



## Centipedegrass

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Centipedegrass (*Ermochola ophiuroides* [Munro] Hack.) is a medium-green, medium-textured, slow growing turfgrass adapted to low-fertility conditions. Native to China and Southeast Asia, centipedegrass was introduced into the USA in 1916 and is a common turfgrass in the southeastern U.S. mainland and Hawai'i.

Centipedegrass spreads by extending short, thick, leafy stolons (Photo 1); it produces no rhizomes. This species produces a dense mat of prostrate, low-growing stems and leaves. The individual leaf blades rarely grow to more than 4 inches long. The leaf and stolon texture of centipedegrass is usually coarser than bermudagrass (*Cynodon* spp.) and finer than St. Augustinegrass (*Stenotaphrum secundatum* [Waltz] Kuntze). Centipedegrass is often visually confused with St. Augustinegrass. The two species differ in that centipedegrass has leaf tips (Photo 2) that are more pointed than St. Augustinegrass, and centipedegrass has alternating leaves at the nodes, whereas the leaves of St. Augustinegrass are arranged opposite to one another on the stem.



Centipedegrass has poor drought tolerance and medium shade tolerance. It does not tolerate shade as well as St. Augustinegrass. The slow recuperative potential and limited traffic tolerance of centipedegrass make it a poor choice for heavily used turfgrass areas such as sports fields and turfed walkways. Centipedegrass has poor salt tolerance and therefore should not be used in areas subjected to salt spray (i.e., near the beach). Centipedegrass is better adapted to heavy soils than most other turfgrasses grown in Hawai'i. This species performs well in moist, acidic, coarse-textured (or moderately heavy)



\*This revises a Nov. 2000 publication of the same title by D.H. Hensley, C.M. Murdoch, J. Tavares, and J. Deputy.

soils of low fertility. Centipedegrass performs poorly in alkaline soils; incidences of iron chlorosis are common in soils with high pH.

Centipedegrass is well suited for use in home lawns. It is sometimes called “the lazy man’s grass” and is increasing in popularity as a lawn and utility turf because of its low maintenance requirements—it seems to thrive under minimal care. Although centipedegrass turf has some limitations, particularly iron chlorosis on high-pH soils, it has a lot to offer for reduced-maintenance sites in areas having a favorable environment for it. The cost of its establishment is offset in a short time by reduced maintenance expenditures.

### Cultivars

As of March 2008, not all of the cultivars listed here are available in Hawai‘i due to quarantine restrictions. Contact the authors (brosnan@hawaii.edu or deputy@hawaii.edu) for more information.

**Common** centipedegrass can vary in stem color; green-, red-, and yellow-stemmed selections exist. ‘Chinese Red Stem’ was the first commercially available variety in the United States. Often, packages of common centipedegrass seed contain a mixture of red- and yellow-stemmed strains. Common centipedegrass has a medium green color and texture.

‘**AU Centennial**’ is a dwarf, vegetatively propagated cultivar with improved color, density, and cold tolerance compared to common types. Released by Auburn University in 1983, ‘AU Centennial’ is slightly more tolerant of alkaline soil than ‘Oklawn’ or common centipedegrass. ‘AU Centennial’ is not often used in Hawai‘i.

‘**Hammock**’ is a proprietary cultivar distributed by Environmental Turf Inc. (Avon Park, FL). ‘Hammock’ is marketed as having improved heat and drought tolerance compared to other centipedegrass cultivars, as well as a darker green color.

‘**Oklawn**’ is a blue-green, medium-textured, slow-growing cultivar released by Oklahoma State University in 1965. It tolerates heat, insects, and disease, and is adapted to both full sun and partial shade. ‘Oklawn’ is commonly established from plugs, sprigs, or sod, despite the fact that it produces viable seeds.

‘**TifBlair**’ was selected from irradiated common centipedegrass seeds planted in Blairsville, Georgia, and was released by the University of Georgia in 1997. ‘Tifblair’ offers superior growth in acidic soils, high tolerance to soil aluminum, and a deep root system. ‘TifBlair’ is mar-

keted on the U.S. mainland for its superior low-temperature hardiness, cold tolerance, and fall color retention.

### Establishment

Centipedegrass can be propagated from seed or vegetatively by sodding, stolonizing, sprigging, or plugging. Seeding is the most common method of establishment in Hawai‘i.

### Seeded establishment

Seeding is the most common method of centipedegrass establishment; however, centipedegrass seed germination is generally low. While centipedegrass seed is expensive, establishment from seed is cheaper than any method of vegetative propagation.

Seeding rates range from 1 to 2 pounds of seed per 1000 square feet. Seed is often applied with a rotary spreader (Photo 3). To promote uniform coverage, divide the seed into two equal portions and apply it in two directions across the area. Due to the small size of centipedegrass seed, it is recommended that a mixture of seed and dry silica sand be spread rather than pure seed by itself. Coral sands should not be used. For each pound of seed, add 20 lb of dry silica sand.

After seeding, lightly roll the area to promote seed-to-soil contact, and apply a light (< ¼ inch) layer of topdressing (e.g., soil, mulch, compost, or hydromulch). Seeds germinate slowly (in 3–5 weeks). The initial growth and spreading will remain slow until the stolons begin to creep out into the surrounding area.

During seeded establishment, frequent, light irrigation (4–6 times daily) is recommended for at least 3–5 weeks. Once complete turfgrass cover is reached, newly established centipedegrass stands should be continue to be irrigated regularly (at least twice daily) for 6–10 weeks due to the shallow rooting of this species.

### Mowing

Mow centipedegrass with a rotary mower at a height of 1½–2 inches. Mow frequently enough so as not to remove more than one third of the leaf blade per mowing. The slow vertical growth of centipedegrass allows for it be mowed less frequently than St. Augustinegrass or bermudagrass. During periods of stress (i.e., from moisture, shade, etc.) increase the mowing height to 2–2½ inches. Mowing centipedegrass below 1–1½ inches reduces density and encourages weed invasion. Avoid close mowing and do not scalp the turf.



Photo: L. Yoder, San Diego Padres

### Nutrient management

After establishment, centipedegrass requires few applications of fertilizer. Apply 1 pound of slow-release nitrogen per 1000 square feet per year in the spring (March to May). Nitrogen can be applied using a complete fertilizer if soil tests detect phosphorus or potassium deficiencies. Complete fertilizers for use on centipedegrass should be low in phosphorus and high in potassium, with an N:P:K ratio of approximately 1:1:2 or 1:1:3. Excessive levels of phosphorus in the soil can lead to iron deficiencies in centipedegrass. Lawns on sandy or coarse-textured soils may require an additional, light, slow-release nitrogen application in early fall. No more than 2 pounds of N per 1000 sq ft should be applied annually. This is considerably less than other warm season turfgrasses.

Centipedegrass thrives on moderately acidic soils with a pH of 5–6. Iron chlorosis is a problem where the soil pH is 6.5 or above or where there are high levels of calcium or phosphorus in the soil. Iron chlorosis can be corrected by applying chelated iron or ferrous sulfate as necessary to maintain color. Frequent iron applications, sometimes monthly, may be required in severe situations. On alkaline sites or those with coral in the soil, applying sulfur to reduce soil pH may alleviate iron chlorosis in centipedegrass; however, excessive applications of sulfur can reduce turfgrass quality. A more economical and longer lasting solution may be to change the turf to a more suitable grass species.

### Irrigation

Centipedegrass thrives in areas receiving 40 inches or more of rain per year. After establishment, water mature centipedegrass stands deeply on an as-needed basis. When leaf blades show signs of slight wilt, irrigate the

turf heavily, applying about  $\frac{3}{4}$  inch of water. Do not water again until the next time signs of wilt occur. Do not vary the amount of water applied each time. Deep, infrequent irrigation on an “as-needed” basis helps the plant develop a deeper root system and encourages greater resistance to pests and environmental stress.

Centipedegrass is more salt-sensitive than some of the other warm-season grasses. Do not irrigate with brackish or “gray” water.

### Weed management

Do not assume that herbicides used to control weeds in bermudagrass or other turfgrasses can also be safely used on centipedegrass. Centipedegrass is sensitive to many herbicides, especially those containing arsenic-type ingredients, such as MSMA. **Do not use MSMA or straight 2,4-D on centipedegrass.** Always read the product label to ensure that it can be used in centipedegrass. Some herbicides labeled for postemergent control of weeds in established centipedegrass are listed in Table 1 (page 4).

Several preemergence herbicides are labeled for control of various grassy and broadleaf weeds in established centipedegrass, including benefin (Balan™), prodiamine (Barricade®), isoxaben (Gallery™), Princep®, pendimethalin (Pendulum), oryzalin (Surflan™), and mesotrione (Tenacity®). Follow the recommendations and instructions on the product label. Consult the CTAHR publication *Chemical Weed Control Recommendations for Turfgrasses in Hawaii* for more information.

### References

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**Table 1. Herbicides labeled for postemergence weed control in centipedegrass.**

<b>Weed type</b>	<b>Active ingredient(s)</b>	<b>Herbicide (trade name)</b>
Broadleaf weeds	triclopyr + clopyralid	Confront™
	2,4-D + MCPP + dicamba	Trimec-Southern™
	carfentrazone, 2,4-D + MCPP + dicamba	SpeedZone Southern®
	fluroxypr	Spotlight™
	metsulfuron	Blade™, Manor®
	simazine	many products
	sulfentrazone	Dismiss™
	mesotrione	Tenacity® <sup>1</sup>
Grassy weeds	sethoxydim	Poast®, Vantage™
	mesotrione	Tenacity® <sup>1</sup>
Kyllingas ( <i>Kyllinga</i> spp.)	imazaquin	Image®
	bentazon	Basagran®
	halofulfuron	SedgeHammer® <sup>2</sup>
	sulfosulfuron	Certainty®
Purple nutsedge ( <i>Cyperus rotundus</i> )	imazaquin	Image®
	halosulfuron	SedgeHammer® <sup>2</sup>
	sulfosulfuron	Certainty®

<sup>1</sup>Tenacity® received EPA registration in January of 2008 and is not currently labeled for use in all 50 states. As of March 2008 this product is not available in Hawai'i.

<sup>2</sup>Formerly Manage®