

Spring maintenance for summer performance

BY LUKE FRANK

For many turf managers, spring is simply the best opportunity to prepare for summer. As most of us migrate outdoors this season, we'll be trampling, thrashing, slicing and skidding across all manners of turfgrass.

Irrigation plays a critical role in the health and resilience of turf facilities everywhere. Good coverage and accurate irrigation scheduling prevent transgressions in irrigation over- and under-watering—a great opportunity for people and equipment to absolutely shred plant material; or for the turf to assume a hardpan, hydrophobic existence that can lead to irrigation runoff, or worse, increased injuries.

With the exponential increase of turf users spilling outdoors, there's a lot of territory to cover in the spring. You've likely made the initial rounds at your areas of responsibility and cautiously, very gradually recharged the irrigation system(s). After a few weeks of irrigation in the new season, it's a good idea in the course of your work to assess system performance before the peak-demand months arrive.

Recharge reminders

It never hurts to re-emphasize proper system start-up procedures in the spring to help ensure a relatively trouble-free irrigation season. The greatest threat to your irrigation system during start-up is water hammer, particularly after a long, cold winter.

More than likely, the weather was not placing too many demands on your turfgrass. Therefore, you didn't get overly anxious and fill your system too early or too quickly. Hopefully you charged the piping very slowly, with plenty of air-relief valves open or sprinkler heads pulled at the high points in the system.

So you've successfully got through the recharge process without discovering any major damage to the system and you've quickly observed each zone running and programmed a light but sufficient irrigation schedule before you moved on to the next controller. Now it's time to revisit each zone or site and go beyond a quick observation. It's time to inspect, detect, and correct your irrigation operations.



It's important that conditions for good irrigation system performance are in place, including proper pressure, head spacing and nozzle selection, and appropriate sprinkler alignment.

A careful and thorough inspection of your irrigation system operating under normal operating conditions is necessary to ensure good system performance throughout the growing season. However, your turfgrass also will tell you a lot about system performance.

Observe the site. Before you begin activating zones, perform a fairly quick yet comprehensive walk-through. Rebuild any basins around trees, shrubs, and planting beds and redirect any down spouts to help the site's "incidental" landscape better retain and use sprinkler water and natural precipitation.

Check the turf for stress and that includes hot spots and standing water alike. It may be beneficial to observe any pathways, walls, or structures for new or excessive water stains. And check the ground around each head for pooling (or worse), particularly low heads.

Handle the pressure

Now it's time to activate sprinkler zones and check the operation of specific components. It is at about this point that remote control becomes a wonderful time-saver. If not, use the bleed screw on the top of each valve to open a zone, and step into the fracas.

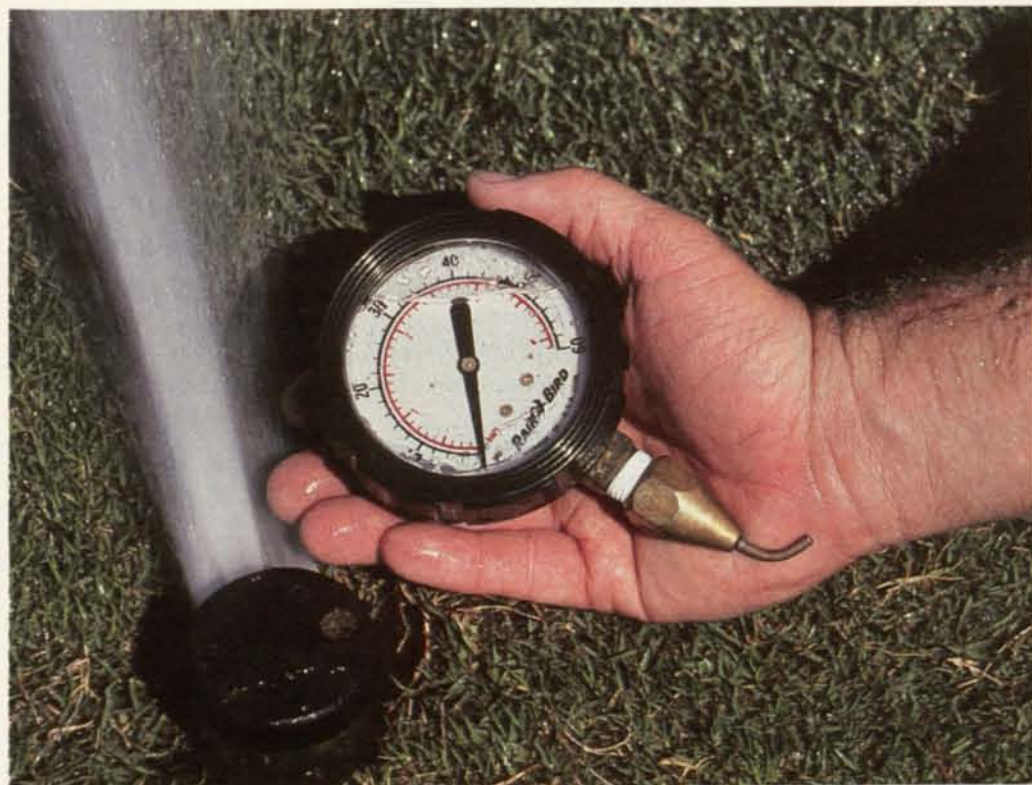
Pressure at the nozzle is important to sprinkler performance. Check the manufacturer's specifications for the appropriate operating range. A pitot tube and gauge at the nozzle will measure actual operating pressure.

If pressure is either excessive or inadequate, make the necessary changes to bring it within the specified operating range. This may entail moving or removing heads from overburdened zones, or installing pressure regulation.

Installing a pressure regulator is simple and relatively non-invasive, and can dramatically improve the performance of individual sprinklers, and subsequently the overall system. By accommodating the proper pressure range of a sprinkler head, water is appropriately dispensed and dispersed out from the head.

While you're at the sprinkler head, gently apply pressure to the ground around the sprinkler with your foot. Feel spongy? You may have a weeping valve or some low-head drainage. Also ensure each head is flush to grade (or at the safest level for your constituency) and perpendicular to the surface it will irrigate.

Sprinklers should be observed and problems corrected as quickly as they surface, to prevent any real damage to the turf, the system or the end-user. Watch the sprinklers operate on each zone. For rotor heads, the rotation time of sprinklers should closely match one another because you've already ensured that each head on that zone is of the same make and model, and operating with identical nozzles that are neither damaged nor worn.



While you're there, check that the head is flush with grade. Heads too low invite plant interference, pooling, and sediment in the sprinkler housing. Sprinklers too high are almost certain to incur damage from end-users and equipment, and risers are equally at risk. Again, while making any height adjustments ensure that all sprinkler heads lay perpendicular to the surface, otherwise radial uniformity will suffer.

Check the coverage of all rotor and spray heads, ensuring that the sprinkler is adjusted to cover the turf area and not structures, sidewalks, cart paths, or parking areas. Observe how water discharges from the nozzle. You may discover an obstruction or irregular wear that is affecting the flow rate and uniformity of the sprinkler. If you notice water draining from low heads, install check valves to prevent low-head drainage.

Ensure that all sprinkler nozzles have matched precipitation rates, pressures are within operating specifications, all heads are perpendicular to and even with grade, and no runoff occurs by using multiple irrigation cycles.

Validating valves

Your irrigation systems' gatekeepers, the valves, too are worthy of a spring inspection. Start at the valve box, ensuring that the valves are protected and accessible. Pop the top and check for standing water in the bottom of the box. Look for leaks around each valve's bonnet and around any fittings visible in the box.

Check the flow controls and all of the wire connections. It may be a good idea to re-splice some of the connections if they appear worn, frayed or improperly installed in the first place.

Open and close the valves manually with the bleed screw and at the controller to confirm proper operation. If there appears to be a sticking or weeping valve, replace the diaphragm. Finally, proceed to the management component of spring irrigation—scheduling.

As a manager of resources, it's important that your irrigation scheduling reflect the seasonal needs of the plant material as imposed by plant maturity, soils, topography, and microclimates. Evapotranspiration (ET) factors including temperature, wind speed and direction, humidity, precipitation, and so forth also should be a part of the equation.

There are very specific and effective formulas in determining your irrigation schedules that weigh in on precipitation rates, ET data and plant needs. For most of us, spring ET demands range from one-third to one-half of peak ET demands in the hot summer months.

There's always the turf manager's buddy, the soil probe. Shove that thing down past the rootzone and take a look at the soil moisture content. If it's dry, irrigate. If it's saturated, don't. It may sound simple, but too many turf managers are grossly over-irrigating and a quick probe can tell you that. Runoff of sprinkler water in the shoulder seasons is ugly. If you're applying more than the landscape can absorb in April, what's going to happen in August?

Always schedule around specific weather conditions, like high heat, wind, and rain. Weather can be all over the map in the spring, and you should be prepared to respond to it. Snow overnight can give way to 60-degree temperatures the following afternoon.

Get in the habit of NOT watering in the middle of the day, unless you must. Generally, early mornings or late evenings will enable applications to land and stay longer on their intended targets. If you have to water in the wind, run zones with rotor heads before any zones with spray heads and consider using low-trajectory sprinklers. Rain sensors are no-brainers for not watering during a rain or snow event.

Don't forget to use the water budget feature on your controller, which saves you from reprogramming every zone each time a change is required. That percent dial should be adjusted monthly according to historical ET, then daily adjustments should be effected according to real-time weather conditions.

Let nature do the watering in the spring whenever possible. Generally spring rains provide good watering depth. Help the turfgrass make beneficial use of precipitation. Spring is a great time of year in the sports turf business. Use the excitement, energy, and a competitive spirit to drive your work. **ST**

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