

GRAMINA
TOP GREEN



**DISINFECTION
OF SPRINKLING WATER**

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Water is a limited commodity, whose careful handling more and more of us is required! We will therefore have to get used to the idea of using only service water and surface water for sprinkling sports lawns. As a rule, however, this water is contaminated with microbes (bacteria and algae).

In Germany there are already many golf courses in this situation. Necessarily, these forms of water are stored in an irrigation pond, which - especially in the summer months - leads to a significant increase in microbes.

Green and / or blue-green algae, E. coli, coliforms and clostridia are detectable in most ponds. The permanent mission of this polluted water on greens, fairways and tees has damaging effects on the lawn biology and leads to unfavorable anaerobic conditions, which are supported by the low topsoil, fertilization and constant humidity.

The consequences are:

- stinking turf wearing courses,
- bad root growth,
- incomplete stock,
- Settlement of shallow-rooting grasses
- Spreading of algal layers,
- the formation of „black layers“.

In addition, playing the golf course during irrigation (depending on the microbial concentration) may affect healthier golfers with labile health by inhaling contaminated aerosols.

As human pathogenic microbes the following were found in the irrigation water:

- Klebsiella
- E. coli
- Coliform germs
- faecal streptococci

Irrigation water from surface water in the warm season is always heavily contaminated with germs of all kinds.

Nobody would come up with the idea of washing themselves with such water or even drinking it.

Critical to humans are potentially human pathogens that are spread and inhaled when sprinkled over fine droplets (aerosols) with the wind.

Critical to the lawn are fungi and algae, which are applied in large numbers every time they are watered and spread over the blades of grass and the ground.

So far, there was a lack of practicable procedures and applications that meet the hygienic requirements of a golf course system. This is now over.

GRAMINA TOP GREEN is a highly effective, neutral disinfectant on a purely mineral basis (WATER HAZARD CLASS 0). The treated water is germ-free, clear and the pH value is not changed.

GRAMINA TOP GREEN counteracts free-swimming germs and the existing biofilm in water tanks, irrigation bars, hose lines, syringes, etc. This significantly less germs are applied, which burden the green and possibly severely damage. The permanent application of contaminated water disturbs the lawn biology and favors anaerobic conditions, which are further promoted by the low topsoil, fertilization and constant humidity.

GRAMINA TOP GREEN, which has biocidal properties, is produced in accordance with the guidelines of the Drinking Water Ordinance (TVO) and is approved according to DIN EN 901.

GRAMINA TOP GREEN is non-toxic (water hazard class 0) but destroys the cell membranes of microorganisms and thereby kills them.

POSSIBILITIES OF MEAT PREVENTION

APPLICATION

GRAMINA TOP GREEN can be metered directly into the irrigation line at different concentrations or, in the case of heavy algae, partially applied for direct control.

Machinable surfaces before application with **GRAMINA TOP GREEN** mechanically; suitable are tufts or other devices that scratch the algae crust.

In case of heavy infestation *:

30 L **GRAMINA TOP GREEN** per 600 liters of water / ha. Repeat every 14 days.

In medium infestation:

20 l of **GRAMINA TOP GREEN** per 600 liters of water / ha. If necessary, repeat after 14 days.

At low infestation:

10 L **GRAMINA TOP GREEN** per 600 liters of water / ha.

*Heavy infestation occurs if more than 30-40% of the area is affected or if the algae layer is > 1mm thick.

AFTER THE APPLICATION

- On the same day, a reseeding with suitable lawn mixtures can be done.
- The application of **GRAMINA TOP GREEN** should be repeated approximately 14 days after the initial treatment in case of severe algae. In this case, the lower concentration can be selected.

Packaging: 2x10 liter canister

Application rate: 10 to 30 L / ha

Water volume: 600 L / ha

Max. Applications per year: unlimited.

Recommended frequency of use: 2-3 months during the season and 1 time in autumn / winter.

There is no need to keep a time interval.

GENERAL APPLICATION NOTICES

- **GRAMINA TOP GREEN** should not be mixed with other preparations (eg fertilizers)
- No fertilizer, wetting agent or pesticide should be applied 3-4 days before use.
- Large dripping nozzles should be used to minimize aerosol drift.
- there should be sufficient soil moisture.
- The application is largely weather-independent, (but do not apply **GRAMINA TOP GREEN** in heavy rain or heat).
- After application, any mechanical work can be carried out immediately.
- **GRAMINA TOP GREEN** does not have to be graded.
- **GRAMINA TOP GREEN** is not a hazardous substance, and no labeling, no special protective equipment when handling is required.

The **GRAMINA TOP GREEN** doped water has residual activity when it penetrates the soil. This can be used to suppress surface algae, especially if you mechanically loosen the soil beforehand and scratch the algae layer (tufa). Immediate reseeding and greening closes the previously pitted areas. On the lawns that are rained with **GRAMINA TOP GREEN** the germ attack is reduced. Felt layers and spots form back and the lawn can recover.

A foul smell of the base course is gradually replaced by earthy odor and the lawn is rooted and greenens back to normal.

The spectrum of efficacy, efficiency and overall positive results speak in favor of our water treatment process.

WATER TREATMENT WITH QUALITY INCREASE

We have further developed our product specifically for the hygienic requirements of irrigation of lawns. We have completely renounced organic chemistry. **GRAMINA TOP GREEN** does not pollute the environment. A proprietary process produces a neutral, aqueous saline solution with a high positive redox potential.

COMPOSITION

Ingredients: water, table salt, sodium hypochlorite
Active ingredients: < 0.15% sodium hypochlorite

TECHNICAL INFORMATION & STORAGE

Color / shape: colorless, liquid
pH value: 6.7 - 7.3
Keep container tightly closed. Store cool, frost-free and protected from light.

EFFECTIVENESS

GRAMINA TOP GREEN is tested according to European standards. The specified exposure times ensure full effectiveness against bacteria, viruses, fungi and algae. Removes existing biofilms sustainably.

IDENTIFICATION - deleted after GefStVo

GRAMINA TOP GREEN is not hazardous. However, precautions should be observed when handling chemicals. Batch number and expiry date see imprint.

MATERIAL COMPATIBILITY

If used properly, no material damage is to be expected. Suitable for all water, chlorine and alkali resistant materials.

TESTS & SERVICES

- tested according to DGHM guidelines
- The method is described in Technical Rule W 229 of the DVGW
- meets the purity requirements of DIN EN901 for drinking water disinfection.

DISPOSAL

Can be discharged into drains under sufficient dilution. The respective country-specific waste and wastewater regulations must be observed. Plastic containers can be supplied to the recyclables collection after emptying and rinsing with water.

MORE INFORMATION

All information corresponds to our current level of knowledge. They are the result of our previous experience & reviews.

The user is obliged to always check the compatibility or to obtain technical advice.

Contact us by email or phone to learn more about the benefits and offers.

Use disinfectant safely. Always read the label and product information before use.

