

Substrate Disappearance

(A) For Heterotrophic Bacteria

- For these bacteria the substrate is carbon based
- Such substrates can be measured depending on the chemistry of substrate molecules

Heterotrophic substrates are measured by using:

- UV-spectrophotometer
- Fluorimeter
- HPLC (High performance liquid chromatography)
- Gas Chromatography
- Mass Spectrophotometer

(B) Chemoautotrophic Substrates

For example:

- Oxidation of ammonia (Nitrification)
- Sulfur oxidation

For nitrification ^{15}N -labeled product are measured by mass spectrophotometer

For sulfur measurement, atomic absorption spectrophotometer is used

Terminal Electron Acceptor

A majority of TEA are available for measuring microbial activity, e.g. O_2 is one of them

Measurement of O_2 in a pure culture is relatively rapid and easy method

O_2 level in water sample can be measured using O_2 probe

It is basically an electrode covered by gas-permeable membrane combined with a meter that converts electrical signal into an analytical measurement

Cell Mass

Increase in cell mass in pure culture is quantified by culturable plate count or direct microscopic counts