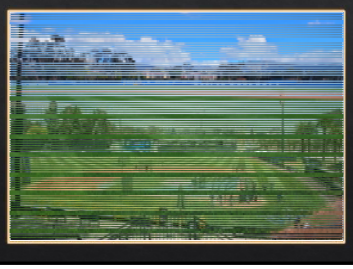
Reinvigorate Your High School Sports Fields

Paul Cushing – Agronomist



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Thank You Dr. Kent Kurtz - STMA Pioneer

2

Paul Cushing - Agronomist

Torrey Pines Golf Course

Riviera Country Club

Shadow Creek Golf Club

Edgewood Tahoe Golf Club

3

PC TurfGrass Services

- Professional Soil & Water Testing
- Analysis and Independent Fertility Recommendations
- School District Agronomic Day & Monthly Visits
- Spraying Services
- www.pcturfpro.com

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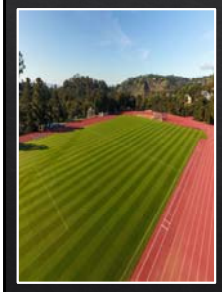
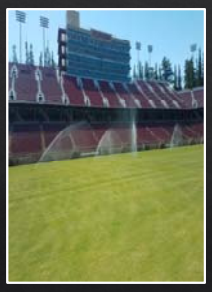
University Athletic Fields





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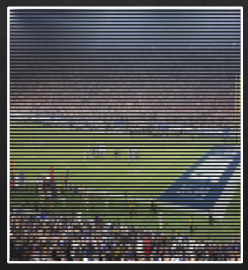
Professional Sports Fields



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High School Sports Fields

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Revitalizing School District Fields - Goals

- Improving turfgrass health through proper soil and water testing
- Ability to better utilize nutrients already existing in the soil
- Weed control
- Animal abatement
- Proper mowing Height of Cut (HOC)
- Renovation Practices – Aerification, Verticutting and Sand Topdressing
- Seasonal scheduling

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Importance of Soil & Water Testing Sports Fields

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Effects of Poor Water Quality

Poor Water Quality Weakens Turfgrass Plants

- Decreased Wear Tolerance
- Higher Disease Pressure
- Increased Insect Population
- Greater Weed Presence
- Inability for Plant to Utilize Available Nutrients in Soil

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Programs To Combat Poor Soil & Water Quality

- Use of moisture/TDS meters to monitor water & salt percentages in soil
- Soil and water testing 2X per year
- Run audit irrigation system monthly during growing season
- Water treatment (Magnetic or Reverse Osmosis) *Turbulator by Magnation*
- Deep and infrequent irrigation cycles
- Utilize calcium to regularly leach salts during growing season
- Frequent applications of Potassium to harden off plants & strengthen cell walls (Added turgidity)

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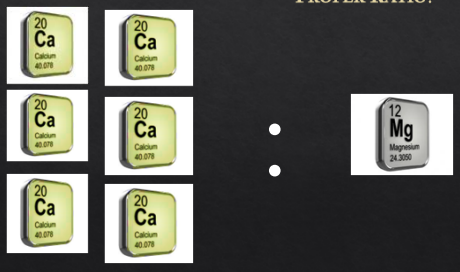
Building a Healthy Soil - What's the Proper Ratio?



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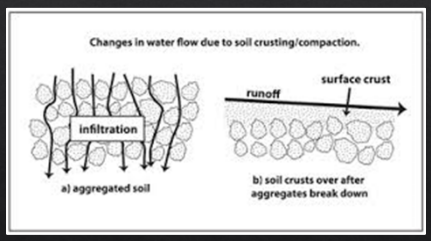
Balancing Calcium and Magnesium



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Calcium to Magnesium Ratio

Ca:Mg - 6:1

- Soils Flocculate – Infiltration and percolation of water in the upper rootzone
- Nutrients in soils have greater availability
- Drier soils = healthier plants
- Less weed populations (Poa annua)

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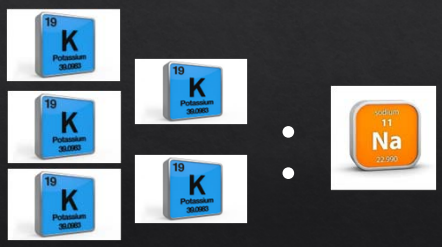
K:Na - A Really Important Ratio!!!!



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Whittier Christian High School
October 2022

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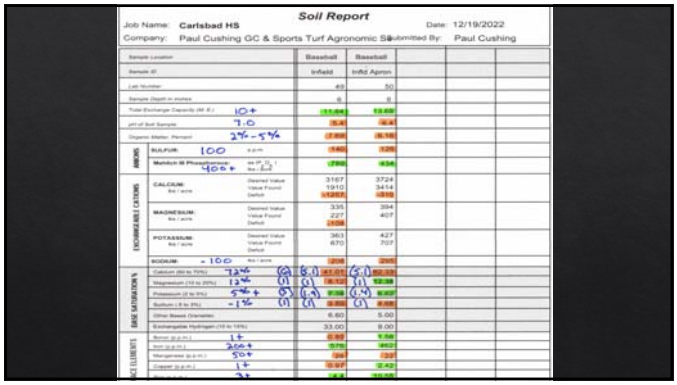
Soil Report

Job Name: Carlsbad HS
Company: Paul Cushing GC & Sports Turf Agronomic Services
Date: 12/19/2022
Submitted By: Paul Cushing

	Baseball Infield	Baseball Infld Apron
Lab Number	49	50
Sample Depth in Inches	4	4
Total Exchange Capacity (M.E.)	10+	13.65
pH of Soil Sample	7.0	6.4
Organic Matter, Percent	2% - 5%	5.16
SULFUR: 100	140	125
Mehlich III Phosphorous: 400+	780	434
CALCIUM: Desired Value 1910	3167	3724
MAGNESIUM: Desired Value 227	335	394
POTASSIUM: Desired Value 670	363	427
SODIUM: - 100	206	245
Calcium (60 to 70%) 72%	(5) 81.01	(5) 80.33
Magnesium (10 to 20%) 12%	(1) 6.32	(1) 6.38
Potassium (2 to 5%) 5%+	(5) 7.59	(5) 6.67
Sodium (.5 to 3%) - 1%	(1) 4.93	(1) 4.55
Other Bases (Granules)	6.60	5.00
Exchangable Hydrogen (10 to 15%)	33.00	9.00
Boron (2 p.p.m.)	0.56	1.56
Iron (2 p.p.m.)	570	462
Manganese (2 p.p.m.)	64	131
Copper (.2 p.p.m.)	1+	2.42
Zinc (2 p.p.m.)	3+	10.25

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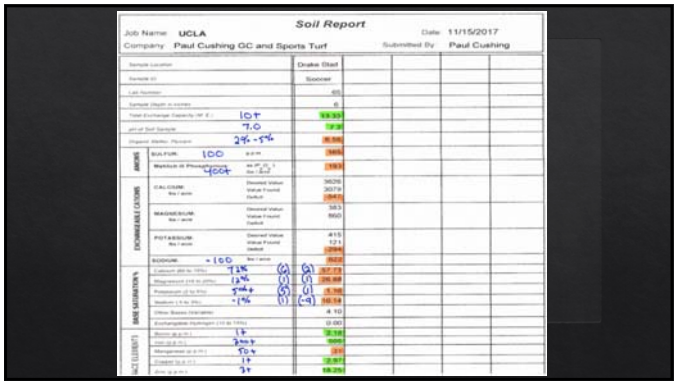
Soil Report

Job Name: UCLA
Company: Paul Cushing GC and Sports Turf
Date: 11/15/2017
Submitted By: Paul Cushing

	Drake Stad Soccer
Lab Number	48
Sample Depth in Inches	4
Total Exchange Capacity (M.E.)	10+
pH of Soil Sample	7.0
Organic Matter, Percent	2% - 5%
SULFUR: 100	165
Mehlich III Phosphorous: 400+	153
CALCIUM: Desired Value 3029	3629
MAGNESIUM: Desired Value 860	383
POTASSIUM: Desired Value 294	415
SODIUM: - 100	122
Calcium (60 to 70%) 73%	(5) 87.73
Magnesium (10 to 20%) 12%	(1) 5.51
Potassium (2 to 5%) 5%+	(5) 5.16
Sodium (.5 to 3%) - 1%	(1) 10.18
Other Bases (Granules)	4.10
Exchangable Hydrogen (10 to 15%)	0.00
Boron (2 p.p.m.)	1+
Iron (2 p.p.m.)	3.16
Manganese (2 p.p.m.)	50+
Copper (.2 p.p.m.)	1+
Zinc (2 p.p.m.)	3+

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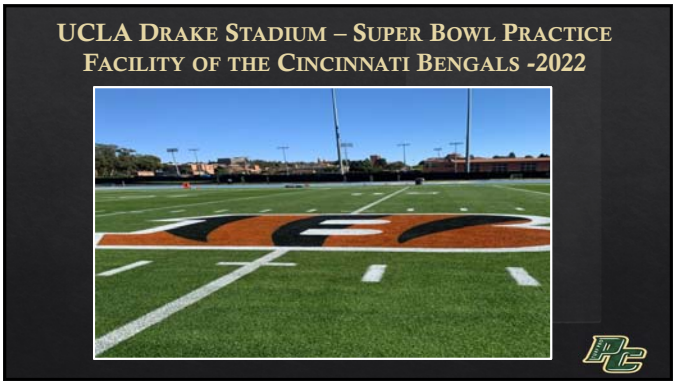

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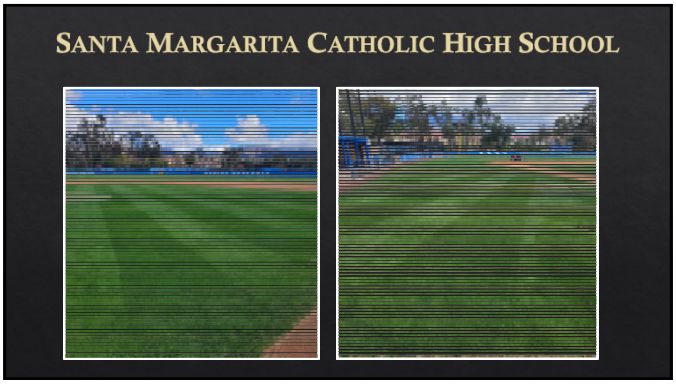

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San Marcos Unified School District
San Marcos High School


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San Marcos Unified School District
Mission Hills High School


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Santa Ana Unified School District – Godinez HS


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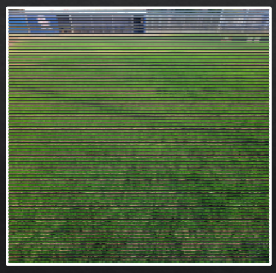
San Diego Unified School District
Scripps Ranch HS

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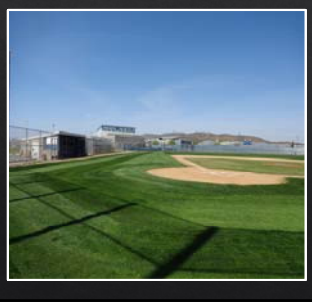
Poway USD - Del Norte High School

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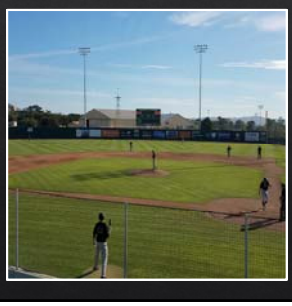
Cal Poly San Luis Obispo – Baggett Stadium

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A Correction Made in Soil Chemistry

Improving Plant Health & Utilizing Nutrients Existing In Soil

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A Correction Made in Soil Chemistry

Improving Plant Health & Utilizing Nutrients Existing In Soil

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Pay Close Attention To These Details With Your Fields

Information About Your Soil Testing That Really Matters

- Ca:Mg Ratio 6:1 (Water Movement)
- K:Na Ratio 5:1 (Nutrient Availability – Plant Turgidity
- Sulfur -100 (Gypsum vs. Hi-Cal Lime)
- Organic Matter (1%-2% Sand Based Fields)
  (2%-5% Natural Soil Based Fields)
- Iron and Manganese (Color)
- Phosphorous – 400 and Above
- pH – Understand Your Water……..But Don't Chase pH Down the Rabbit Hole!!!

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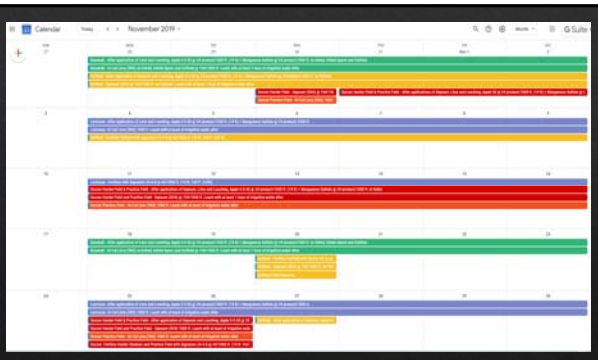

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Animal Abatement On Sports Fields

- Trapping and/or baiting
- Vegetable Oil or Carbon Monoxide Machines
- Start control where animals are coming from off property
- Multiple machines working zones on the fields
- Consistency is essential for long term success

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Weed Control On Sports Fields

- Proper HOC and Mowing Frequency plays a key role in weed control
- Combination of **carfentrazone-ethyl, mecoprop-p acid, dicamba acid and 2,4-D &** clopyralid are a solid mix to control a broad spectrum of broadleaf weeds
- Make herbicide applications on weekends, holidays or school breaks when fields are not in use
- Let materials sit on leaf blades at least 24 hours before watering
- Water all weed control applications before allowing players to utilize fields
- Add fertilizer and/or wetting agents to improve chemical uptake of weeds
- Apply pre-emergent weed applications 2X per year to control broad leaf weeds

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Proper Height Of Cut (HOC) on School District Fields

- Turf Management 101 tip- never mow off more than 1/3 of a turfgrass leaf blade at one time
- Lower HOC in spring when turf is greening and coming out of winter dormancy
- Raise HOC in summer when turf is under heat stress
- Lower HOC in fall again to keep turfgrass canopy tight
- When possible, use reel mowers for lower HOC
- Fun Fact!!!- The lower the HOC & mowing the field on a greater frequency, the fewer weeds you'll have in your turf areas
- When possible, use turfgrass growth regulators on highly maintained fields

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Renovation & Maintenance Practices

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Importance of Physical aerification

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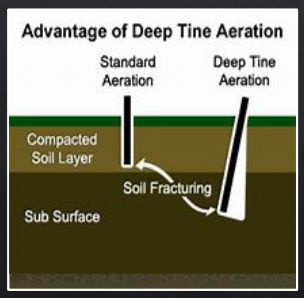
Importance of Deep Tine Aerification



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Warm Season Grass Verticutting

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Artificial Turf Rejuvenation

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Sand Topdressing on Sports Fields

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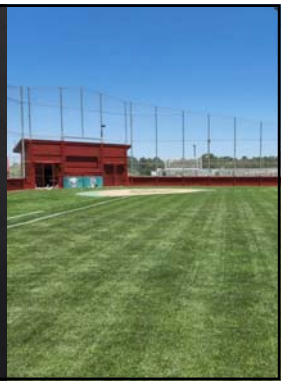
Seasonal Scheduling

"Failing to prepare is preparing to fail" John Wooden

- Utilize slow-release fertilizers on a quarterly basis during growing season to maintain a baseline of growth
- Aerify at least 2x per year (One time core aerification and one time with a solid - deep tine)
- With warm season grasses verticut/tickle every 4-6 weeks during summer months
- Sand topdress monthly during growing season
- Irrigation audit in early spring, followed by monthly audits during the growing season
- Apply pre-emergent herbicide applications in early spring and fall for weeds
- Summer break from school does not mean we stop mowing or maintaining our fields!!!



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Maintain Like a Champion Today!

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Contact Information

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