Irrigation for a Growing World

In case you haven’t heard, there is a water crisis! First, only 1% of the world’s water is usable. The vast majority (97%) is in the seas and oceans and is therefore saline and 2% is present as snow and icebergs. Second, it is never in the right place at the right time. Third, there is no new water – what we have currently is forever.

The reason for this cold facts introduction is simple. We must encourage the responsible use of water and as turf managers, that means adjusting irrigation practices.

At the present time, approximately 69% of North America’s fresh water (not including the cold north) is used in agriculture, 10% is used by industry and 21% is used municipally – that’s us!

If we all use water more efficiently, we will have an impact on the...
availability of the supply. The following are the options that we have to address water scarcity.

Option 1. Increase Cost.
Price water higher so that we appreciate its value and are more careful and diligent with its use. This, however, has major negatives, particularly with respect to poorer people and nations. It’s also hard to get a buy-in from all groups as there will always be different levels of need and availability.

Option 2. Water Re-use.
Water recycling can reduce fresh water consumption by up to 80% because there are many uses of fresh water that don’t require it to be potable (of drinking quality) – cooling, construction, manufacturing and golf course irrigation to name a few. One problem of course is that this option is expensive and is not always available.

Option 3. Desalination.
If the desalination plant is near the coast, the supply is enormous, and with improvements in technology and decreasing costs, this option has a definite future. It does however have high capital costs and represents a negative for the environment.

If used in the right location, many native plants can thrive on natural levels of rainfall and therefore irrigation can be reduced or eliminated. A potential problem here is that some of these plants are often not colourful and with a variety of different plants, irrigation must be used again. Drip (or low volume) irrigation is sweeping the world in popularity, not just in agriculture, but also in other plant applications. Drip irrigation is very successful and dramatically conserves water for most plant material. Unfortunately, it has not been successful on turf.

Option 5. Water Efficient Irrigation.
This can be implemented immediately or in stages. There are significant savings in water and therefore dollars in both agriculture and horticulture with proper design, products, installation, usage and maintenance.

Proper Irrigation Design and Products
Different plants and soils require different amounts of water and therefore it’s important to understand exactly what will be irrigated and to use the right product for water applications and distribution.

Many irrigation products today are designed to conserve water and significant research advances in technology are available with automation, exact water applications and nozzles that, if chosen properly, put down a very even cover...
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Automatic controllers with water conserving features are readily available with multiple start times and independent programs for different soils, crops and climates such as cycle and soak for heavy clay and hill sides.

Managers can also plan water budgeting for easy seasonal changes. Evapotranspiration programming, rain delay and automatic set-off devices as well as instruments that can measure rain in the air or moisture in the soil are all powerful tools.

With all these new irrigation products, water pressure is critical. For example, high pressure produces misting and fogging and a 5 psi drop in pressure often means better irrigation and 6-8% lower water usage. For very little cost, regulating devices can be fitted which ensure even and precise water application. Booster pumps should be considered in low pressure situations. These pumps are not expensive and are completely automated to the irrigation system.

Installation and Maintenance

Irrigation systems must be properly installed and configured to achieve the most efficient use of water and to give the user the best turf possible. Only Certified Irrigation Contractors (CIC) should be hired. Maintenance and operation is vital because without regular inspections and repairs, many problems will go undetected.

When water is in short supply, the initial reaction is often to shut off the taps. This can lead to confusion and increased water consumption when water bans are lifted. It is a reactive measure that does not change the behavioural habits of the user. Government grants, rebates and incentives can change behaviours, along with perception, responsibility, education and awareness.

The need to conserve water has never been greater. We need to do even more and with everyone’s help, we can.

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