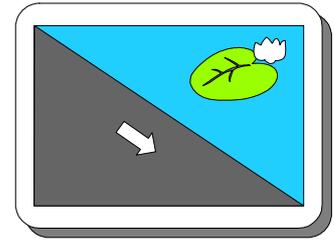


## ASA T

### new: concentrated culture



**ASA T** is a mixture of various microorganisms which normally live in a natural environment of fresh water and sea water.

**ASA T** has been used successfully in ponds and commercial aquacultures, in particular for fish and shrimp farming.

#### ASA T

- reduces organic sludge deposits
- removes feed-stuff remain
- increases the visibility depth and keeps the water clear
- degrades surplus ammonium, ammonia, nitrite and nitrate
- repels filamentary and free-floating algae
- accelerates the adjustment of the ecological equilibrium after resetting up a pond, a change of water or medical treatment
- is safe for aquatic animals and plants

#### ASA T should be used

- in eutrophicated ponds and lakes
- with algal blooms
- to remove turbidity in ornamental and garden ponds
- in fish and shrimp farming

#### Dosing and Activation:

10 - 30 liters **activated ASA T concentrate** per 1000 m<sup>3</sup> (1.000.000 liters) water once a week

For the greatest amount of activity of the microorganisms it is necessary, before any addition is made, to activate:

- 0.5 liter **ASA T concentrate**
  - + 50 gram ASA Activator-Powder
  - + 100 liter water
- mix, stir and aerate for 48 - 72 hours

#### Notes:

- shake well before use
- protect from chill and high temperatures
- at temperature below 20°C the **concentrate** of **ASA T** has a shelf-life of at least 6 month

## The way ASA T works

In the open nature there are fish, plants, small living organisms and microorganisms which live together in one body of water. Dead plants and animals are completely mineralized by the microorganisms. The end products of the biodegradation process, e. g. nitrates are taken up again by the plants as nutrients. There is an ecological balance. The water remains clean due to its biological self-purifying ability.

If, however, an excessive amount of inorganic substances (fertilizer) and organic waste (plant remains, animal excretion, left over feed-stuffs) find their way into the system then the self-purifying ability is not able to cope and the ecological balance is upset.

This leads to an increase in concentration of ammonia and nitrite, which are toxic to fish. The increased formation of ammonium and nitrate stimulate the growth of filamentary and free-floating algae, which render the water turbid. The dying algae mean that the water is further burdened with organic waste.

The organic material (starch, protein, fat, cellulose) are not fully degraded by the microbes and form an organic sludge which deposits on the bottom of the water body. The rate of the degradation is dependent on the concentration of the microorganisms which produce hydrolytic enzymes. Hydrolytic enzymes degrade the large water-insoluble starch, protein, fat and cellulose molecules into small water-soluble parts. These can then be utilized by the microorganisms as nutrients and under favorable aerobic conditions can be degraded further to form carbon dioxide and water.

The **ecological balance can be restored** by:

- the removal of ammonium, ammonia and nitrite
- the removal of nitrate
- the degradation of the organic substances in the water and on the floor of the water body

The microorganisms in **ASA T** solve these problems in a **natural way**:

- nitrifying microorganisms convert ammonium, toxic ammonia and nitrite to nitrate
- denitrifying microorganisms change nitrate to gaseous nitrogen thus removing it from the body of water
- "sludge degrading" microorganisms form the hydrolytic enzymes necessary for the degradation and reduce the organic waste

