OZONE INDIA TECHNOLOGY

(HEALTHY INDIA OZONE INDIA)

OZONE INDIA TECHNOLOGY team develop & designed the our instrument for aquaculture (RAS) and environment friendly .many instrument installed the RAS plant application.

Aquaculture (RAS) Recirculation aquaculture system

Ozone is used in aquaculture applications to improve water quality, reduce pathogens, and increase efficiency of the water treatment systems.

Ozone is used in RAS as a disinfectant, to remove organic carbon, and also to remove turbidity, algae, color, odor and taste. Ozone can effectively inactivate a range of bacterial, viral, fungal and protozoan fish pathogens.

Ozone in recirculating aquaculture systems

Recirculating Aquaculture Systems (RAS) provide potential advantages over pond or cage-based forms of aquaculture. These include flexibility in site selection, reduced water usage, lower effluent volumes, better environmental control, and higher intensity of production

The Chemistry of Ozone

Ozone (O3) is formed when an oxygen molecule (O2) is forced to bond with a third atom of oxygen (O). The third atom is only loosely bound to the molecule, making ozone highly unstable. This property makes ozone an excellent oxidizing agent and ideal for use in water treatment. However, storage is difficult and dangerous. For these reasons ozone must be generated on-site and used immediately.

Removal of fine and colloidal solids

Removal of dissolved organic compounds

Removal of Nitrite

Ozone removes nitrite by:

direct oxidation to nitrate;

Reducing organic loading, which improves bio filtration efficiency and nitrification.

Disinfection

The high stocking densities, associated fish stress and increased nutrient loads found in RAS create an ideal environment for fish pathogens. An important step in reducing the risk of disease outbreaks in RAS is the use of standard quarantine procedures for any fish introduced.

Aquaculture/life support

*Aquatic exhibits at zoos and aquariums

*Highly suitable for this application

*Color removal – crystal blue water

*Water disinfection

*Organic decomposition

*Wide use for over 20 years

*Aquaculture applications (fish farming)

*Allows higher feed rates – higher growth rate

*Ice Machines

Fish farming

Ozone use can keep water cleaner and fish healthier. Healthier fish take on feed faster and grow faster. Use of ozone in these applications has shown great payback on investment.

Implementing ozone correctly is imperative as too much can damage the gills of the fish, however, too little if other systems are designed around ozone, can cause water quality issues? While the level of ozone and control is critical, the actual implementation is not too difficult in most applications. Most facilities already have some devices in place for overall water treatment and filtration, along with devices to increase oxygen levels in the water. Ozone can typically be added to air, or oxygen feeds that are already in place.

Ozone (O3) can be added to recirculating systems to support water treatment and improve water quality by: breaking relatively non-biodegradable refractory organic compounds into smaller and more biodegradable compounds; directly oxidizing nitrite to nitrate; and precipitating dissolved organic molecules and micro flocculating colloidal organic matter

Study-source, ozonation of recirculating systems can reduce fish disease simply by improving water quality, which reduces or eliminates environmental sources of stress (Brazil, 1996; Bullock et al., 1997). These studies, as well as experience with ozone application at numerous commercial recirculating systems, indicates that both water quality and fish health can be improved by adding approximately 13/24 g ozone for every 1.0 kg of feed fed to a recirculating system (Brazil, 1996; Bullock et al., 1997).

More discussion on the use of ozone to oxidize nitrite

The fact that ozone decreases nitrite levels in a recirculating system is a substantial benefit on those occasions when bacterial conversion of nitrite to nitrate in the bio filter is lost. However, because ozone reduces the nitrite concentration going to the bio filter, it also reduces the quantity of bacteria converting nitrite to nitrate and thus reduces the total acclimated nitrite removal capacity of the bio filter. Nitrite concentrations can rapidly accumulate within fully recirculating systems when ozone addition is interrupted, because ozone can be responsible for removing a fairly large fraction of the total nitrite produced

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OZONE INDIA TECHNOLOGY

www.ozoneindiatechnology.com ozoneindiatechnology@gmail.com

+91-9650017943, 959950080/90