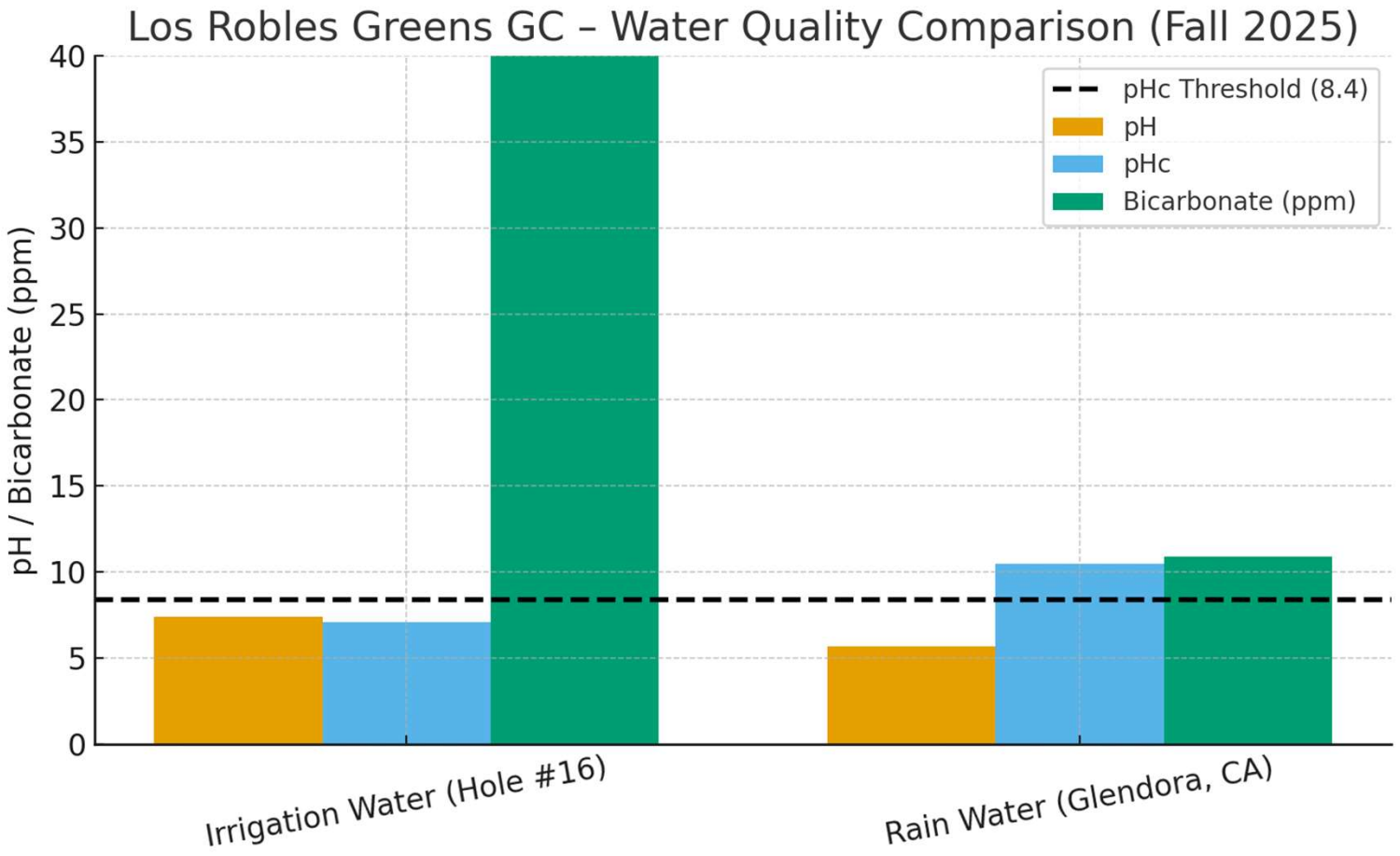
# IRRIGATION WATER




- The irrigation water is very hard with high alkalinity. Fortunately, the sodium and chloride levels are relatively non-issues.

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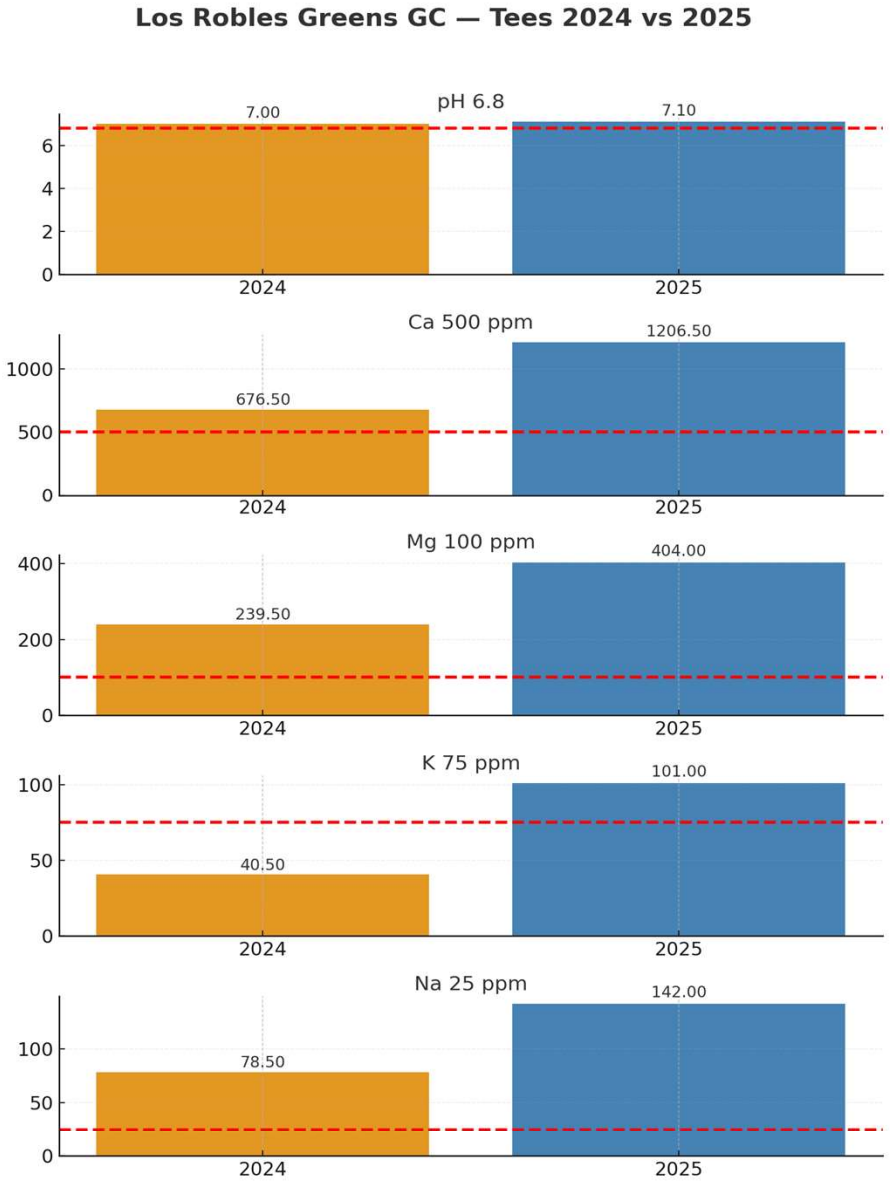
# TEES

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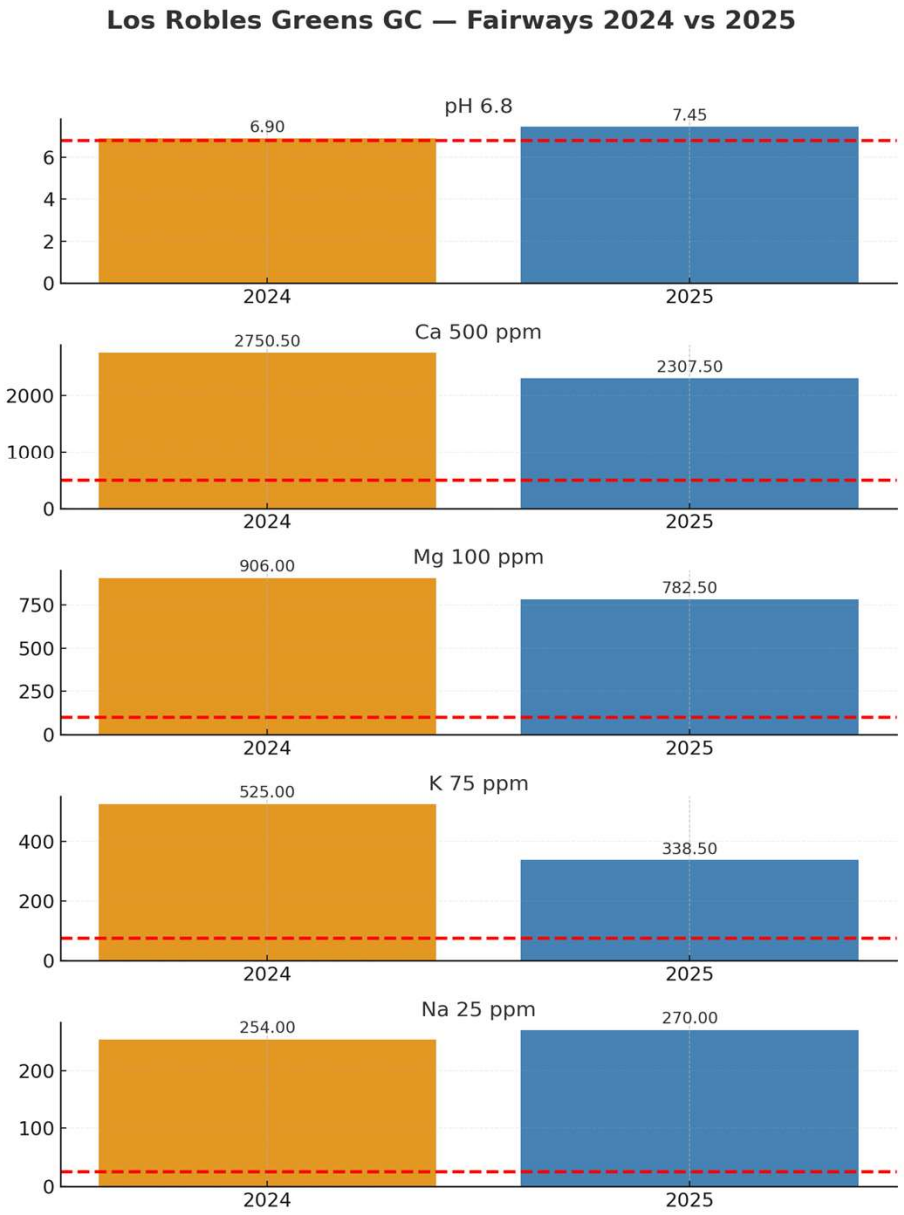
# FAIRWAYS

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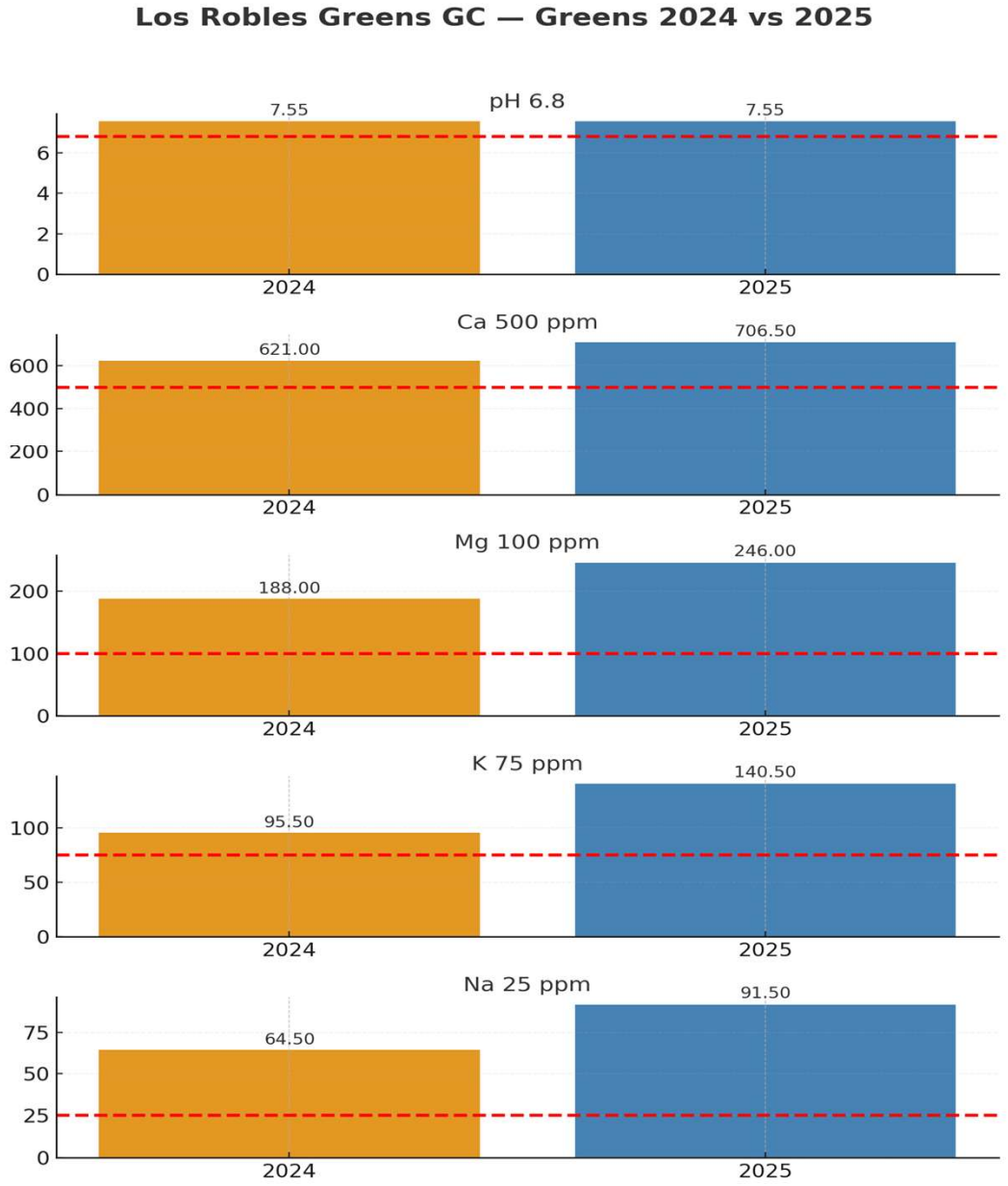
# GREENS




- Sodium levels should be about half of Potassium levels to keep sodium from being a concern.

# SUMMARY

## Los Robles Greens GC — Soil Health Summary (2025)

Testing across tees, fairways, and greens at Los Robles Greens Golf Course in 2025 shows strong structural integrity and cation balance typical of mature Southern California turf systems. Soil pH remains slightly alkaline, with continued improvement in sodium control and strong calcium retention. The primary focus going forward is maintaining infiltration efficiency, managing surface alkalinity, and balancing potassium-to-magnesium ratios in high-traffic zones.

**Tees:**
• pH readings around 7.0 reflect stable, slightly alkaline conditions suitable for warm-season turf.
• Calcium (≈675 ppm) and magnesium (≈240 ppm) are well-balanced, maintaining structural stability and rooting strength.
• Potassium (≈40 ppm) remains moderate, slightly below fairway averages — low stress risk and minimal interference with Mg uptake.
• Sodium (≈80 ppm) is moderate, not limiting infiltration or turf density.
• **Action Focus:** Maintain balanced feed with light AMS or acid-based N to sustain pH near 6.8 and preserve infiltration quality.

**Fairways:**
• pH averages 6.7–7.1, near optimal range; surface alkalinity slightly decreasing since 2024.
• Calcium (2400–3100 ppm) and magnesium (720–1080 ppm) indicate strong cation base saturation.
• Potassium (475–575 ppm) is elevated — valuable for drought stress tolerance but could suppress Mg if unchecked.
• Sodium (200–300 ppm) remains moderate; infiltration is stable but requires continued Ca supplementation.
• **Action Focus:** Continue quarterly gypsum or calcium thiosulfate and limit K inputs to maintain Ca–Mg–K balance.

**Greens:**
• pH ranges from 7.5–7.6, slightly above target; Fe and Mn availability reduced under these conditions.
• Calcium (≈620 ppm) and magnesium (≈185 ppm) support good structure but lean on the lower end for calcareous soils.
• Potassium (≈95 ppm) and sodium (≈65 ppm) are within acceptable range for bent/Poa mix turf.
• Micronutrient limitation remains the main performance constraint; foliar Fe and Mn improve surface color and recovery.
• **Action Focus:** Incorporate AMS or UAN-based nitrogen to buffer alkalinity and enhance Fe/Mn uptake efficiency.

**Overall Summary:**
Los Robles soils remain high in total cations and strong in structure. The key to sustained performance lies in gentle acidification, consistent calcium management, and micronutrient supplementation. pH drift should be monitored quarterly to ensure levels trend toward 6.8, balancing long-term infiltration and nutrient efficiency.

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**Kikuyugrass Nutrient Strategy & Regional Notes (Condensed Summary)**

Kikuyugrass performs best under **low-to-moderate fertility** with a **balanced cation base** (Ca > Mg > K) and a **neutral to slightly acidic surface pH**. Excess nitrogen drives soft, thatchy growth; color and vigor are better maintained through foliar iron and manganese. Maintain **soil Ca above 500 ppm** to preserve soil structure and infiltration.

Under **Southern California conditions**, irrigation water is typically high in **bicarbonates and sodium**, creating calcium carbonate crusting and micronutrient lockout. Periodic gypsum or calcium thiosulfate applications, along with acidifying N sources such as AMS or UAN, help keep infiltration open and nutrients available.

Keep **pH near 6.5–7.0**, leach salts seasonally, and schedule cultural aerification to offset compaction from carbonate buildup. Use sulfur sources to maintain surface acidity, and supplement Fe and Mn foliar during high-pH irrigation cycles for consistent color and turf density.

In summary: feed lightly, balance cations, and let physical management (aerification, vertical mowing, drainage) carry as much weight as fertility.

## Optimum Soil Temperatures for Overseeding Ryegrass into Bermudagrass

**Ideal Range:**

Soil temps between **68–75°F (20–24°C)** at 1" depth give the fastest germination and best stand. Below **55°F (13°C)** germination slows, and above **85°F (29°C)** rye seedlings struggle against bermudagrass competition.

**Timing:**

Begin overseeding as daytime highs drop below 85°F and nights consistently under 65°F. Typical windows:

• **Southwest:** late Sept – mid Oct
• **Southeast / Transition Zone:** mid-Sept – early Oct
• **Gulf States:** late Oct

**Why It Matters:**

• Too early → bermuda still active, smothers seedlings.
• Too late → soil cools, rye never fills in before winter.
• The goal is to hit the crossover when bermuda fades but soil remains warm enough for rapid rye emergence.

**Quick Check:**

Use a soil thermometer, not air temp. When 1-inch soil temps stay below 75°F for several days — it's go time.

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