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Smart watering puts gardeners in the green

By: Miles Blumhardt

Sprinkler upgrade helps grass grow, keeps bills low

You can debate the merits of Fort Collins' tiered water system all you want, but the reality of the situation is that if you aren't aware of your water usage, your water bill likely will get your attention.

With a little diligence on your part, you can avoid the angst entirely. While water-saving tips like "a little yellow, let it mellow; or when it's brown, flush it down" sound cute (well sort of) and will reduce water usage, let's look at the bigger picture - your lawn - where half of the water you use goes in the summer.

Brent Mecham, whose job as water conservation specialist with the Northern Colorado Water Conservancy District it is to test different ways to reduce water consumption, especially when it comes to the lawn, said the truth is that those with sprinkler systems overwater their lawns by 30 percent to 40 percent.

Those who water by hand - or "hose draggers," as he refers to them - overwater by 10 percent. That overwatering is why the majority of people experienced water-bill shock last summer, the first year of the city's tiered water system.

"If a person were to upgrade his home with low-flush toilets and low-flow showerheads, he'd probably be looking at the same out-of-pocket expense as if upgraded his sprinkler system, but the payback of the sprinkler system would occur in one-third the time," Mecham said. "I'm advocating both upgrades, but you can save more with upgrading the sprinkler system."

Now, are you ready to listen?

It will take some investment on your part in time and money, but the following options are the best return on your money when it comes to outdoor water savings.

MP Rotator - These sprinkler nozzles are the greatest invention to hit the sprinkler system world since the drip system. Why such a claim? Uniformity of spray heads is the key to getting efficient water coverage, i.e. no brown spots with less water. Sprinkler system audits in Loveland and Boulder revealed the average sprinkler system had a uniformity rate of 55 percent. Mecham said his study showed with MP Rotator nozzles you can get at least 70 percent and up to 80 percent uniformity.

The nozzles use one-third less water flow of a traditional nozzle, which means less runoff, and make larger zones possible. They are easy to install and fit on just about every existing pop-up head model. You simply remove your existing sprinkler head and replace the existing nozzle with the MP Rotator nozzle. The nozzles are adjustable in 90-degree to 210-degree, 210-degree to 270-degree and 360-degree models and can cover from 12 feet up to 31 feet. Next year, the company is expected to introduce models to cover smaller areas.

They retail for \$7.50 per nozzle, which is much more than a traditional nozzle, and can only be purchased through contractors, such as sprinkler installers. Mecham pointed out another potential downside of the MP Rotator (www.mprotator.com) is if watering restrictions include the amount of time you can water. MP Rotator

applies the water more slowly than traditional nozzles, which means they might not be able to run long enough to water adequately.

Laurence Budd, owner of Allison Irrigation, said he's been using the nozzles this year with good results.

"Older homes where there is a mix of rotors and pop-ups or they have way too many heads on one zone is an ideal use for these," Budd said. "Wind can be an issue, and it's hard to control overspray in tight areas, but I can live with that given the excellent uniformity."

Sub-surface irrigation - A couple years ago when this system first hit the local market, it was the best thing since the drip system, until the MP Rotator came along. This system is basically a drip system installed in a grid fashion under a lawn area.

Most studies show a water savings of 30 percent to 50 percent over traditional above-ground sprinkler systems. With more companies installing these systems, the cost is coming down and now is only slightly more than a traditional system. The difference can quickly be recouped through water savings.

Mecham said due to the precision required by this system to assure complete coverage and no brown spots, installation is best left up to the professionals. Netafim (www.netafim.com) is the major manufacturer of this product. The products are sold through local sprinkler companies.

Soil moisture sensors - The technology rapidly is improving on these water-saving devices. Simplistically, you stick them in your lawn and they shut your sprinkler off when it senses enough moisture.

Realistically, where you place the sensor is critical, they take tweaking to get them to work properly and it requires simple wiring skill. If you're willing to take the time to tweak them and do the little wiring required you can install it yourself. Otherwise, call a professional sprinkler company. Mecham has tested many of these sensors. The one that has tested best was the Colorado-based Lawn Logic (www.lawnlogic.com). It retails for around \$300 and is sold locally at sprinkler companies.

Others that tested favorably include the Water Watcher (www.waterwatcher.com) that retails for around \$350 and the Watermark by Irrrometer (www.irrometer.com) that retails for \$200.

Evapotranspiration (ET) controllers - Like soil sensors, they are becoming more home-owner friendly. ET is the rate plants lose available water through soil evaporation and through their leaves. These controllers determine the ET rate for your area then tell the sprinkler system how much water is needed.

Of those Mecham has tested, three have stood out. The Aqua Conserve (www.aquaconserve.com), has a range of \$125 to \$340, depending on how many stations you wish. The **WeatherTRAK by HydroPoint** (www.hydropoint.com) retails at around \$550 and the Weather Reach (www.weathereach.com) around \$1,000 and can only be purchased through contractors.

Mecham recommended that if installing a new sprinkler system to add three extra wires to the unit to allow for future upgrades of sensors.

Sprinkler system tuneup - From the sophisticated to the not-so-sophisticated. For around \$50 you can have a sprinkler company come out and start up your system for the year and walk your system to make sure your heads are spraying on the lawn instead of the street, that the heads are not tilted, that heads or lines aren't broken and that your vacuum breaker didn't receive freeze damage.

"People think that if a head is spraying that it's working," said Bob Toomey, owner of Evergreen Landscape and Sprinkler in Fort Collins and a certified water auditor. "That's not necessarily the case. If a head is a half-inch off level, it makes a huge difference in efficiency. You need to walk around the system and check for underground leaks for broken lines to really make sure your system is running efficiently."

Toomey said homeowners can visually inspect their own system in an hour. Broken underground lines will result in a spongy feeling and will create a bulge in the lawn surface. Leaking heads will either squirt or

dribble water and create a puddle next to them.

"If people took care of their cars like they do their sprinkler systems, we would have a lot of broken down cars," Mecham said. "You buy a big SUV and never change the oil and somewhere down the road you will be unhappy with it. The same can be said with a sprinkler system."

Sprinkler math

Here is how to accurately determine how much water your sprinkler is putting out. You will need to do this for each zone of your system.

Place four identical straight-sided cans such as soup, fruit, vegetable or coffee cans around the area being watered by that particular zone.

Turn on the sprinklers for that zone for 15 minutes. Make sure sprinkler heads are working properly.

Turn off the sprinklers after 15 minutes and pour water from three of the cans into the fourth can.

With a ruler, measure how deep the water is in the can. This will become the precipitation rate of that zone of your sprinkler in inches per hour. Keep this near your controller for future reference.

Once you know the precipitation rate, then you can calculate how many minutes your sprinkler will need to run to apply a desired amount of water. This is done by dividing water to apply by precipitation rate x 60 minutes to equal minutes. As an example, say you wished to apply a half-inch of water. Divide the half-inch (water to apply) by 1.5 inches (precipitation rate) x 60 (minutes) to get a run time of 20 minutes.

Source: Northern Colorado Water Conservancy District