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Biological water purification methodologies can be applied in treatment of domestic drinking water as well as for treating waste water before releasing them to the environment. Many traditional water purification methodologies that have been in practice for decades have been improved and modified by recent research findings to cater for wider community in need of purified water. Further, Many research have been conducted to identify effective plant and microbial aggregations that can serve as universal communities in constructed wetlands in terms of remediation of heavy metal, suspended solids and nutrient pollution.

Biological treatment methodologies are increasingly researched and applied as they can destroy and remove multiple contaminants simultaneously and have minimum sludge production and bacterial regrowth. Biological treatment can be used to remove natural organic matter, colour, chloroform, perchlorate, nitrate, nitrite, bromate, iron, manganese, chromate, arsenate, and a variety of other contaminants of polluted water. It eliminates the need for chemical oxidation prior to filtration or settling, as well as the need for chemical reduction methods, and produces innocuous end-products, thus reducing the risk of a contaminating the natural aquatic systems.

Therefore, to achieve the sustainable development goal of ensuring availability and sustainable management of water and sanitation for all by 2030, the importance of the role of living organisms in water purification needs to be given a top priority as life and water is the driving force towards a sustainable future.

Keywords: Water scarcity, Aquatic pollution, Biological treatment, Drinking water