

Turfgrass Management for residential lawns

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*Making a Difference
for California*

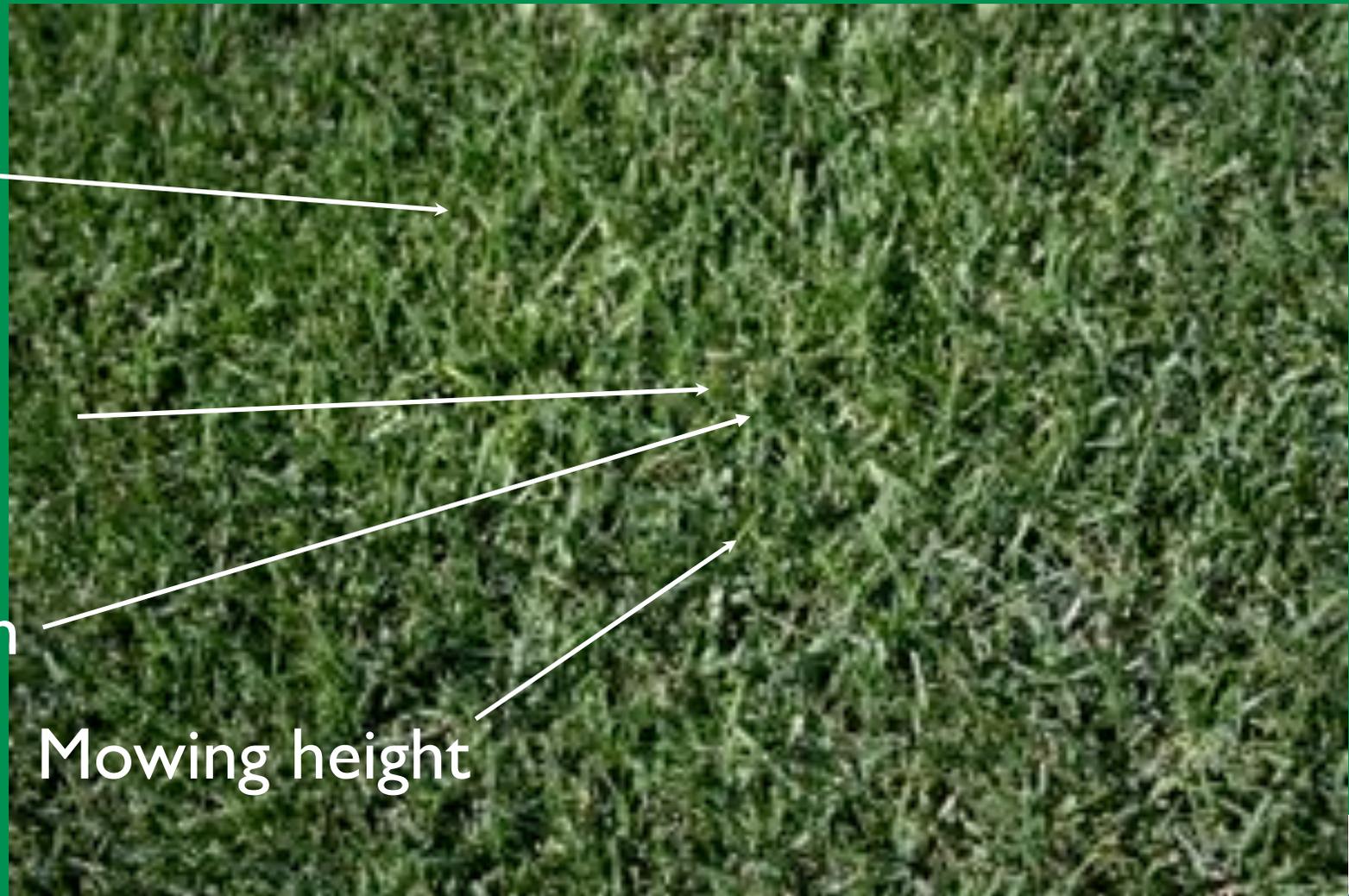
BMP's for maintaining an established lawn

Turf spp.

fertilizer

Irrigation

Mowing height



“Pesticides are a substitute for good cultural practices.”
Michigan State Cooperative Extension

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How to Manage Pests

Home & garden
Agriculture
Exotic & invasive

Weather data & products
Degree-days
interactive tools & models

Educational Resources

Publications & more
Workshops and events
PCA exam helper
Pesticide information

Research and IPM

Grants programs
Funded-project results

- What's new
- In the news
- Announcements
- Site index
- Help
- Acknowledgments
- UC ANR: more topics

How to Manage Pests

The UC Guide to Healthy Lawns

for home gardeners and managers of parks, school grounds, and other low-maintenance turf

[Index to contents](#) | [Acknowledgments](#) | [Related UC publications](#) | [References](#)

All you need to know to grow a lawn using little or no pesticide

	Choose and identify your turf species		Lawn care for new lawns
	Prepare the site and plant turf		Lawn care for established lawns
	Lawn renovation		Manage pests

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For noncommercial purposes only, any Web site may link directly to this page. FOR ALL OTHER USES or more information, read [Legal Notices](#). Unfortunately, we cannot provide individual solutions to specific pest problems. See [How to manage pests](#), or in the U.S., contact your [local Cooperative Extension office](#) for assistance. (TODLS/TURF) revised: February 25, 2004. [Contact webmaster](#).

Turf Management

- Turf spp (variety development)
- Irrigation (2)
- Fertilizer (timing)
- mowing height (2)
- insects
- disease
- weeds

Turf Type

- New lawns
 - fescue/bluegrass or perennial rye/bluegrass blend
- Old lawns
 - mix of bermuda, rye, fescue, and weeds

best turf for Merced:

Turf species best adapted to most California conditions

Turf species	Tolerance						Temperature adaptation	Planting method
	Heat	Cold	Drought	Shade	Salinity	Wear/Traffic		
Bermudagrass	High	Low	High	Low	High	High	Warm-season	Seed, sod, stolons, sprigs, plugs
Kentucky bluegrass*	Low	High	Low	Mod	Low	Mod	Cool-season	Seed, sod
Perennial ryegrass*	Low	High	Low	Low	Mod	High	Cool-season	Seed, sod
Red fescue*	Low	High	Mod	High	Low	Mod	Cool-season	Seed, sod
St. Augustinegrass	High	Low	Mod	High	High	Mod	Warm-season	Sod, stolons
Tall fescue	Mod-high	Mod	Mod	Mod	Mod	Mod-high	Cool-season	Seed, sod



turf type is the driver for:

- Irrigation amount
 - So Cal 80% Et
- fertilizer amount and timing
- mower height
- herbicide selection

Turf Type

- Bermuda
 - very heat tolerant
 - few diseases
 - low water requirements
 - durable to the point of being a weed
 - Tall Fescue (turf type)
 - cool season with good heat and wear tolerance.
 - new varieties are less coarse (hybrid “dwarf” tall fescue)
 - green color year around
- x Winter dormancy, turns brown
- x uses lots of water



National turfgrass evaluation program at UCR



El Toro
Zoysiagrass

This image shows a close-up of a lawn sample. The grass is a dense, green Zoysiagrass variety. A white sign with a yellow border is placed in the soil between the sample and the rest of the lawn. The sign is labeled 'El Toro Zoysiagrass'. The surrounding lawn is also green and well-maintained.



Tifway 419
Bermuda-
grass

This image shows a close-up of a lawn sample. The grass is a dense, green Bermudagrass variety. A white sign with a yellow border is placed in the soil between the sample and the rest of the lawn. The sign is labeled 'Tifway 419 Bermudagrass'. The surrounding lawn is also green and well-maintained.



- Buffalograss (warm season)

- Drought resistant (50% Et)
- Low mowing frequency
- Low N use (1 lb N/yr)
- Not invasive like Bermuda
- Short winter dormancy
- Establish with plugs





Breeding for a low H₂O future...

- Meadow fescue x perennial ryegrass crosses
 - *Festuca pratensis* x *Lolium perenne* = *Festulolium*
 - Cool season grass with increased drought resistance to get through dry summer months
- Buffalograss hybrids
 - Improved color and texture
- Bermudagrass hybrids
 - Very short winter dormancy (4 – 6 weeks)

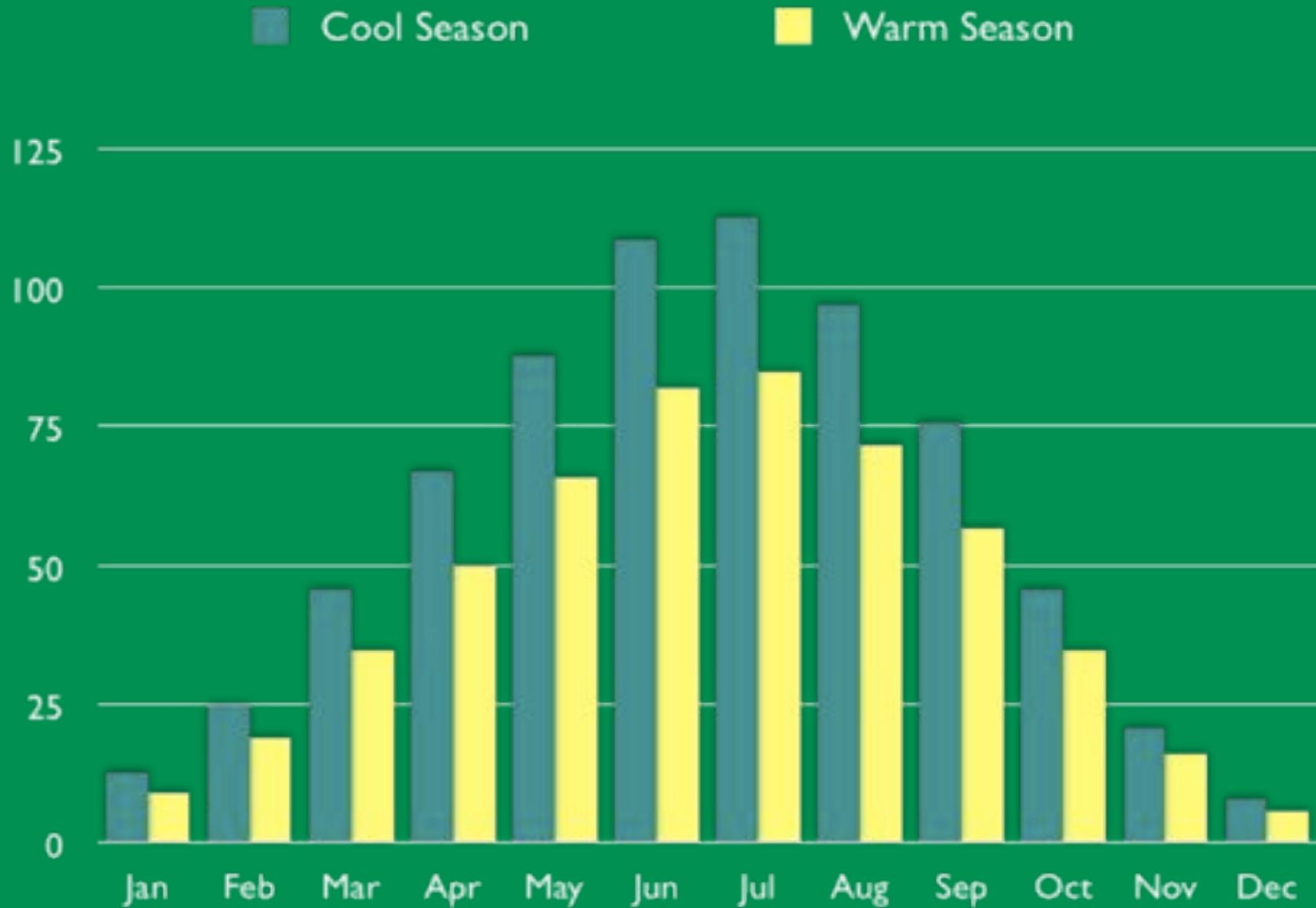


Irrigation

- over irrigation
- under irrigation



minutes irrigation/week, 1" sprinkler output



Fertilizer

- March
- May
- September
- October
- Cool season: 1 lb N/1000 sq. ft (total 4 lbs N per year)
 - mulch instead of bag, reduce N by 30%
- Warm season: 1 lb N/1000 sq ft per growing month (6 lbs N per year)
- Use products containing slow-release + quick N
- Increase K_2O in fall and shady areas





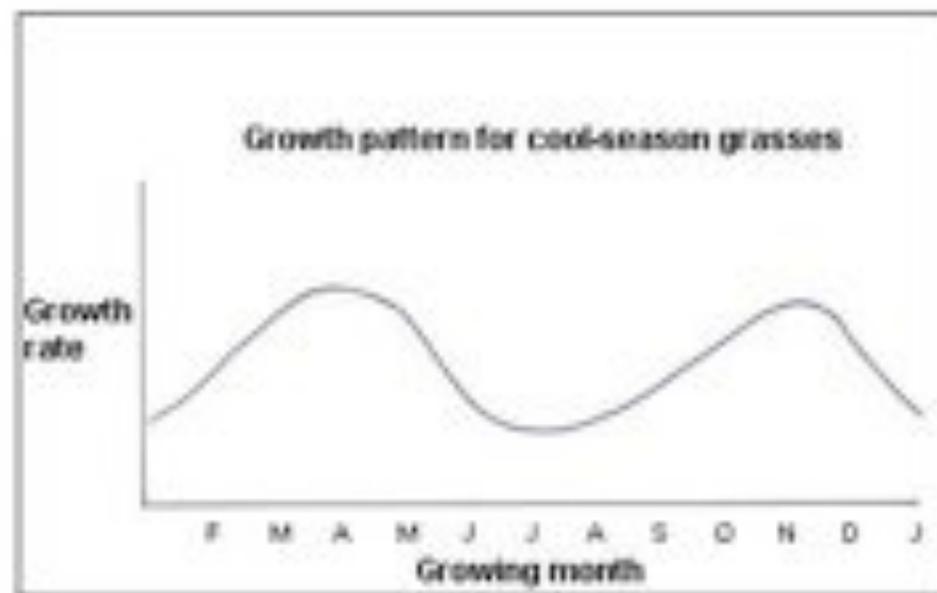
Mowing Height

Impacts:

- water use and drought resistance
- weed growth
- durability
- long-term maintenance

Recommendations for mowing cool-season grasses

Turf species	Set mower to	Mow when turf reaches
Annual ryegrass	1 1/2 - 2 inches	2 1/4 - 3 inches
Colonial bentgrass	1/2 - 1 inch	3/4 - 1 1/2 inches
Creeping bentgrass	1/2 inch or less	3/4 inch or less
Hard fescue	1 1/2 - 2 1/2 inches	2 1/4 - 3 3/4 inches
Kentucky bluegrass	1 1/2 - 2 1/2 inches	2 1/4 - 3 3/4 inches
Perennial ryegrass	1 1/2 - 2 1/2 inches	2 1/4 - 3 3/4 inches
Red fescue	1 1/2 - 2 1/2 inches	2 1/4 - 3 3/4 inches
Rough bluegrass	1 - 2 1/2 inches	1 1/2 - 3 3/4 inches
Tall fescue	1 1/2 - 3 inches	2 1/4 - 4 1/2 inches



Mow regularly during the spring when the grass is actively growing, producing both root and shoot growth. Mow less frequently during the summer when growth slows. More frequent mowing may be necessary as growth picks up once again in the fall.

Mowing - warm season

Recommendations for mowing warm-season grasses

Turf species	Set mower to:	Mow when turf reaches:
Bermudagrass	1 - 1 1/2 inches (for seeded bermudagrass)	1 1/2 - 2 1/4 inches (for seeded bermudagrass)
	1/2 - 1 inch (for hybrids)	3/4 - 1 1/2 inches (for hybrids)
Buffalograss	1 - 2 inches	1 1/2 - 3 inches
Dichondra	1/2 - 3/4 inch (Can remain unmowed)	3/4 - 1 1/8 inches
Kikuyugrass	1 - 1 1/2	1 1/2 - 2 1/4



Mow frequently during the spring and summer when leaves are actively growing. Less frequent or no mowing is required as growth slows or the grass goes dormant in the fall and winter.



Mowing Heights:

- Most cool season lawns (exception Bentgrasses)
 - mow the mower at the highest adjustment (3.5")
- warm season (Bermuda)
 - Probably set the mower higher than you have it (2" for old, 1.5" for hybrids like Tifway 419)





For cool season grass, cut

HIGH

- reduced sunlight to soil
 - reduced weed seed germ
 - reduced evaporation loss
- reduced compaction
- more competitive turf

bag or mulch?

- Mulch if:
 - mow frequently
 - want reduced fertilizer use (30% less N required)
 - have no weeds going to seed
 - Thatch not a problem
- Bag if:
 - mow infrequently/sporadically
 - leaf litter/debris
 - rust prevalent



Power rake/de-thatching





Pests

- Insects
 - drench test
- Disease
- Weed control





www.ipm.ucdavis.edu

- lawn and garden
 - almost no chemical guidelines
- Ag & floriculture
 - professional applicator
 - many chemicals listed are not available to homeowner



Insects

- cutworms, armyworms, sod webworms
- grubs (masked chafers, June beetles)



drench test





Drench Test

- bucket of soapy water poured into 1 sq yard area.
- Works on leps, not grubs.

Treatment thresholds for insects detected with the drench test	
Pest*	Treatment threshold
 Armyworms, cutworms	5/yd ²
 Fiery skipper larvae	15/yd ²
 Sod webworms	15/yd ²
	



treatment

- cultural controls
 - irrigate and fertilize properly
 - remove thatch, aerate
- Neem oils, Bt's, imidacloprid + pyrethroid (Bayer Advanced)
- fertilizer + insecticide not recommended



Disease

- Nuisance
- making it sick
- brown and dead
- Bermuda vs cool season
- cultural (water, light)
- fungicides

Disease - nuisance

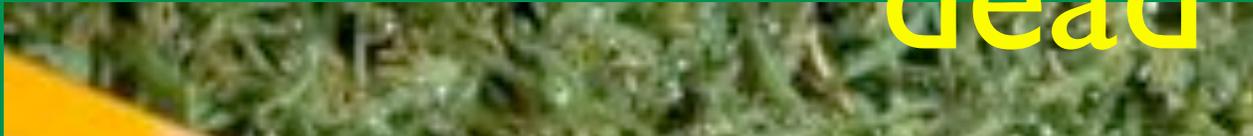


disease - sick



rust on a cool season grass
(resistant spp., increase N, decrease H₂O, mow & bag)

Disease - brown & dead



Rhizoctonia, Fusarium, Pythium

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disease mngt

- Bermuda
 - fertilize
- Cool season
 - irrigation management (difficult in hot summer months for Bluegrass blends)
 - aerate, de-thatch
 - fertilizer - sometimes more, sometimes less
 - fungicides (triadimefon, chlorothalonil, phos acid, propaconazole) applied soon after problem seen.







Weed Management

- raise the mower
- water, fertilize properly
- correct use and timing of herbicides



Troublesome weeds

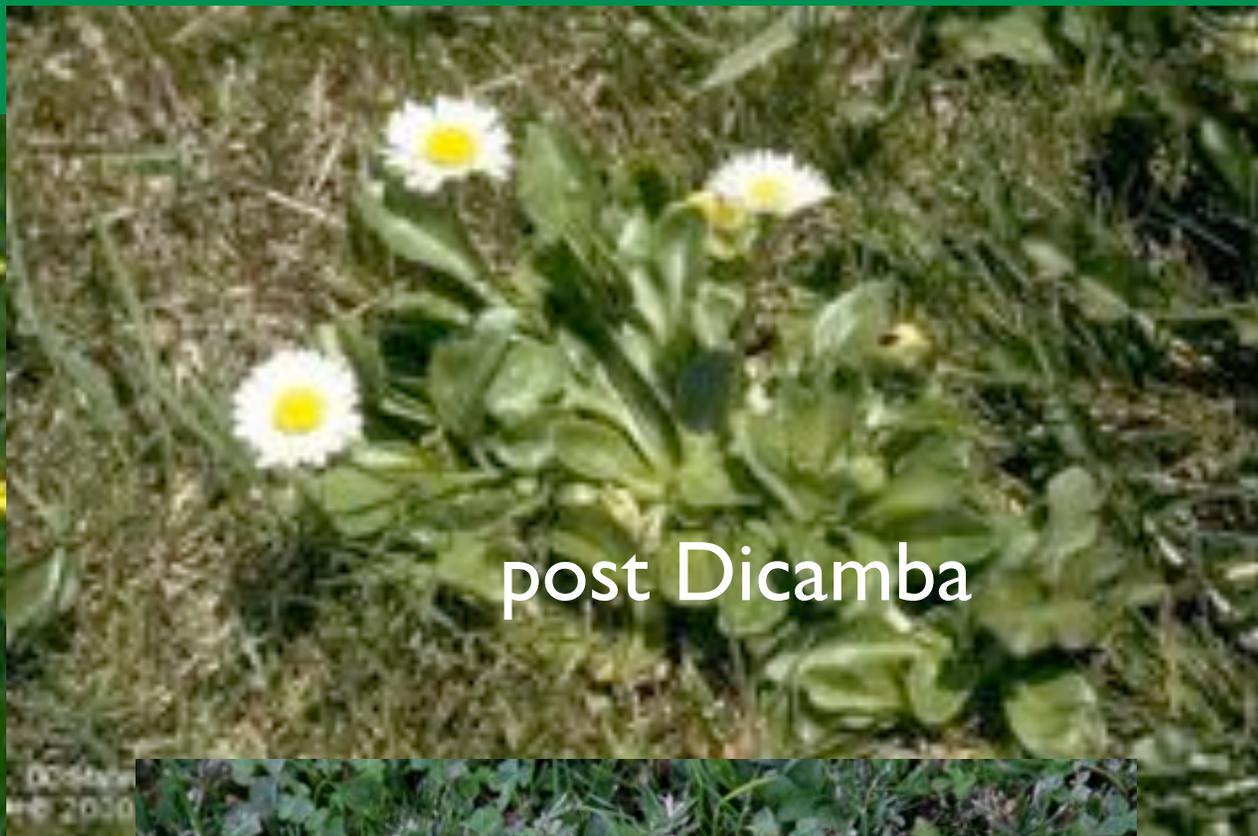
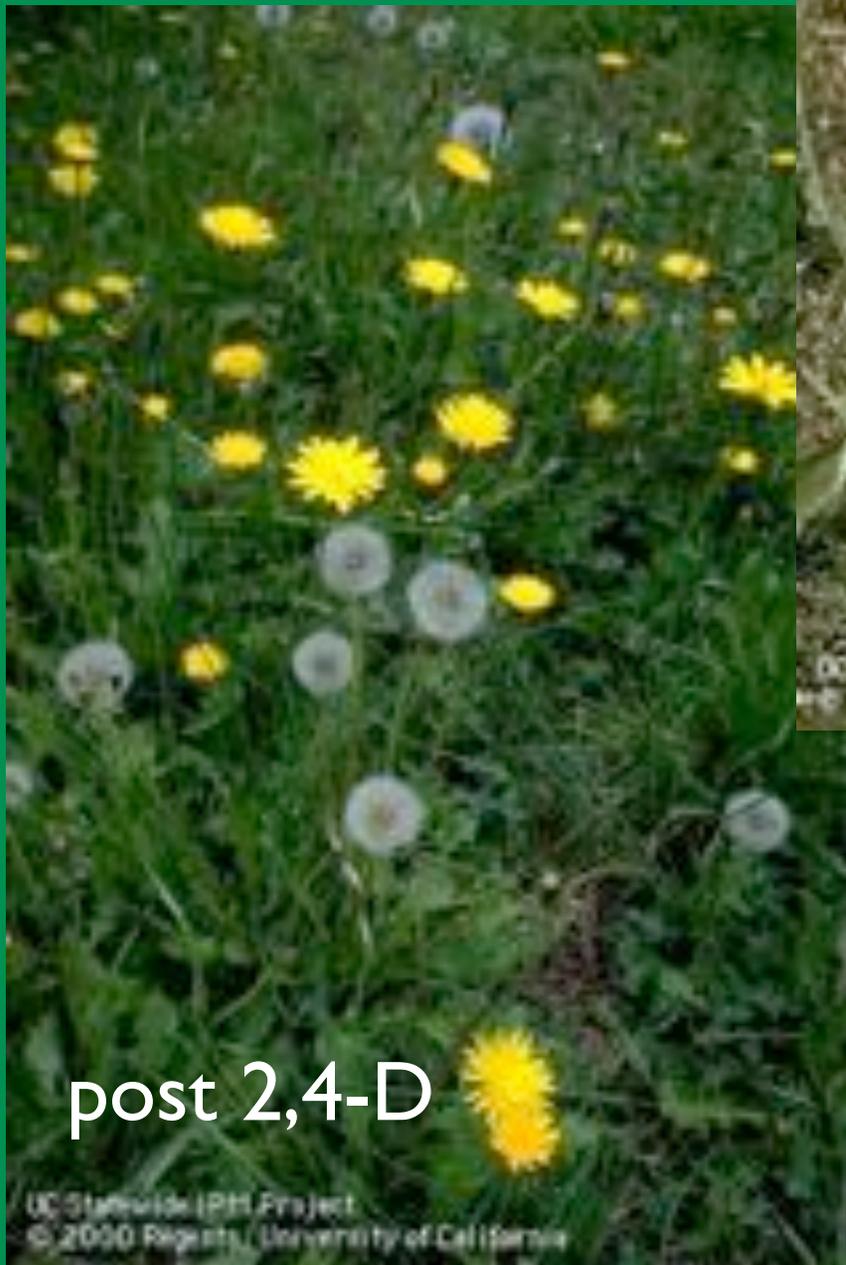
- Crabgrass & Dallisgrass
- Bermuda
- Dichondra
- Foxtails
- Bristly mallow
- clovers & Oxalis
- English Daisy
- Dandelion



Crabgrass in grass.



Bristlegass in turf. Use a shovel.



Crabgrass/Dallisgrass

- pre-emergence
 - apply mid February (think Superbowl)
 - dithiopyr, pendimethalin (Spectracide, Scott's, Monterey Chemical)
 - weed & feed OK if you know you have a problem (can hurt trees)
- Post emergence
 - MSMA applied 2x when weeds are small
 - late spring (May)



Available Herbicides

- MSMA (crabgrass)
- Fusilade (grass)
- Poast (grass)
- Mecoprop MCPP (broadleaf)
- Dicamba (broadleaf)
- 2,4-D (broadleaf)
- 2,4-DP
- Triclopyr (Oxalis, Bermuda)
- Surflan (annual grasses, broadleaf)
- Dithiopyr (crabgrass, spurge)
- Roundup

best selection: Monterey Chemical



parting shots

- Adjust your sprinklers for the weather
- fertilize with products containing K_2O
- overseed heavy in fall, selective herbicides in the spring
- raise your mower
- control crabgrass with a pre-emergent application of herbicide in February.

Thank you.

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