crabgrass.
<http://purdueturftips.blogspot.com/2015/04/weed-of-month-for-march-2015-is-smooth.html>

- 5) Postemergence Crabgrass
Herbicides: Acclaim Extra and Drive.

<http://njaes.rutgers.edu/pubs/plantandpestadvisory/2009/ln070909.pdf>

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Table 1: Preemergence Herbicides for Crabgrass Control in Home Lawns.

Herbicide	Active ingredients*	Formulation	Manufacturer
Crabgrass pre-emergent plus fertilizer	Dithiopyr (0.15%)	Granular	Lesco
Crabgrass preventer with Dimension	Dithiopyr (0.25%)	Granular	GreenLight
Crabgrass and Weed Preventer	Dithiopyr (0.17 %)	Granular	Vigoro
Crabgrass and Spurge Preventer	Dithiopyr (12.7 %)	Liquid Conc**.	Monterey
Sta-green Crab-Ex	Dithiopyr (0.17 %)	Granular	Sta-Green
Crabgrass Preventer	Prodiamine (0.38%)	Granular	Pennigton
Balan 2.5G Preemergent Herbicide	Benefin (2.5%)	Granular	LebanonTurf
Hi-Yield Crabgrass Preventer	Benefin (1.33%) plus Trifluralin (0.67%)	Granular	VPG
Team Pro	Benefin (0.43%) plus Trifluralin (0.43%)	Granular	LebanonTurf

*Do not use preemergence herbicides on new turfgrass seedlings or before seeding/re-seeding an area (check the product label for recommended seeding/reseeding intervals). ** Conc.-concentrate.

Table 2: Postemergence Herbicides for Crabgrass Control in Home Lawns.

Herbicide	Active ingredients*	Formulation	Manufacturer
Crabgrass Killer for Lawns	fenoxaprop -p-ethyl 0.41%	Liquid-RTS*	Bayer Advanced
All-In-One Lawn Weed & Crabgrass Killer Ready-to-Use	2, 4-D (0.313%), Dicamba (0.029%), Quinclorac (0.104%)	Liquid-RTU***	Bayer Advanced
All-In-One Lawn Weed & Crabgrass Killer Concentrate	2, 4-D (4.85%), Dicamba (0.45%), Quinclorac (1.61%)	Liquid-Conc**	Bayer Advanced
Weed B Gon MAX Plus Crabgrass Control Ready-to-Use	2, 4-D (0.12%), MCPP (0.22%), Dicamba (0.05%), Quinclorac (.10%)	Liquid-RTU	Ortho
Trimec Crabgrass Plus Lawn Weed Killer	2, 4-D (6.42%), Dicamba (0.60%), Quinclorac (2.13%)	Liquid-Conc	Gordon
Wipe-Out Crabgrass Killer plus	2, 4-D (7.3%), Dicamba (0.84%), Quinclorac (3.5%)	Liquid-Conc	Green Light
Crab-E-Rad plus	2, 4-D (6.56%), Dicamba (0.68%), Quinclorac (4.08%)	Liquid Conc.	Monterey

*RTS-Ready to Spray. ** Conc.-concentrate. ***RTU-Ready to Use. RTS and RTU need not be diluted.