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Innovative technology for sustainability in coffee production

Scalene Livprotec brings the next generation sustainability to the coffee world: World Coffee Conference 2023

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The popularity and consumption of coffee are growing rapidly as a beverage and it is one of the most important commodities today. However, the production of coffee globally generates an immense environmental footprint, affecting our water, air, food and soil. The resource-intensive processes involved in various stages, such as pulping, fermenting, drying, sorting, grading and curing generate organic waste. creates wastewater adversely affecting the environment. As the world pushes towards net zero, current technologies are unable to adequately process organic waste and treat wastewater in a sustainable manner. This shall eventually impact the environment adversely impacting the production and economics of coffee.

To foster sustainability in coffee, Scalene Livprotec brings next-generation Lignocellulosic management of coffee residue and wasted water technology to coffee production. Our uniquely automated, paradigm-altering inventions create lower operational costs that allow for profitability and stop environmental damage. Our integrated technology solution, comprising SERIGAS (Organic Natural Gas) and Aquatron (Water Recovery System), has been successfully implemented at Bombay Burmah Trading Corporation Limited in Coorg, India for the last 14 years. These technologies can advance the coffee industry to the next level of absolute sustainability.

Transform Coffee Waste into Energy

The biomass generated from the production process (pulping, fruit skin generation, mucilage, husk etc.) can be transformed into a source of rich grid-grade natural gas with our SERIGAS technology. The SERIGAS can be utilised for producing electricity and used as fuel for the coffee drying process. Our technology is an organic process that produces high-grade methane as per IS 16087 standards for the transformation of lignocellulosic coffee agricultural residue into high-grade renewable natural gas. Our process of generating the gas also produces the most essential bio-nutrient with 13 trace elements required for enhancing coffee production. The high alkaloid pest repellent produced by our process is an excellent pest control for berry borer and stem borer in the coffee plantation.

Recover pure water from coffee mucilage

The effluent generated from pulping, fermenting and washing-related processes can be reused through Aquatron. It is a one-stop patented water recovery technology that utilizes precise frequencies of dissociation to remove impurities from water in their elemental form to provide drinking standard water. Apart from coffee effluent, Aquatron is a one-stop solution across WTP, STP, ETP and Desalination needs. Aquatron allows for compliance with environmental norms, mitigating the risk of penalties and closures for the industry. It significantly lowers water footprints, uses lower land and energy resources and enables a circular economy of water, allowing the reuse of water in the coffee production process.

Speaking on the occasion of Livprotec’s participation at the WCC 2023, the inventor Dr. Rajah Vijay Kumar explained "Our SERIGAS technology employs a distinctive proprietary technology known as the Microbe Incubated Bio-Reaction (MIBR) Reactor, designed based on principles of biomimicry that emulate the natural gas production process beneath the Earth's surface. While our planet takes approximately 200 million years to convert lignin into methane, our innovative process accomplishes the same outcome in just 28 days. We provide a range of pioneering features, including a CO2 rebreather, specialized bacterial cultures, bio-rings, Bio-SCADA, and NPK fixation reactors, all designed to ensure consistent quality and maximize yield while minimizing operational costs and complexity."

Dr. Rajesh Bhat - President, Energy and Water, further affirmed "Aquatron represents a patented water recovery technology capable of achieving Zero Liquid Discharge (ZLD) and Zero Discharge of Hazardous Chemicals (ZDHC). This remarkable achievement is realized without the reliance on chemical or biological processes, Reverse Osmosis (RO), or Evaporator technology. It successfully recovers water to drinking water standards, all while avoiding the generation of toxic sludge and maintaining a low Total Cost of Ownership (TCO). By leveraging the principles of physics, Aquatron addresses the long-standing challenge of fully reusing water, marking a significant breakthrough in this field."

Alok Sharma, CEO of Scalene Livprotec further added "The future of sustainability in the coffee, agriculture, and food processing industry depends on our capacity to recover resources and recycle water efficiently. Through our technology, we aspire to rekindle the enthusiasm for agriculture among today's youth and strive for absolute sustainability within the agriculture and food processing sectors. We eagerly anticipate collaborating with solution partners who share

our vision of expanding the reach of our technology on a global scale, thereby assisting the coffee, farming, and food processing industries.”

As businesses continue to fuel the world's passion for coffee, SERIGAS and Aquatron offer the potential to render coffee enterprises sustainable, environmentally friendly, and instrumental in fostering a circular economy. This approach not only benefits the environment but also ensures it is never compromised or harmed in any way.

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