

# UVC TECHNOLOGY & FIELD SANITATION

## GreenZapr™



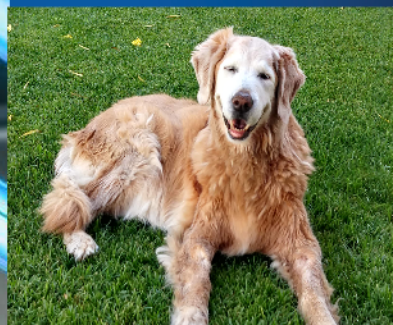
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**850 GreenZapr  
&  
860 MiniZapr**

The Center for Disease Control cites **Five Cs** for easy transmission of STAPH and MRSA.

- **C**rowding
- **C**ontact: frequent skin-to-skin **C**ontact
- **C**ompromised skin (i.e. cuts or abrasions)
- **C**ontaminated items and surfaces; and
- **L**ack of **C**leanliness



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# FIELD MAINTENANCE INNOVATION WITH UV-C

New in 2011, the 850 GreenZapr™ represents a new standard in synthetic turf safety. Built around germicidal ultraviolet (UVC) lights, the GreenZapr disinfects synthetic surfaces with powerful exposure, instantly destroying harmful micro-organisms. From viruses such as Hepatitis, HIV, and Influenza to bacteria such as MRSA, E-Coli, Salmonella, and Staph, GreenZapr creates the ultimate benchmark for field safety.

The 850 GreenZapr is built on the same, high-quality fabrication people have grown to expect from GreensGroomer. Powered by a portable Honda generator or optional rechargeable gel cell, the UVC lamps are mated into two reflector modules. The standard 3-pass treatment places over  $7,800\mu\text{W}/\text{cm}^2$  of UVC energy on any given portion of the field — killing all harmful micro-organisms.

Although UVC technology is new to the sports turf industry, it is not new to many other industries that now rely on it for sanitation. Developed heavily in the 1920s, UVC technology is now the primary solution when combating micro-organisms. Food processors, along with air/water treatment facilities/specialists,

for example, use this technology to secure the nation's food, air, and water supply safely and economically.

## **Powerful Germicidal UVC**

## **Destroys 99.9% of Harmful Micro-Organisms**

## **Reliable On-Board Power**

## **Most Efficient, Cost-Effective Sanitation Technique**

## **Avoids Governmental Water & Chemical Use Controls**

The challenge GreensGroomer WorldWide faced when adapting the technology to sports turf was its portability and light intensity. Instead of moving material over the static UVC source, we had to move the source over the material.

Our solution for portable power lets you choose either a 1000W Honda® gas generator or rechargeable gel cell batteries. For UVC light intensity we chose to employ 2 reflector modules each with 8 patented, high energy UVC bulbs. Combining these two solutions into a durable support structure gives sports turf professionals the best choice for results and cost.

Compared to other sanitation techniques, the GreenZapr is the most efficient, most cost-effective method available to the industry. The GreenZapr represents the third support component of GreensGroomer's solution. Combined with the 926 Integrated Synthetic Sports Turf Groomer and the 760 LitterKat Turf Sweeper, professionals now have a complete package.



*The spring tine rake attachment is equipment with 42 tines that comb through the turf surface, lifting fiber and infill, preparing the turf for exposure.*

## **Protecting Athletes One Zap At a Time!**



The GreenZapr is equipped with many safety and efficiency features which allow for simple, intuitive operation. High quality roller-type wheel bearings allow for smooth and easy positioning on and off the pitch.

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- Crowding**
- Frequent skin-to-skin Contact**
- Compromised skin (i.e. cuts or abrasions)**
- Contaminated items and surfaces; and**
- Lack of Cleanliness**

The reflector modules are set into operational mode with a simple hand crank and are protected with corner rollers.

The miniZapr is also available, which is a great solution for hard to reach spaces, locker/weight rooms, and fitness areas.

## SANITATION IS NOW EASY AND AFFORDABLE

The day has arrived when field safety can be achieved without the use of harmful chemicals and scarce water resources. Facility Managers can now address the risks of MRSA and HIV on all sports surfaces and do so in the most cost effective manner possible. Deigned by GreensGroomer WorldWide® the GreenZapr® uses the power of UVC technology to destroy harmful germs inherent in sports turf surfaces.

The high cost of current sanitation techniques makes it virtually impossible to address needs on a frequent or immediate needs basis. The GreenZapr makes pre or post event sanitation possible and rapidly pays for itself by avoiding high cost, repetitive chemical treatments. Over the long haul, the fiscal argument is clear not to mention that ultimate safety is addressed with such a simple, proven solution.



## THE BASICS OF GERMICIDAL UVC

For some, understanding the effectiveness of UVC technology is a little complicated. In the simplest terms, UVC energy destroys the DNA bonds of the organism which results in the inactivation of the virus or bacteria.

The main considerations for the effectiveness of UVC inactivation are lamp intensity and exposure time. Lamp intensity is a function of the bulbs radiant energy and the distance from the surface. Once an intensity factor is established it is simple to determine how long the surface needs to be exposed.

In order to destroy the most harmful of micro-organisms present in sports turf, one must achieve an energy dosage of over **6,600 (mJ/cm<sup>2</sup>)**. We've designed the **GreenZapr's Energy Dosage of 6,707** with a 2 1/2 inch lamp distance to the surface. Using this configuration, a user needs to travel at 6 miles an hour over the field three times. Below is a chart showing some important micro-organisms and their effective kill factors.

MICRO-ORGANISM KILL FACTOR LEVELS (mJ/cm <sup>2</sup> )		
Organism	90% Kill Factor	99.9% Kill Factor
Bacillus anthracis	4,520	8,700
Escherichia coli	3,000	6,600
Salmonella enteritidis	4,000	7,600
Staphylococcus albus	1,840	5,720
Staphylococcus aureus (MRSA)	2,600	6,600
Bacteriophage {E. coli}	2,600	6,600
Infectious Hepatitis	5,800	8,000
Influenza	3,400	6,600
Poliovirus-Poliomyelitis	3,150	6,000
Vibrio comma ~Cholera	3,375	6,500

It is important to note that although UVC is hard on germs, it's not hard on the field. . We've put the UVC technology through exhaustive laboratory tests. We exposed synthetic turf to a range of sample applications from **8,600 to over 25,000 (mJ/cm<sup>2</sup>)**.

The tests were simulated using a 1, 6, and 24 hour exposure times. These times translate to **8, 50 and 200 years of twice daily GreenZapr use**. The effected samples were put through a range of ASTM standard material tests. The results showed no difference between the three samples and the control sample.

**Contact us at (800) 541-1285 option 1 For More Information**



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