



Zooplankton - Its Influence on Water Quality

What are Zooplankton?

Zooplankton are microscopic animals that live in both fresh and marine waters. They drift in the water, floating freely or remain passively suspended in the water. The zooplankton feed on the planktonic algae and there is a dynamic relationship between the zooplankton and the phytoplankton populations in a given body of water.

The zooplankton community in fresh water is principally comprised of free-living protozoans, rotifers, cladoceraus and copepods. The species diversity & numbers help in ascertaining water quality.

ALS provides NATA accredited analysis of *Zooplankton* in waters (ground, surface & potable), wastewaters, sewage & some industrial effluents.

Influence on Water Quality

Due to the short life cycle, zooplankton respond quickly to environmental changes and could therefore be an additional tool to monitor and track the changes in the quality of the water environment.

When zooplankton numbers rise to high levels, there is the potential to impact and influence water quality through taste and odour. The rise and fall of zooplankton populations leads to decomposition of their dead bodies which is manifested in unpleasant odours and accumulation of organic debris lowering water quality, increasing turbidity and colour, depleting dissolved oxygen and raising organic carbon levels.

Further, increased zooplankton numbers are known to pose a nuisance by blocking filters and interfering with water treatment and disinfection procedures, thereby reducing the efficiency of plants.

METHOD AND LOR INFORMATION

ALS METHOD CODE:

MB013

LIMIT OF REPORTING (LOR):

1 Zooplankton per litre

METHOD REFERENCE:

APHA Standard Method 10200G, 22nd Edition.

Guidelines and Water Industry Applications

The Australian Guidelines for Fresh and Marine Water Quality refers to the use of Zooplankton as biological indicators and so monitoring of Zooplankton can be used by the water industry to:

- Determine the ecological status of aquatic bodies;
- Monitor changes in biodiversity;
- Use zooplankton species as bio-indicators for water pollution.

Analysis of Zooplankton

Samples are processed according to APHA Standard Method 10200G Zooplankton Counting Techniques. A subsample is aliquoted using a wide-bore pipette into a Bogarov Counting and using a stereoscopic microscope all zooplankters visible in the tray are counted. Any difficult or unclear zooplankters are transferred for viewing and identification under a compound microscope.

ALS has trained and skilled biologists who are able to identify and enumerate zooplankton to assist in the management of water quality issues caused by zooplankton in water bodies.

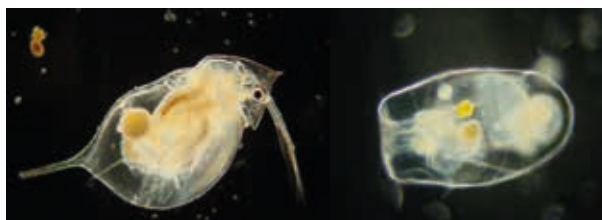


Figure 1: Daphnia sp.

Figure 2: Asplanchna sp

Sampling Requirements

Holding Time:	96 hours
Turnaround time:	5 days (Urgent <24 hrs)
Sample Storage:	≤30°C
Sample Containers:	Clean plastic container
Preservative	70% Ethanol
Sample Volume:	≥10L

For further information please contact your local ALS client services team.

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