



WATER QUALITY IN AQUACULTURE

RESIDUE AND TOTAL SUSPENDED SOLIDS

The term “**residue**” applies to the substances remaining after evaporation of a water sample and its subsequent drying in an oven at a given temperature.

It is approximately equivalent to the total content of dissolved and suspended matter in the water.

RESIDUE AND TOTAL SUSPENDED SOLIDS

The term “**solids**” is widely used for the majority of compounds which are present in natural waters and remain in a solid state after evaporation.

RESIDUE AND TOTAL SUSPENDED SOLIDS

Total suspended solids (TSS) and total dissolved solids (TDS) correspond to non-filterable and filterable residue, respectively.

“Fixed solids” and “volatile solids” correspond to the remainder after oven-drying.

SUSPENDED MATTER, TURBIDITY

The type and concentration of suspended matter controls the turbidity and transparency of the water.

Suspended matter consists of silt, clay, fine particles of organic and inorganic matter, soluble organic compounds, plankton and other microscopic organisms.

Such particles is the fraction that will not pass through a 0.45 μm pore diameter filter.

TURBIDITY

Turbidity results from the absorption of incident light by the particles, and the **transparency** is the limit of visibility in the water.

Both can vary seasonally according to biological activity in the water column and surface run-off carrying soil particles.

Turbidity is sometimes used as a continuous, indirect measurement for TSS (total suspended solids).

TURBIDITY

Turbidity should be measured in the field but, if necessary, samples can be stored in the dark for not more than 24 hours.

The most reliable method of determination uses nephelometry (light scattering by suspended particles) by means of a turbidity meter which gives values in **Nephelometric Turbidity Units** (NTU).

TRANSPARENCY

Transparency can be measured easily in the field and is, therefore, included in many regular sampling programmes, particularly in lakes and reservoirs, to indicate the level of biological activity.

It is determined by lowering a circular disc, called a Secchi Disc, on a calibrated cable into the water until it just disappears.

TRANSPARENCY

The depth at which it disappears, and just reappears, is recorded as the depth of transparency.

A Secchi disc is usually 20-30 cm in diameter.

