

# Easy Irrigation Scheduling with Free On-line Calculator

Abstract

Until recently, calculating proper irrigation scheduling involved a complex, time consuming and daunting effort. Today, the highly user-friendly program from Gaia College requires mostly descriptive information that is readily available, without need to translate into numbers. Still unsure about the process? An irrigation scheduling tutorial is available.

With climate change and dwindling fresh water resources, turf irrigation is becoming a hot topic. In fact, most municipal watering restrictions are specifically targeting turf because it often is perceived to be the great landscape "water hog." Even in non-arid regions, more and more home owners are ripping up their lawns and converting them to what they believe are drought-tolerant plantings. It's becoming the politically correct thing to do.

Ironically, well-maintained turf, whether managed organically or non-organically, does not require any more water than most mixed landscapes. The real problem is incorrect irrigation scheduling, not intrinsic plant water needs! It has been shown that effective irrigation can result in water savings of up to 50 percent, but too many individuals find the calculations required to develop a proper irrigation schedule are daunting, to say the least. That's no longer true.

The irrigation calculator developed by Gaia College changes all that. "Congratulations, I was pleasantly surprised," says Herman Marien of the European Irrigation Association, "your web-calculator makes irrigation scheduling accessible to everybody. Many thanks."

## What is Effective Irrigation?

Effective irrigation supplies sufficient water to allow plants and soil organisms to thrive. Too little water weakens turf and disrupts microbial activity and diversity in the soil. This creates an opportunity for diseases and undesirable plants to become established. Too much irrigation results in water, soil fertility and money(!) going down the storm drains.

Effective irrigation applies water deeply to the entire root system of the vegetation. Infrequent and thorough applications encourage healthy turf with strong, deep root systems able to out-compete weeds and withstand periodic drought conditions.

The goal is to replenish the water lost to evaporation from the soil and transpiration from the plants before the vegetation becomes stressed by insufficient water reserves in the soil.

Finally, effective irrigation applies



water only as quickly as it can infiltrate into the soil, preventing puddling and erosion.

Incorrect irrigation is a very important contributing cause of environmental pollution!

## How Does the Irrigation Calculator Work?

The calculator is highly user-friendly. It collects mostly descriptive information about your climate, landscape water needs and soil conditions, and specifics about the irrigation system. All of this information is readily available, and there is no need for you to translate it into numbers. An irrigation scheduling tutorial is available for those who are unsure about the process.

The calculator is organized into five sections:

- 1- **Identification information**—In this section you are able to identify your company, your client, the irrigation zone and the calendar month for which this schedule was developed.
- 2- **Reference evapotranspiration**—The calculator uses the monthly water budget method of irrigation scheduling. It relies on historical information of monthly evapotranspiration of a reference crop (turfgrass or alfalfa). This information is commonly available from the Ministry of Agriculture, your local university extension office or on the Internet. For instance, in British Columbia, Canada, the information is found at the Farmwest website.
- 3- **Landscape information**—Here the evapotranspiration of the reference crop is scaled to the vegetation in your irrigation zone. This is where you supply details about the types of plants, their water needs, planting density and the microclimate.

Calculator continued on page 67

By Heide Hermary, President,  
Gaia College Inc., Victoria, BC  
Tel: 250/853-6802

E-mail: [heide.hermary@organic-land-care.com](mailto:heide.hermary@organic-land-care.com)

Website: [www.organic-land-care.com](http://www.organic-land-care.com)

Calculator:  
[www.organic-land-care.com/irrigation\\_calculator.php](http://www.organic-land-care.com/irrigation_calculator.php)

**Calculator** *continued from page 65*

- 4- **Soil information**—The other big variable is the soil. Different types of soil have different water holding capacity and different infiltration rates. The calculator now asks for the soil type, whether the sub-soil is uniform or compact, whether the soil surface is bare or covered, and the degree of slope. It also wants to know the root depth of your vegetation and how much the soil is allowed to dry out between waterings.
- 5- **Irrigation equipment**—Finally, the calculator requires some information about your irrigation system. You start by selecting your type of application equipment, and then indicate whether watering restrictions are in place. Once you've submitted that information, the calculator will ask you for the application rate of your irrigation system, the system efficiency and—if watering restrictions apply—the number of watering days per month.

Then, at the click of a button the calculator presents you with the fully calculated irrigation schedule: the number of irrigation days per month, how many cycles per day, the on-time for each cycle, as well as the interval between cycles.

**How Does the Irrigation Calculator Benefit You?**

The on-line calculator can help you to optimize water use and turf health. Whether you've never properly calculated your irrigation water requirements, or whether you've been doing the calculations by hand, the Gaia College calculator will save you time and money. The calculator is accessible 24/7, and free of charge, on the Gaia College web site: [www.organic-land-care.com/irrigation\\_calculator.php](http://www.organic-land-care.com/irrigation_calculator.php)

As a turf producer you also have a direct interest in the education of your clients and the public perception of turf. Healthy turf and responsible irrigation practices are good advertisement for you and the industry. So share the web link with the landscapers and homeowners who come to purchase your turfgrass sod. Show them how easy it is to save water and keep their turf lush and healthy at the same time. Your clients will be impressed by your professionalism and your environmental concerns.

Says a Victoria landscaper who wishes to remain anonymous, "I have been installing turf and irrigation systems for years, but let's face it, who has the time to develop



monthly zone-by-zone irrigation schedules for every client? I don't know anybody in the field who does this. This calculator is just amazing. I now use it to design my systems and then provide my clients with their own personalized irrigation schedules. My credibility as a professional has just increased exponentially."

**Why are We Offering this Calculator Free?**

We care about the environment, and we care about our communities. Our mission is to provide affordable and accessible education in environmentally sound landscape practices. This calculator was developed in support of our on-line programs, but we

think it can benefit more than just the students. For sustainable water management, it is such a powerful tool that we don't want to keep it hidden behind a password. It's our gift to Mother Earth. Please use it freely, save time and money, share it with your clients and the people in your community, and benefit the environment as well.

**Your Comments**

We would like to have your comments about the calculator. Tell us how it works for you, or if you would like us to add other features to make it more useful for your particular industry. We can also custom design a calculator for your organization! And most of all: enjoy it!



**NOTE:** Heide Hermary is an IIABC Certified Irrigation Auditor. Gaia College offers on-line education in Organic Landscape Management and Organic Turf Management. They can be reached at [info@organic-land-care.com](mailto:info@organic-land-care.com)