bioactivIFAS™

Advanced Wastewater Treatment Solutions

Innovative Attached Growth Technology

bioxgreen™

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About us

Bioxgreen Technology Pvt Ltd (BXG) is biotechnology company that provides niche and innovative solutions for wastewater management in the Municipal and Industrial segments. BXG has been pioneering proof of concepts for addressing the challenges of wastewater treatment both in greenfield and brownfield projects. Through the R&D facilities at Hosur in Tamilnadu, BXG has engineered innovative products & solutions for contemporary STPs, ETPs, Drains / Nallahs towards mitigating the ever-increasing contamination issues that plague the brownfield installations.

What do we offer in brownfield wastewater management?

To alleviate the problems of achieving the stringent Pollution Control Board regulatory standards, BXG has developed customised end-to-end solutions to upgrade under-performing brownfield ASP wastewater treatment plant. To achieve the desired discharge water quality, we have leveraged on **BioActiv IFAS^{AM}** which is based on innovative attached growth technology. As manufacturers of bespoke microbial consortia, BXG's pre-coated BioActiv IFAS^{AM} is distinctly different from other IFAS solutions. It has the advantage of an enhanced surface area that is pre-coated with active bio-culture facilitating seamless integration for biological treatment of wastewater! Our solutions are innovative, efficient, reliable, sustainable and customised to suit the requirements of wastewater treatment, targeting 'on-the-ground' O&M challenges of effluent quality discharge.

How is BioActiv IFAS^{AM} different from conventional IFAS?

- **BioActiv IFAS^{AM}** is pre-coated with pollutant specific pure culture microbial consortia manufactured by Bioxgreen.
- Has larger surface area as compared to conventional IFAS.
- Facilitates shorter start-up and activation time for reaction kinetics of microbes in the system.
- Provides efficient and robust solution depending on wastewater characteristics, while achieving the target discharge norms.
- Bespoke consortia is based on the unique principle of **RGRC™ (Rapid Growth Robust Consortia)** bio-culture that works in synergy with the existing natural strains present in wastewater.
- Can be incorporated in existing wastewater treatment plants thus upgrading and improving the process efficiency of treatment facilities.

How does BioActiv IFAS AM work?

The working principle involves a three-pronged approach encompassing:

Research

- Proper diagnosis of existing system and treatment design.
- Analysis of the effluent characteristics to identify major reasons of pollution.
- Establishing the Baseline values of the effluent inlet and outlet characteristics in the existing systems.
- Calculate and confirm the air requirement of the current facility.

Innovation

- Our think-tanks in R&D along with Microbiologists have assimilated the capability to develop Bespoke pure culture based microbial consortia for various effluent characteristics.
- These cultures are pre-coated on Biomass media in BXG's facility and deployed at project sites for application in WWT plant.

Execution

- At site, "BioActiv" IFAS AM pre-coated Biomass media is deployed in the existing aeration basin.
- The first step is introduction of Initial booster dose of bio-culture along with pre-coated media.
- This is followed by a maintenance dosage post stabilization of the system and achieving of the desired results.

Key Differentiators

- **BioActiv' IFAS AM** can be custom designed for Industrial ETPs ensuring the pollutant under check is effectively biodegraded.
- **'BioActiv' IFAS AM** operational activities are easy to perform and could be managed by any trained and skilled operator.
- **'BioActiv" IFAS AM** carries out better nitrification compared to simple suspended growth systems.
- **'BioActiv' IFAS AM** can handle shock loads with quick upset recovery and shall not disrupt the output parameters.
- Double the efficiency as compared to the conventional IFAS systems available in market, where cow dung / sludge based consortia are commonly used.
- The fixed biomass combines aerobic, anaerobic & anoxic zones and increases the Biomass Retention Time.
- Quick reaction time thereby stabilizing the system in a shorter period.
- Instant activation of consortium due to presence of a pre-formed biofilm of customized high potency, high efficiency bio-culture on the surface of the Media.
- Fixed Biofilm of Pollutant specific pure culture consortium of microbes remains resident in the reaction mass (Aeration Tank) to carry out the biodegradation activities.
- Stabilizes waste water treatment plants in half the time taken for regular IFAS with Improved process stability.

Fact Sheet

BioActiv IFAS™ pre-coated media	Conventional media
★ > 580 m^2/m^3 surface area (10,000 pc)	★ 380 m^2/m^3 surface area (10,000 pc)
★ Specific Gravity 1.01 (sinks in water)	★ Specific Gravity < 0.98 (floats in water)
★ No. of pieces per m^3 – 7,500 – 11,000 approx.	★ No. of pieces per m^3 – 70,000 approximately
★ Oval shaped media	★ OD – 25mm
★ MOC – Thermosetting resin – density – 1.35 kg/m^3	★ MOC – PP/HDPE – density – 0.7 to 0.93 kg/m^3
★ Media sinks in water – 100 % wetted surface	★ Reduce wet surface caused by floating
★ 7% to 10% of liquid volume of aeration tank	★ 30% to 50% of liquid volume of aeration tank
★ Maximum temperature – 55° C	★ May clog with prolonged running
★ Avoid sludge recirculation	★ Sludge recirculation necessary
★ Hydrocarbon resistance – very good	★ Higher transportation cost
★ Non-clogging	★ Higher investment due to more media for same application
★ Non degradable MOC	
★ Lower transportation cost and investment	

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