Phytodepuration

Phytodepuration is a purification technique characterised by biological type treatments, in which plants growing in water-saturated soil develop a key role for direct action of the bacteria that colonize the root system and rootstock. These treatments are seen both as alternatives as well as support to traditional systems based on biological processes and chemical and physical reactions.

The term "Wetlands" indicates "Phytodepuration" systems of wastewaters designed to artificially create the same ecological conditions that are naturally established in watery areas. In Italy "Phytodepuration" systems engineered, designed and built to reproduce natural self-depurative processes in a controllable environment. In comparison to natural Wetlands, Phytodepuration systems allow for the choice of the site, the flexibility in the dimension, control of hydraulic flows and retention times. Phytodepurifyng functions can be preferred and additionally exploited with opportune strategies, like the choice of plant species and substratum and control of the flow of water.

With Phytodepuration systems, pollutants are removed through a combination of chemical, physical and biological processes. The most effective processes are sedimentation, precipitation, adsorption, assimilation from plants and microbial activity. Phytodepuration technology adds the medium's adsorbing ability to the traditional biological oxidation depurative treatment (filtering action by plant roots that also provide a large surface suitable for developing microbial masses involved in the treatment) and removal of nutriments due to their growth.