OPEN ACCESS Freely available online

ISSN: 2252-5211
International Journal of Waste Resources

Short Communication

Concentration of Domestic Sewage Involved in Controlled Environments

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DESCRIPTION

The treatment of domestic sewage in controlled environments involved in anaerobic process and specifically the up flow of anaerobic sludge. The use of anaerobic reactors for domestic sewage treatment has been increased significantly since UASB configuration has started to be efficiently applied for this purpose. Nowadays, hundreds of UASB reactors are similar to anaerobic units that are used in domestic sewage treatment systems, particularly in the developing countries [1].

The concentrated wastewater is preferred to form granules in a sequencing of batch reactor when it is used for low strength of wastewater. The nutrient removal was not optimized and the granulation has been mainly studied in artificial wastewater. It confirms that the domestic sewage can effectively increases the water resource for irrigation but there is a need for continuous monitoring of the concentrations of potentially toxic elements in soil, plants and ground water. By using aerobic granules the wastewater treatment can reduce the area which is required for the treatment of wastewater [2]. The decentralized sewage treatment is more and more considered to be a sustainable way for the wastewater treatment.

The contents of heavy metals in crops are sampled from the area where it is below the permissible critical levels. By investigating the possibility of forming the aerobic granules in domestic wastewater is a continuous batch reactor where it is a logical step in the scale-up process and involves in development of this technology. The sewage temperature is ranged from 18°C to 28°C during the experimental period [3]. The reactor which is operated continuously for 9 months and it is assessed to self-inoculation and raw domestic sewage purification.

The sludge viscosity rises immediately after the sludge discharge when it is stopped, so it is necessary to periodically discharge excess and the sludge is found to be kept low viscosity. It is succeeded in removing more than 90% of organic matter, floating matter, and *E. coli*. As for the removal of nitrogen denitrification was the rate-limiting step in this system. To improve denitrification, three points should be considered: i) concentrate the raw sewage inflow at the beginning of the anaerobic period, ii) shortening the aeration time, and iii) MLSS concentration keeping high [4].

The agronomical value of domestic sewage sludge may be hidden by the presence of several pollutants such as heavy metals, organic compounds and pathogens. The sludge produced in the precipitation stage can be stabilized in a conventional anaerobic digester. The integration of the different treatment steps provides a sustainable technology to treat domestic sewage under hot climate conditions. The release of domestic sewage leads to accumulation of xenoestrogens in holding waters, especially in closed or semi-enclosed waters such as lakes

In this way, the sustainability of sewage sludge agricultural disposal requires a value judgment based upon the knowledge and evaluation of level in the pollution of both sewage sludge and soil [5]. In the arid and semi-arid regions, where the fresh water resources are scarce, and used for the treatment of domestic wastewater (sewage) for irrigation has become common. However, the use of wastewater for irrigation can affect soil chemical and hydraulic properties.

CONCLUSION

However, the overall nitrogen removal during a fuel cycle was about 50%. The irrigation is treated with wastewater based upon the hydraulic properties of semi-arid and arid soils. The inclusion of an anoxic period right after the aeration phase enhanced to the removal of nitrogen efficiency, yet this phase required for the addition of an external carbon source to the reactor due to low concentration of biodegradable carbon, and at the same time the process became less efficient in BOD removal.

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Received: 16-Aug-2022, Manuscript No. IJWR-22-18542; **Editor assigned:** 19-Aug-2022, PreQC No. IJWR-22-18542 (PQ); **Reviewed:** 09-Sep-2022, QC No. IJWR-22-18542; **Revised:** 16-Sep-2022, Manuscript No. IJWR-22-18542 (R); **Published:** 23-Sep-2022, DOI: 10.35248/ 2252-5211.22.12.491.

Citation: Sabatini C (2022) Concentration of Domestic Sewage Involved in Controlled Environments. Int J Waste Resour. 12:491.

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