

COMPONENTS OF SOLUTION

The Organica Water Food Chain Reactor Solution



THE ORGANICA FOOD CHAIN REACTOR (FCR)

The Organica Food Chain Reactor (FCR) facility is a type of Fixed-Film Activated Sludge system using natural (plant roots) as well as engineered media (inspired by root structures) to allow growth of robust and healthy biomass that effectively gobbles up the incoming load in the effluent. The plants – via their roots – not only provide a huge amount of surface area, but they also complete the food chain that exists in the biological reactors, thereby enabling a diverse ecology and resilient biofilm that is able to handle a higher amount of fluctuations in influent quality and quantity compared to conventional suspended or attached growth systems.



COMPACT SOLUTION, EASY OPERATION

One of the key factors in achieving space efficiency is the fact that the Organica FCR can be designed without using suspended biomass (MLSS), which ensures that the solids exiting the reactors can be directly fed to a specially designed disc filtration system, thereby eliminating the need for secondary phase separation.

ADVANTAGES

With nearly two-decades of experience in the development and design of fixed-film wastewater treatment solutions, Organica's FCR (Food-Chain Reactor) represents the best-of-breed in FBAS wastewater treatment plants (WWTPs).

- Up to **60%** smaller physical footprint
- **30%** or greater **reduction** in operating expense (OPEX))
- Optimized **sludge** production
- **Unique** look & feel
- **Shorter** construction time
- **Resilient** and **stable** system

APPLICATIONS of the FCR facility:

- Municipal upgrade
- Real estate development
- Water reuse applications
- Municipal wastewater treatment

Want to learn more about Organica?

Please visit www.OrganicaWater.com | info@organicawater.com

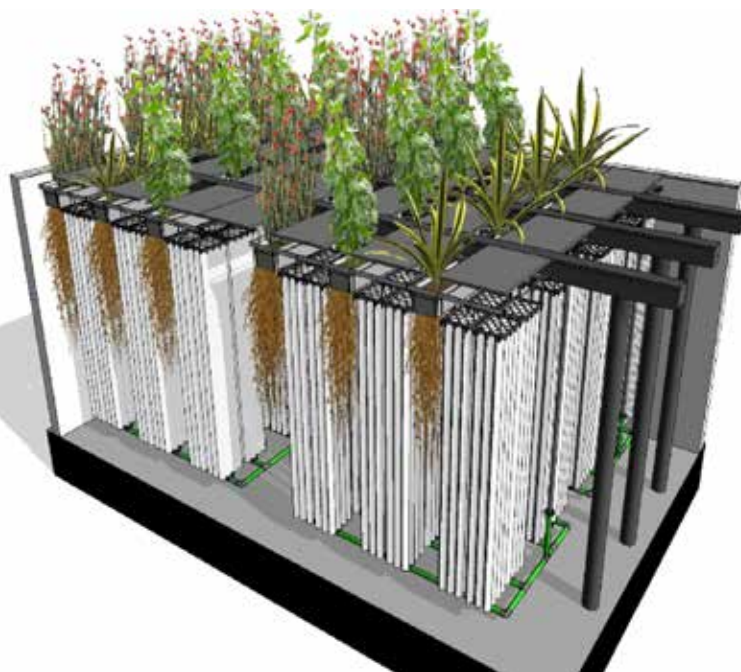
THE ORGANICA BIOMODULE

At the heart of an Organica FCR Facility is the Organica Biomodule. Designed to fit securely into the biological reactors, each Biomodule acts as the support structure for both the plants whose roots make up the primary biofilm carrier, and Organica's patented biofiber media designed to mimic the structure and function of the plant roots.

The root structures in turn provide an ideal habitat for a thriving ecosystem – both larger (2-4x greater active biomass per cubic meter of reactor volume) and more diverse (3-4x greater species

diversity) than the biology found in typical conventional activated sludge based systems.

This results in the development of a distinctive self-regulating ecosystem with operational flexibility and high resilience to unexpected influent fluctuations and shock-loading. In addition, because the Biomodules support this unique biofilm fixed on the root structures, the process utilizes much lower suspended solids content in the water (typically 90% less than conventional suspended growth systems). These lower suspended solids content improves oxygen transfer efficiency and results in significant energy savings.



THE ORGANICA DISCFILTER

The Organica Discfilter is a mechanical filtration device specially designed to remove total suspended solids (TSS) from wastewater streams following biological treatment in an Organica FCR Facility. Each discfilter incorporates a simple, yet sophisticated, design that ensures continuous low-maintenance operation and stable, reuse-quality effluent; all with a drastically reduced footprint over conventional secondary clarification.

As an Organica FCR Facility is a fixed-film system utilizing biofilm that is attached to root structures, the suspended solids content of the water in the treatment process is low (100 – 300 mg/l). This allows the use of Organica Discfilters for phase separation directly after the biological treatment step.

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