

Advanced water and wastewater treatment methods

The impurities present in the water and wastewater are removed to the higher degree to meet the end purpose which necessitate the advanced treatments and this solely depends on the requirement of the user, where as the nature takes care of the same with simple measures. The ecological connectivity as human body, soil structure, the atmospheric conditions are favorable for the treatment of water and waste water to the required degree and the same depends on the understanding of their purity with respect to the natural systems of treatment. All the tools are available in the nature and if approached for the individual requirements progressively, we will not be ending up in a mess and complexity. Complexity comes out for the activities as masses, where simplicity is the trait of an individual which makes life easier.

The soil structure is improved much than the earlier days for the humus and porosity and is favorable to take up almost all the impurities as nutrients and it is the human intervention which makes it complex. The nature can handle all those it gives to human beings and refuses only those induced within its ecosystem by human activities in a form that cannot have connectivity with natural elements and accommodate itself in the natural processes of transformation. There will not be clogging if there is sufficient air to oxidize and the soil is porous, to give a room for organics to break down into simple elements to be easily taken by plants. There are special varieties of plants which can help this to a great extent as grass, bamboo and aloe Vera types that will take up organics much easily.

Human system can take the needed water minerals and dispose the unwanted, undigested with the excreta safely and the problem arises when the waste water is disposed in to the water directly which will take care of organics but not the complex inorganic. All those toxic substances are in nature only and they are encapsulated well to the safe level which serve their purpose of creation and which is being distorted only for the greed of man to know the details with



finer research to break down the encapsulation which leads to complexity. The use of toxic chemicals, recalcitrant or man induced xenobiotic compounds that lead to bioaccumulation when they reach the natural ecosystem becomes dangerous, only when the concentration builds up in living organisms, on their disposal in water directly. The toxic chemicals and recalcitrant are fat soluble and when disposed in water are taken up by lower order microorganisms and remain in their fat laden tissues which when consumed by higher order animals increases the concentration and lead to toxicity and affect the normal routine of living beings.

This can be solved by two ways as to avoid use of man induced chemicals and to live with nature, as simple way of life. Another could be to reduce the use of recalcitrant and since they are bonded easily by sediments, can be treated in soil with soil porosity as filter units and encapsulation elements that they remain in soil as such, increasing the size of soil particles which also will be dangerous in due course of time reducing the micro pores and permeability, forming rocks. When used in huge masses, the industries should take care of the treatment, on their own, and the waste water should not be disposed off in to natural water courses without taking care of the xenobiotic compounds. The alum , calcium carbonate and hydroxide added to waste treatment binds the recalcitrant and the same remain bulky and can be used directly to pavers block and building units that they impart strength and held within the matrices without leaching that they form a right method of final use without damaging the living beings.

Whatever may be the advanced treatment we give for water before the distribution, the same may not remain in pure form and needs a treatment at home for which most people prefer bottled mineral waters which is reducing the immunity, which is mutagenic, for the exposed impurities within safe levels. Only with the exposure of certain levels of impurities, the enzymatic reactions of body will get adjusted. This forms evolution and makes nature to involve in the treatment which is actually the biotechnology and not the phytoremediation. Activated carbon, filtration, boiling, lime soda process with Adsorption, biosorption, metal detoxification are all nature based and cannot be controlled as



a mass and will be cumulating the effect and further complicating the issue which is not felt as we focus on the medium of clarification and not the after math situation. Physico chemical treatments are all evolved from biology, the core of the life, the reinforcing element of life and need to be understood by living with nature. All fast and accumulated remedy for masses will not work longer though they prove fruition in the immediate effect which is what we refer as rapid activities. It is not the time management but the job management to come out of the illusions to live the real life. The illusions of life as time, space, power, knowledge and desire are to be uplifted with individual to aim for his own noble purpose of life as one cannot give out his originality in the fear of image and virtue, which is ruling every part of life as science and technology.

Original is real, effective, simple and easy which will have due potential output and the productive time of an individual is much different from the availability that one can never be restricted and instructed to follow a routine in life. It is their life, which can be regulated in need, but certainly not by voluntary measures as the same leads to copy, restricted and worry for images and virtue which is not living, but mere survival. When viewed to the basics of life what we follow with complicate expensive water and waste water treatment are basics of nature and replica with minimized efficiency in spite of the complexity and economy involved. Carbon is the true form of organics and if found in abundance will balance entire ecosystem to the core. Carbon need to be in higher order in proportions of organics in the environment to keep the ecological balance which has taken the slowest path for the complication and fragmentation to their destination. If remain connected and understood with nature we will be finding the recalcitrant are in existence right from the beginning which evolved into shells, corals and pearls which are in scarce now for the cycle became complex with the ocean ecosystem being disturbed. If sufficient time is given, the ocean wealth will be progressive for the disposal of waste matter. The cycle of formation of earth is evolutionary and the formations of igneous, sedimentary and metamorphic rocks continue to evolve from one stage to another for the connectivity of ecosystem which needs to be promoted with human activities. The risk we take and the complexity we make are for we fragment ourselves from

nature. Nothing can go beyond nature and we are not gifted with the illusions of life as narrated elsewhere here as time, space, power, knowledge and desire. But gifted with potentials, conscience, responsibility, wisdom and transcendence, where each individual is his own boss. We can assist and get the assistance in absolute need which will come on its own if tuned to intuition. Life is simple and can be relaxed if we believe our conscience.

Toxic chemicals are complex chemicals, manmade, that finds their way into human system and to the nature as waste which will not be degraded but remain accumulated. In the human system which is evolving for the life habits, which forms the basics of the enzymatic reactions, formation of components, we come across mutagenic reactions, the enzymes get altered and we cannot say they remain always indigestible. Nothing is impossible for nature. The detoxification activities preferred for human beings is use of lemon, pepper, carrot, beet root, and cabbage which shows they have the enzymes to detoxify the chemicals and if they are grown in huge masses in soil they can also serve as a tool of detoxifying the soil too. Lime added to the soil as pretreatment, bond the toxic chemicals and leaches them in small quantities by the plants that we will not find green patches of accumulated chemicals in the plant parts. There are bacteria, right from the beginning which are capable of assimilating metals even and the problems lies in making everything verified which is not possible with the wonders of nature, and it all lies in the holistic view of the balance. When we see the in depth details of everything there is a danger of significance being given to unwarranted activities which may mislead and which may become dangerous for the immediate exposure as bacteria's are cultured which must be understood holistically in their own native environment. Biotechnology and microbiology are the examples of detailed fine study which is similar to radiotherapy which took the life of wonderful scientist Mary curie who had the extra ordinary potential of intuition. Intrinsic fragmented study offers detached approach whereas physical, chemical and biology are interrelated and cannot be viewed separately. They are to be understood as the results holistically that cannot be measured but felt.



Nothing is new, it is not doing different things, it is in doing things differently and that is innovation. No advanced treatment is too much to complications and technical it is to the end users considering their inclusion. Giving due importance to all facets of life, all facets in every activity makes a holistic attitude towards perfect living. We cannot rule over nature, we can understand nature for which education should help.

Threads

1. What are the advanced water treatment methods?
2. What are the advanced waste water treatment methods?
3. How do you remove pathogens from water?
4. Simple boiling kills all the pathogenic bacteria, and dissolves fat too, which helps reducing obesity. Why do we need chlorination and complex halogens to kill bacteria when simple method is in hand?
5. What are the sources of toxic chemicals?.How do they get into the natural stream?.
6. Toxic chemicals are fat soluble and resides in fat laden tissues. How can you detoxify them with simple measures?
7. What do you mean by bioaccumulation?.How Meta thinking with the above fact leads to simple solution in detoxification.
8. What do you mean by recalcitrant? How can you make them available progressively to human growth?
9. What do you mean by adsorption?.How will you justify adsorption as a polishing treatment for water to take care of treatment of all impurities?
10. What do you mean by biosorption?.
11. What is bioremediation?.How do you justify this as the accumulation lead to further complications?



12. What type of treatment you would prefer in line with nature to treat water and waste water in an individual residence or community?
13. Explain the treatment train, you suggested in line with the discussion given above.
14. How do you apply biotechnology for detoxification?
15. What do you do to arrest the mobility of toxins?



When we find a trap for rats, nature finds a rat that escapes the trap, which makes life dynamic and balanced. All creations have their due dignity to live.