



For San Diego County Master Gardeners

May 2, 2023

Turfgrass Management

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Why have a lawn?



- Pleasant backdrop- serenity
- Traps dust and absorbs noise
- Generates oxygen
- Prevents erosion
- Provides a safe playing surface
- Increases property values

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Preferred by dogs and kids everywhere!



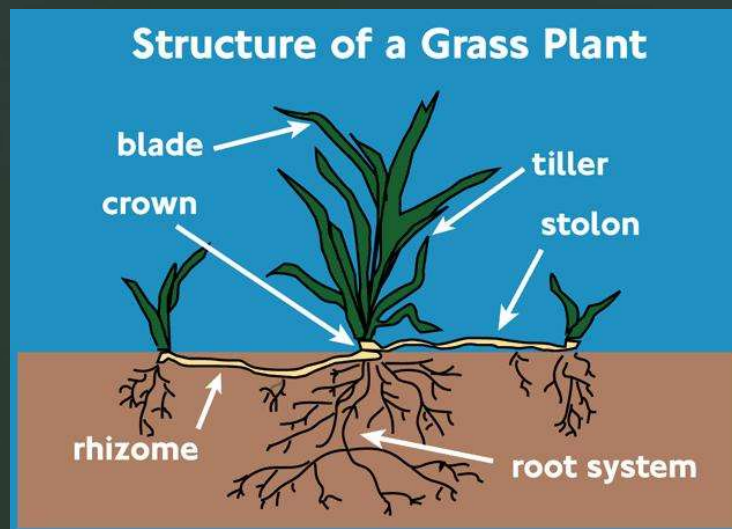
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Grasses Adapted for Lawns



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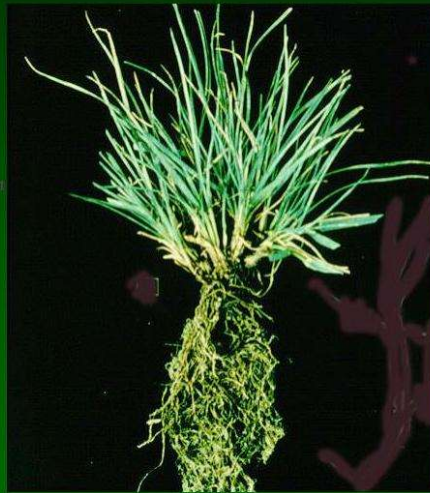
Anatomy of a Grass Plant



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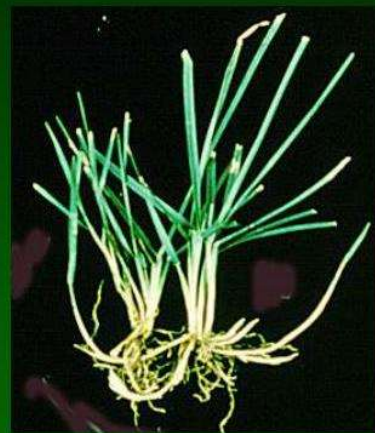
Three Turfgrass Growth Habits: **Clump**

- Bunch: spread by tillering
 - Uniformity is problem long term or at low seeding rates
 - Tall, Chewings and Hard Fescues, and Annual and Perennial Ryegrasses



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Three Turfgrass Growth Habits: **Rhizomes**

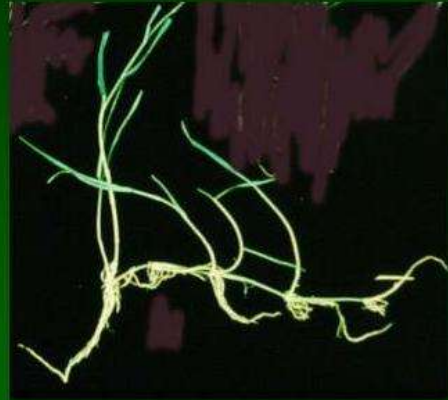


- Rhizomatous
 - Below-ground lateral shoots
 - Storage organs
- Uniform turfs
- Sod production
- Bermudagrass, Kentucky Bluegrass, Creeping Red Fescue and *Zoysia*

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Three Turfgrass Growth Habits: **Stolon**

- Stoloniferous
 - Above-ground lateral shoots
 - Foraging organ; grow faster than rhizomes
- Uniform turfs
 - Close mowing preferred
- Sod production
- Bermudagrass and *Zoysia*



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Clumping turf shows up in a thin, starved lawn



Stolons from a warm season grass



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Running Bamboo-Super Rhizomes!



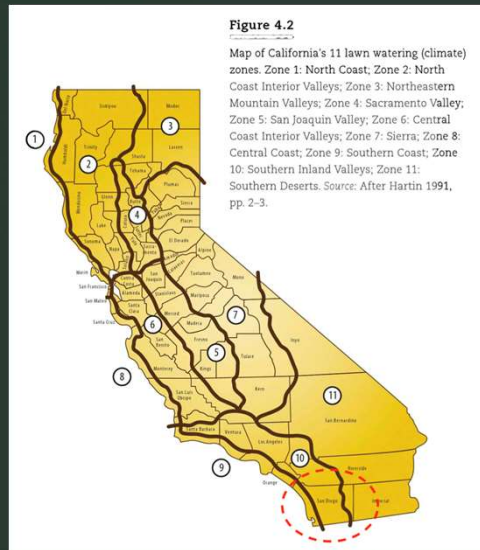
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Turfgrass Zones of the United States



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Lawn Watering Zones of Southern CA: 9, 10, 11



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Cool Season Grasses

Cool Season

- Can be established by seed or sod
- Usually started in spring or fall
- Prefer temps between 50-75°
- Summer heat and drought can cause dormancy
- Can mix cool season species together
- Usually maintained 2-3" tall

Examples

- Kentucky Bluegrass
- Annual and Perennial Ryegrasses
- Red Fescue
- Tall Fescue

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Warm Season Grasses

Warm Season

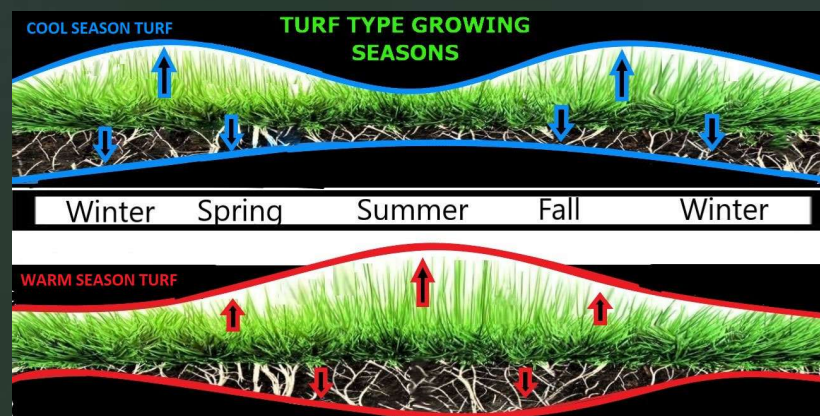
- Established by sod, plugs, sprigs
- Usually started in late spring/early summer
- Prefer temps between 75-90°
- Winter cold temps cause dormancy
- Usually grown as monostands
- Can be maintained .5-2" height

Examples

- Bermudagrass
- Seashore Paspalum
- Buffalograss
- St. Augustinegrass

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Cool vs. Warm Seasonal Differences



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The Winter Look



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Work Around: Overseeding



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Turfgrass Selection Locally Available Options

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Turfgrass Selection Depends on:



- How it will be used
 - Sports/ recreation/ traffic
 - Passive
- Where it will be grown
 - Climate zone
 - Sun/ shade
- Level of commitment
 - Low maintenance
 - High visibility-high maintenance

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Cool Season: Turf Type Dwarf *Tall Fescue*



- Can be established by sod or seed
- Stays green year round with some watering during drought
- Wear tolerant, sun or part shade
- No rhizomes or stolons
- Most common in use locally
- Readily available at Home Depot, Lowe's, Grangetto's, etc. Sod @ 60 cents per sq. ft.

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Tall Fescue Lawns



Scanned with Photomyne



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Warm Season: Hybrid Bermudagrass



- Available as sod or plugs (not seed)
- Lower water needs
- Tough and durable when warm
- Not shade tolerant
- Dormant/brown below 55° soil
- Rhizomes and stolons
- Sod @ 74 cents/ sq. ft.

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Bermudagrass Examples: Summer and Winter



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Warm Season: Seashore Paspalum



- Very salt tolerant-good near the ocean
- Seed or sod establishment
- Wear tolerant during the summer; stolons and rhizomes
- Goes dormant in winter
- Fine textured
- Sod-@ 89 cents/ sq. ft.

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Seashore Paspalum Example



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Warm season: Kikuyugrass- Weed or Turf?



- Native to Africa from higher elevations
- Tolerates heat and shade
- Very vigorous
- Spread by lawn mowing services
- Stays green all winter near coast

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East to identify Kikuyugrass when in bloom



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Keeping your lawn healthy

Routine Maintenance

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Basic Tasks to Ensure Success

- Mowing and Edging
- Fertilization
- Watering
- Controlling Thatch
- Pest Control
- Patching Bare Spots



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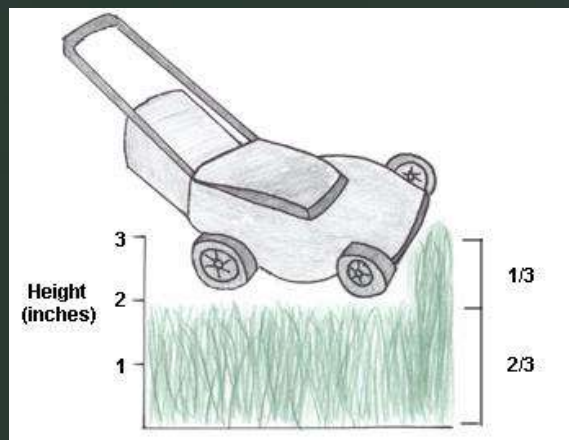
Mowing and Edging



- Proper Height for species
- More frequent during growing season
- Follow the 1/3 Rule
- Return grass clippings
- Edge frequently- as needed

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The One Third Rule of Mowing

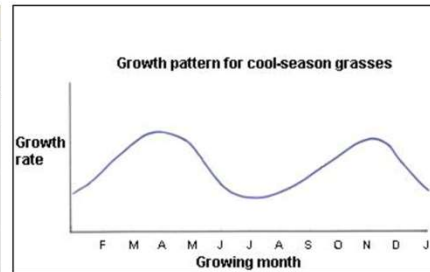


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Cool Season Grasses

Mowing cool-season grasses

Recommendations for mowing cool-season grasses		
Turf species	Set mower to	Mow when turf reaches
Tall fescue	1 1/2 - 3 inches	2 1/4 - 4 1/2 inches



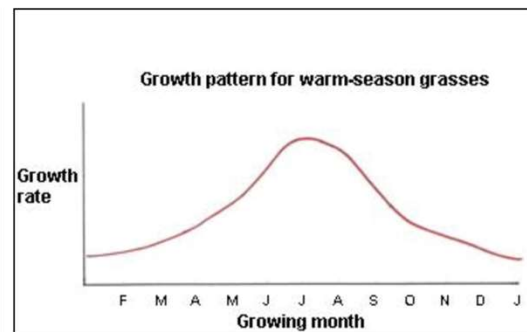
Mow regularly during the spring when the grass is actively growing, producing both root and shoot growth. Mow less frequently during the summer when growth slows. More frequent mowing may be necessary as growth picks up once again in the fall.

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Warm Season Grasses

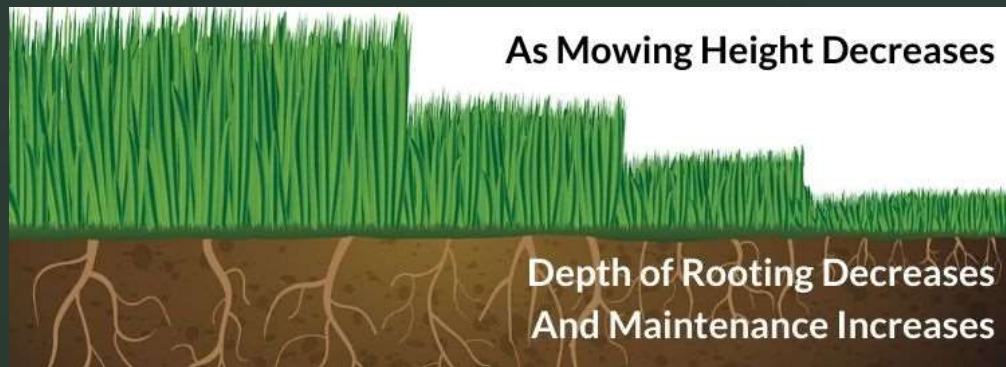
Mowing warm-season grasses

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)



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The Importance of Correct Mowing Height



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Grass Clipping Facts

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Grass clippings account for 75 percent of all yard waste.

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Up to 25 percent of your lawn's total fertilizer needs are supplied by clippings left on the lawn.

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Clippings contain 80 to 85 percent water and decompose quickly.

Grasscycling



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Fertilization for Improved Health and Vigor



- Most needed nutrient is Nitrogen followed by Phosphorous and Potassium
- Thicker lawns crowd out weeds, resist insects and diseases and recover more quickly if injured
- Water properly a few days before fertilizing, apply to DRY foliage

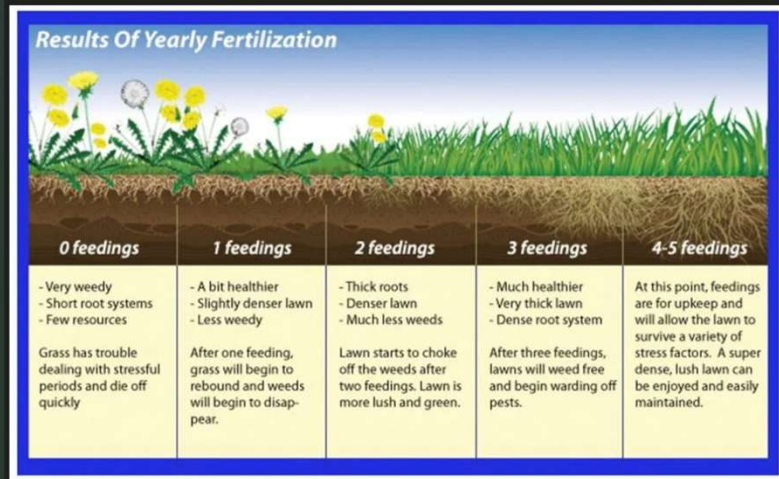
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4 pounds of N per year total –split into 4 applications - BUT adjust accordingly

- Level of Maintenance: Formal vs. “Back 40”
- Sun vs. Shade (fertilize half the amount if shady)
- Drought Conditions- use less
- Soil Type:
 - Sandy Soil: Apply at lower rates more frequently
 - Clay Soil: Can apply a bit more less frequently

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4 Applications per Year Recommended No more than 1 lb. of N per application



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Warm Season Turf Fertilization

Zone 9 - Warm-season grasses



Warm-season grasses are fertilized for the first time when the lawn has fully greened up in the spring and they should be fertilized in the summer into fall. Warm-season grasses retain better color in cool weather if fertilized during the fall.

Recommended months to fertilize (in bold)

Jan	Feb	Mar	Apr*
May*	Jun	Jul	Aug
Sep	Oct	Nov	Dec

*Use a complete fertilizer for one of these months if necessary.

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Cool Season Turf Fertilization

Zone 9 - Cool-season grasses



Cool-season turfgrasses actively grow in the spring and fall and should receive most of their fertilizer during those times of the year. Limit fertilization during the high temperature summer months.

Recommended months to fertilize (in bold)

Jan	Feb	Mar	Apr
May	Jun	Jul	Aug
Sep	Oct*	Nov*	Dec

*Use a [complete fertilizer](#) for one of these months if necessary.

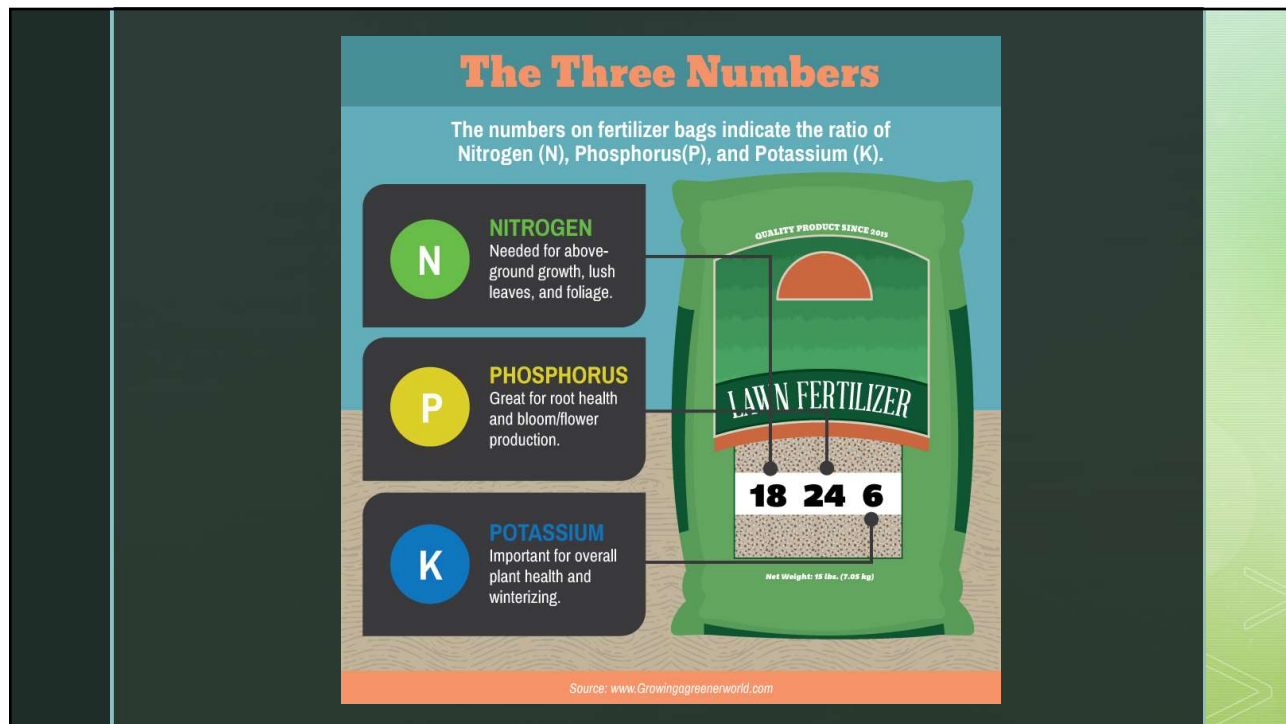
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Why You Need Nitrogen –Corn Trial



Treatment	Average Weight per Plant
Control: N,P,K	43.24 gr.
Zero N: P,K	1.56 gr.
Zero Phosphorous: N,K	9.1 gr.
Zero Potassium: N,P	26.7 gr.

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Most Fertilizer Bags Have Good Directions

- <https://ipm.ucanr.edu/TOOLS/TURF/MAINTAIN/fertamt.html>
- When in doubt: Use the UC Turf Fertilizer Calculator
 - Select species
 - The annual rate per 1000 sq. ft. (usually 4-6 lbs N)
 - How many times you want to apply (typically 4)
 - The % of N on the bag
 - Size of lawn in sq. ft.

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UC Calculator Results

Calculate the amount of purchased product you need for a single application

Bermudagrass (hybrids)

Recommended rate: 4-6 lbs N/1000 sq ft per year

Enter rate: [Rates](#)

Minimum applications per year: 4

Enter planned number of applications:

Enter percent Nitrogen in product: [Products](#)

Enter lawn size (square-feet):

For Bermudagrass (hybrids) --

You should use 2.78 lbs. of product for each of 4 application(s) per year.

In general, lawns should be fertilized about 4 times a year with 1 lb. of nitrogen at each application

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Commercial Example- Slow Release



1 PREP

At the UltraFeed™ Rate, this package provides 2 pounds of nitrogen per 1000 sq ft. At the Regular Rate this package provides 0.5 pounds of nitrogen per 1000 sq ft. If you live in a State that requires nitrogen application, use the Regular rate. See Spreader Settings for each rate below.

Use Scotts® **MyLawn** App to Calculate Your Lawn Size

ULTRA FEED™ RATE	REGULAR FEED RATE
5 pounds of product per 1000 sq ft SCOTT'S® BROADCAST/ROTARY SPREADER	2.25 pounds of product per 1000 sq ft SCOTT'S® BROADCAST/ROTARY SPREADER
5½	3¾
SCOTT'S® BROADCAST/ROTARY SPREADER	SCOTT'S® BROADCAST/ROTARY SPREADER
12	9¼
SCOTT'S® DROP SPREADER	SCOTT'S® DROP SPREADER
5½	4
SCOTT'S® WIZZ® SPREADER	SCOTT'S® WIZZ® SPREADER

2 APPLY

WALK AT A STEADY PACE

BROADCAST/ROTARY SPREADER
Each pass should be within 5 ft of the other to ensure an overlap.

DROP SPREADER
Align hopper arrow with previous wheel

FOR BEST RESULTS

For best results, lightly water in. Product does not require watering in.
Return unused product to the original container.
Help keep our water clean. Apply only to actively growing turf. Do not apply near water, storm drains, or drainage ditches. Do not apply if heavy rain is expected.
Check with your local Cooperative Extension Agency to obtain specific information on local turf best management practices. Check with your county or city government to determine if there are local regulations for fertilizer use.

APPLY TO A WET OR DRY LAWN

CLEAN UP
Apply this product only to your own lawn and sweep any product that lands on the driveway, sidewalk, or street back onto your lawn. If you live in a state that requires nitrogen application, including the state of Florida, apply once in spring or summer.

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Turf Irrigation Depends on...



- Turf type
- Growing season
- Level of quality
- Equipment
- Climate
- Soil, Slope
- Local mandates- water windows, etc.

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Table 4.6.
LAWN WATERING
GUIDE FOR
SOUTHERN
CALIFORNIA
(MINUTES TO WATER
EACH WEEK) (FOR
LOCATION OF
ZONES, SEE FIG. 4.2)

Zone 9. Southern Coast

WARM-SEASON TURF

Month	Hourly sprinkler output (in)			
	0.5	1.0	1.5	2.0
Jan	44	22	15	11
Feb	57	28	19	14
Mar	63	32	21	16
Apr	76	38	25	19
May	88	44	29	22
Jun	95	47	32	24
Jul	107	54	36	27
Aug	95	47	32	24
Sep	82	41	27	20
Oct	69	35	23	17
Nov	50	25	17	13
Dec	38	19	13	9

COOL-SEASON TURF

Month	Hourly sprinkler output (in)			
	0.5	1.0	1.5	2.0
Jan	59	29	20	15
Feb	76	38	25	19
Mar	84	42	28	21
Apr	101	50	34	25
May	118	59	39	29
Jun	126	63	42	32
Jul	143	71	48	36
Aug	126	63	42	32
Sep	109	55	36	27
Oct	92	46	31	23
Nov	67	34	22	17
Dec	50	25	17	13

Zone 10. Southern Inland Valleys

WARM-SEASON TURF

Month	Hourly sprinkler output (in)			
	0.5	1.0	1.5	2.0
Jan	42	21	14	10
Feb	57	28	19	14
Mar	80	40	27	20
Apr	96	48	32	24
May	119	60	40	29
Jun	144	72	48	36
Jul	165	83	55	41
Aug	155	77	52	39
Sep	124	62	41	31
Oct	88	44	29	22
Nov	54	27	16	14
Dec	42	21	14	10

COOL-SEASON TURF

Month	Hourly sprinkler output (in)			
	0.5	1.0	1.5	2.0
Jan	56	28	19	14
Feb	75	38	25	19
Mar	106	53	35	27
Apr	128	64	43	32
May	159	80	53	40
Jun	193	96	64	48
Jul	221	110	74	55
Aug	207	103	69	52
Sep	165	82	55	42
Oct	117	59	39	29
Nov	73	36	24	18
Dec	55	28	19	14

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BeWaterWise.com Calculator

<https://www.bewaterwise.com/calculator.html>

Watering Calculator

bewaterwise.com • Watering Calculator

It's a fact that up to 70 percent of residential water use is for landscape. One of the most effective ways to conserve water is to irrigate efficiently. The Watering Calculator tool estimates the correct amount of water to give your landscape or garden every week during normal weather conditions. Developed by the city of San Diego, it provides customized watering schedules by zip code based on data from the California Irrigation Management Information System weather station network.

How to use the Watering Calculator:

- Answer the questions below for each yard area. You can create a watering schedule for up to 6 areas at one time.
- When complete, click on the button below to see your customized watering schedule.

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Watering Schedule Zone 9

Property zip code: 92024
This is as of 5/1/2023 2:47:06 PM

Front Warm												
Warm Season Grass Clay Loam Sprinkler												
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Maximum Minutes per start time	5	5	5	5	5	5	5	5	5	5	5	5
Start times per week*	2	3	4	6	6	7	7	7	6	4	3	2
Total minutes per week	10	15	20	30	30	35	35	35	30	20	15	10

*Start times per week may not equal days per week. Multiple start times per day may be needed to avoid runoff.

Front Cool												
Cool Season Grass Clay Loam Sprinkler												
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Maximum Minutes per start time	5	5	5	5	5	5	5	5	5	5	5	5
Start times per week*	3	3	5	7	7	8	9	9	7	5	3	2
Total minutes per week	15	15	25	35	35	40	45	45	35	25	15	10

*Start times per week may not equal days per week. Multiple start times per day may be needed to avoid runoff.

Zip Code 92024- Encinitas
Clay Loam Soil
Sprinkler 1 GPM

Warm Season Turf in July/ August
Maximum Minutes Run Time: 5
Start Times per Week: 7
Total Minutes per Week: 35

Cool Season Turf in July/ August
Maximum Minutes Run Time: 5
Start Times per Week: 9
Total Minutes per Week: 45

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Watering Schedules Zone 10

Property zip code: 92065
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Front Warm												
Warm Season Grass Clay Loam Sprinkler												
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Maximum Minutes per start time	5	5	5	5	5	5	5	5	5	5	5	5
Start times per week*	2	3	5	6	6	8	8	8	6	5	3	2
Total minutes per week	10	15	25	30	30	40	40	40	30	25	15	10

*Start times per week may not equal days per week. Multiple start times per day may be needed to avoid runoff.

Front Cool												
Cool Season Grass Clay Loam Sprinkler												
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Maximum Minutes per start time	5	5	5	5	5	5	5	5	5	5	5	5
Start times per week*	3	4	5	7	7	9	10	10	7	5	3	3
Total minutes per week	15	20	25	35	35	45	50	50	35	25	15	15

*Start times per week may not equal days per week. Multiple start times per day may be needed to avoid runoff.

Zip Code 92065- Ramona
Clay Loam Soil
Sprinkler 1 GPM

Warm Season Turf in July/ August

Maximum Minutes Run Time: 5

Start Times per Week: 8

Total Minutes per Week: 40

Cool Season Turf in July/ August

Maximum Minutes Run Time: 5

Start Times per Week: 10

Total Minutes per Week: 50

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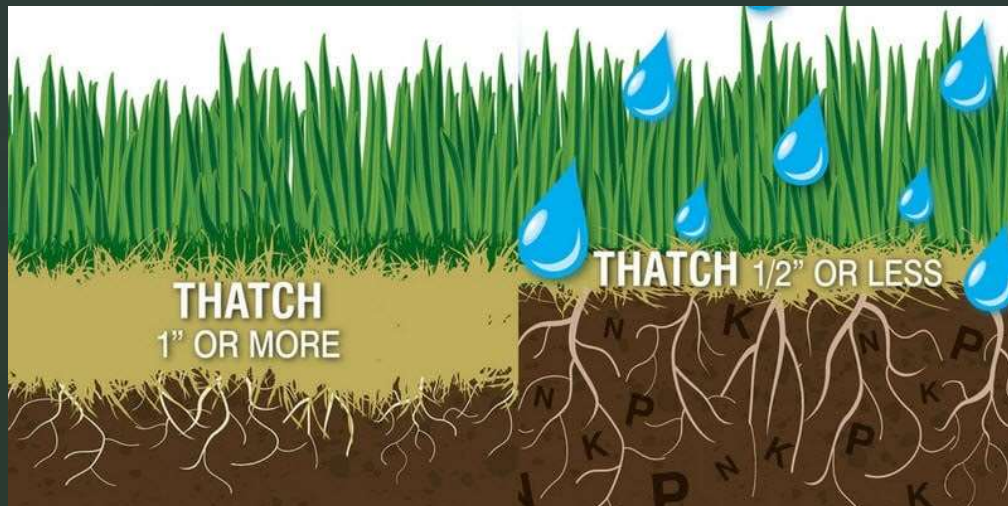
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■ Irrigation BMPs: Best Management Practices

- Use Hydrozones
- Install Check Valves and Pressure Regulators
- Eliminate Overflow to hard surfaces
- Apply water uniformly-Matched precipitation rates in the zone
- Apply water slowly so soil can absorb it
- Use short, repeated cycles
- Irrigate when it's not windy
- Repair Leaks Immediately

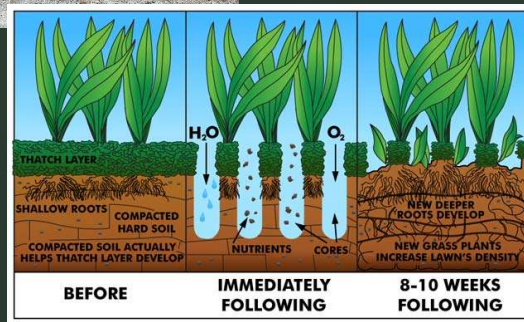
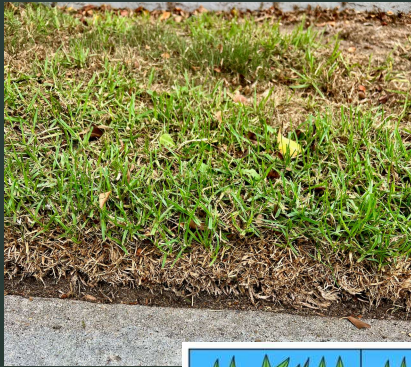
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■ Thatch Control



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Core Aeration



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Management of Weeds, Disease & Insects is minimized with proper

- Turf Selection
- Regular Mowing
- Irrigation
- Fertilization
- Thatch Control and Soil Aeration

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Table 1. Special Weed Problems in Lawns and their Associated Conditions.

Weed species*	Associated condition(s)	Cultural management comments
ANNUAL GRASSES		
annual bluegrass	overwatering; compacted soil	reduce irrigation; aerate
crabgrass (smooth and large)	overwatering or frequent light watering; mowing too short	water longer and less often; check mowing height
goosegrass	overwatering; compacted soil	reduce irrigation; aerate
PERENNIAL GRASSES		
bermudagrass	previous bermudagrass lawn or infestation; close mowing; sun and heat	remove plants before they spread; increase mowing height
dallisgrass	overwatering; compacted soil	remove plants before they spread; reduce irrigation; aerate
ANNUAL BROADLEAVES		
California burclover, black medic	low nitrogen fertility	remove plants and fertilize
common knotweed	compacted soil	aerate
spurge (spotted and prostrate)	closely mowed turfgrass with open areas; low nitrogen fertility	raise mowing height; remove plants before they spread
PERENNIAL BROADLEAVES		
white clover	low nitrogen fertility	fertilize
creeping woodsorrel	nearby sources of infestation	remove plants before they spread

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Weeds



- Soil compaction increases weed success
- Total eradication of weeds is not realistic- some are beneficial for pollinators
- Often spread by equipment

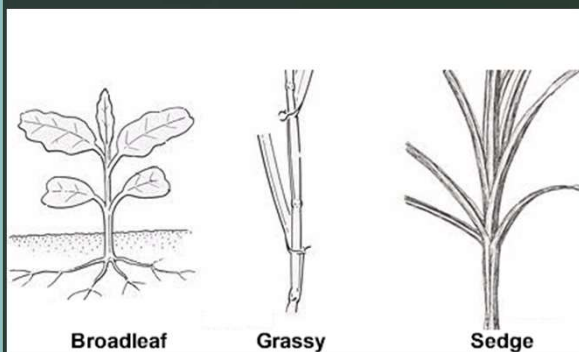
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Weed Control

- Remove by hand while still young and before seed set or development of other structures
- Remove the entire weed, including the root
- Use herbicides when you have high numbers of weeds
- If large patches of weeds are removed – patch in new grass with seed or sod

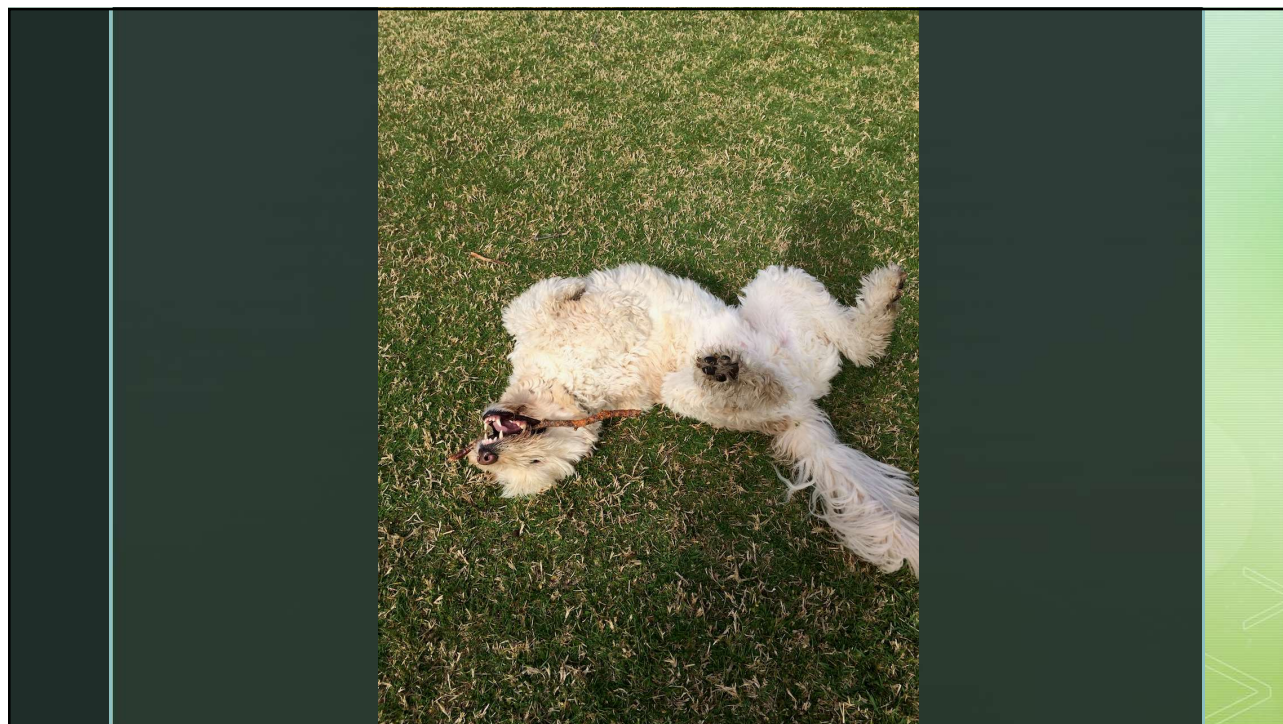
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Types of Weeds and Herbicides



- Selective Herbicides
 - Kill certain plants and don't harm turf. Ex. 2,4-D
- Nonselective Herbicides
 - Kills all vegetation-Roundup
- Systemic Herbicides
 - Moves through plant –kills roots- 2,4-D, Roundup
- Contact Herbicides
 - Only kills what it touches

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