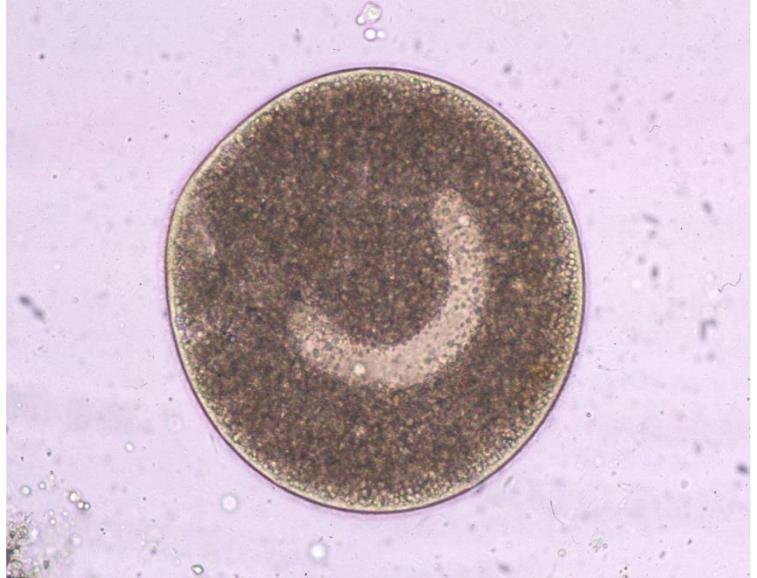


Whitespot - *Ichthyophthirius multifiliis*

What is whitespot?

Whitespot is one of the most well-known fish diseases. It is caused by the parasite, *Ichthyophthirius multifiliis*. This single-celled organism is a common parasite that infects nearly all species of freshwater fish. Mature parasites are round or oval in shape and measure up to 1.5mm across. They feed on the blood and skin of the fish. The surface of the parasite's body is covered in small hair-like structures known as cilia. When viewed under the microscope, a characteristic horseshoe-shaped nucleus may be seen.



Whitespot viewed under a high power microscope

What does whitespot do?

Whitespot is very damaging to the gills and skin. In heavily infected fish it can cause a rapid loss of condition, considerable distress and death. Infected fish have small white spots on the skin and gills and produce excess mucus, due to irritation. Whitespot causes most damage when entering and leaving the tissues of the fish. This can lead to the loss of skin and ulcers. These wounds can harm the ability of a fish to control the movement of water into its body. Damage caused to the gill tissue of an infected fish can also reduce respiratory efficiency. This means it is more difficult for the fish to obtain oxygen from the water, and becomes less tolerant to low levels of dissolved oxygen.

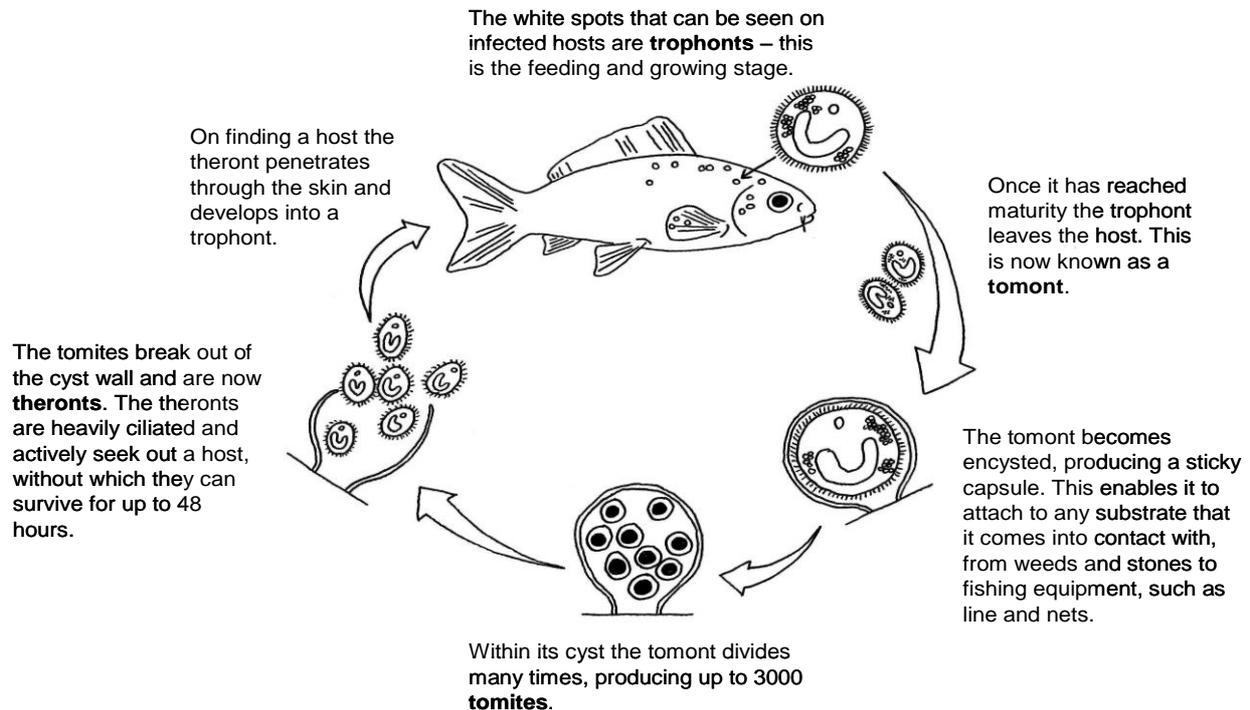


Roach with a heavy whitespot infection

How does whitespot reproduce within a fishery?

The lifecycle of *Ichthyophthirius multifiliis* involves several stages. All stages of the lifecycle are temperature dependant – the warmer the water the faster the parasite develops. Outbreaks of whitespot commonly occur during rising water temperatures, particularly in spring through the 10-14°C range.

The life cycle of whitespot:



Minimising the threat of whitespot- what can I do?

Once an outbreak of this parasite occurs there is little that can be done to stop the damage it causes. Chemical treatments are impractical in a fishery and ineffective for whitespot as they do not affect the encysted stage of the parasite. The best way of avoiding disease problems is through good fisheries management. Measures to minimise the threat of whitespot are as follows:

Reducing stress within the fish population

Stress is an important factor that can allow parasites to successfully infect fish. Stressors include high stock densities, poor habitat and poor water quality.

Taking care when introducing new fish into a fishery

Care should always be taken to limit stress to fish during stocking. Particular care is needed if stocking during the spring. This period can be stressful to fish, and it also favours rapid parasite reproduction.

Careful management of stock levels

High stock densities are a common cause of whitespot problems in fisheries. This makes it easier for parasites to find a fish to infect and can help them to spread rapidly.

Regularly monitoring water quality

Regularly monitoring water quality, including dissolved oxygen content and ammonia levels, helps to detect the early signs of problems.

This factsheet has been produced by:

National Fisheries Laboratory, Monitoring: Laboratories, Environment Agency, Bromholme Lane, Brampton, Huntingdon, PE28 4NE

Tel: 02084 745244; Email: fish.health@environment-agency.gov.uk

customer service line 03708 506 506

floodline 03459 88 11 88

incident hotline 0800 80 70 60

Page 2 of 2