

Vestal Laboratories



VESTA AGRI

Wastewater Treatment in Biological Purification Plants

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VESTA AGRI is a lyophilized enzymatic bacterial complex of plant origin, containing a mixture of facultative aerobic and anaerobic saprophytic bacteria, non-pathogenic and harmless to humans, animals, and the environment, natural, non-GMO, associated with thermotolerant catalytic enzymes and related eutrophic compounds, allowing a quick and easy initiation of the microbiological digestion process of organic matter in biological cycle purifiers.

The mechanism of action is completely natural, economical, and devoid of external energy inputs: the bacteria contained in the mixture produce enzymes to degrade proteins (protease); carbohydrates (amylase); fats (lipase); cellulose derivatives (cellulase).

Its particular formulation based on saprophytic microorganisms allows the simultaneous development of both aerobic and anaerobic flora depending on the environmental conditions that arise. The regular use of VESTA AGRI therefore triggers the denitrification process completing both the following phases:

NITRIFICATION PHASE: aerobic process of ammonia metabolism (the nitrogen of the NH_3 molecule is used for the synthesis of new proteins that allow biomass growth) and phosphorus.

DENITRIFICATION PHASE: anaerobic denitrification process: it is a natural bacterial-enzymatic process where, under anaerobic conditions and presence of organic carbon, microorganisms draw the essential oxygen from NO_3 releasing gaseous nitrogen in the form of N_2 .

Results:

- Increase in purification speed quantifiable in the range of 25-30%;
- Increase in weight and sedimentability of active sludge (hydraulic peaks are better absorbed);
- Reduction (at the same load) of excess sludge by 10-40%;
- Possibility to reduce dissolved oxygen to the value of 1-2 ppm with consequent energy savings;
- Strong reduction of unpleasant odors from the purifier tanks.

Warnings:

During the first weeks of treatment, a significant increase in pollutant load in the purifier may occur due to the mobilization by VESTA AGRI of organic sediments in dead spots of the tanks. This phenomenon is transitory and will exhaust itself as soon as all sediments are degraded.

The indicative reference dosage is 25-30 grams of VESTA AGRI per quintal of dry matter to be degraded. However, this quantity can be strongly modified depending on the characteristics of the purifier, the qualities of the effluents to be treated, environmental conditions, and the results desired. Taking into account these parameters, Vestal's technical personnel will develop an inoculation plan to maximize the effects of the product, proposing a shock dosage followed by a maintenance phase.

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