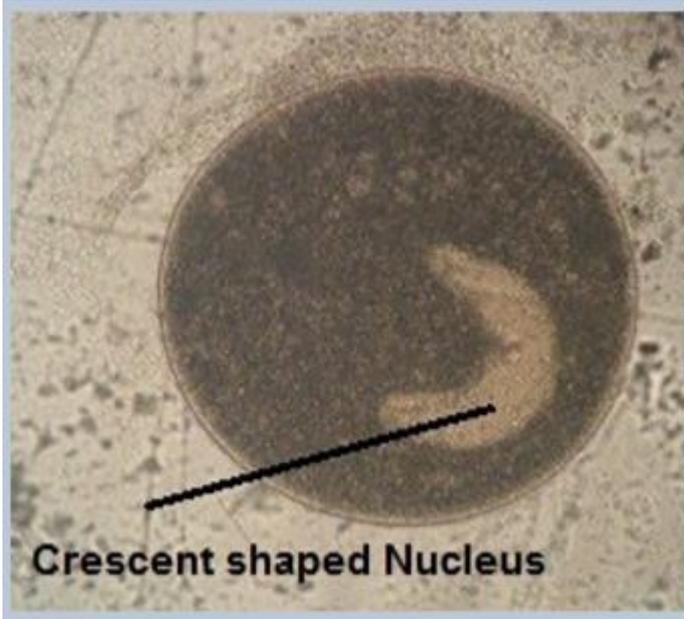


WHITE SPOT

Ichthyophthiriasis Multifiliis / Ich; but to most of us “White Spot”. This is a protozoan parasite and is found in both fresh and salt water environments.



This parasite would be at the top of the kill list due to how fast it can overcome and take its victims lives. It is not a parasite to be taken lightly. Quick identification and treatment is paramount.

Identification.

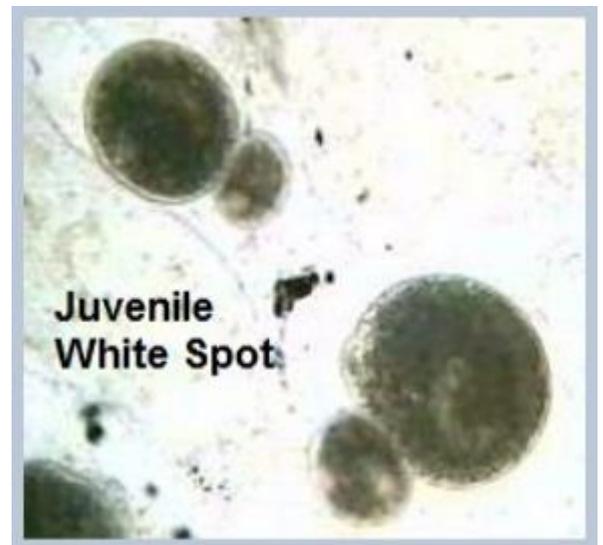
Can be seen on the affected fish, it has the appearance of salt sprinkled on the skin of the koi. The white spots can measure up to 0.5-1mm. Skin mucous scrapes should be taken for microscopic examination. They are often seen with a horse shoe shaped

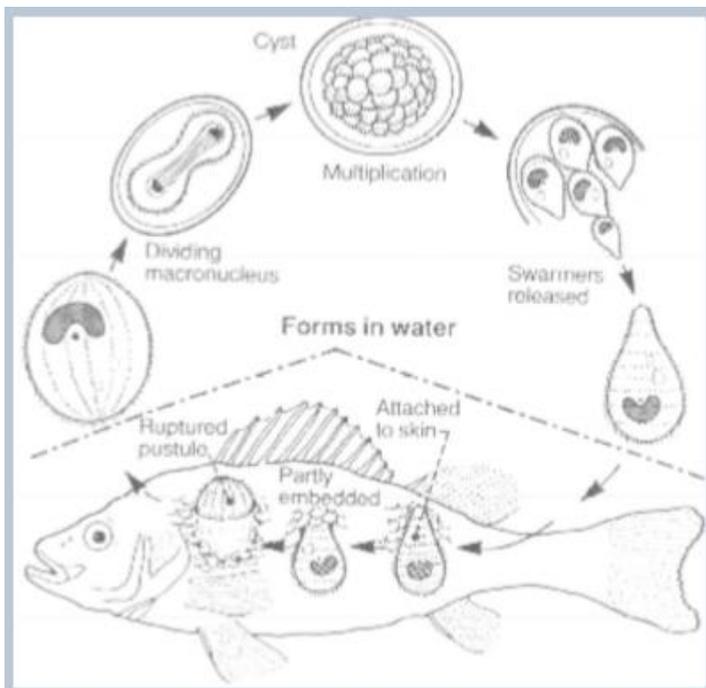
crescent, of a round or oval appearance, however this is not always the case. The nucleus is usually seen well on more mature Ich. When in a more juvenile state it can often be seen without the obvious nucleus which may cause the hobbyist to miss it. A minimum x50 magnification will be needed. See videos at the bottom of the page for clear images on what to look for.

Lifecycle.

This is important to know in order to allow us to treat correctly and at the right intervals. White Spot has four stages in its lifecycle. The Trophozite/Trophont is embedded in the skin.

When here no treatment will touch it. As it matures this is when the white spots start to appear as the Trophont moves through the skin to the surface. It should be noted that this stage can happen without seeing the white spots. When fully mature it will burst from the skin then drops to the pond floor. It can be destroyed at this stage, however when it makes contact with the bottom/plants it then protects itself with a cocoon which makes chemicals ineffective. It then begins to multiply in the capsule via multiple fission producing thousands of larvae called Tomites, Theronts or Vagrants. These ciliates are able to swim. When ready, they hatch from the capsule to find a host, this is the infectious stage and when chemical treatments are targeted. The Tomites must find a host within 48 hours or they will die. In temperatures of





24-26°C this entire lifecycle can take four to six days. When water is cooler it can take much longer.

Treatments.

Due to the complexities of the lifecycle there are only two opportunities we can take to treat for white spot. These stages are when the Trophozoite leaves the fish but before it forms its protective capsule and then at the Tomite stage as the larvae is swimming freely. The latter is probably the easier to do. Treatment will need to be spread over a number of days intervals.

Malachite Green 2% at 10ml per 176 UK Gallons. Mix in a watering can with pond water and apply around the edges of the pond. Formalin 30% at 10ml per 140/150 UK Gallons. Mix in a watering can and add straight after the MG. Add extra air and turn off UVs.

Examples of treatment regimes:

<u>Above 13°C.</u>	<u>18°C - 22.9°C.</u>	<u>Above 23°C: with high mortalities</u>
Day 1: treat.	Day 1: treat.	Day 1: treat.
Day 5: 15% water change	Day 5: 15% water change	Day 4: 15% water change
Day 7: treat.	Day 6: treat.	Day 5: treat.
Day 12: 15% water change	Day 10: 15% water change	Day 8: 15% water change
Day 13: treat	Day 11: treat	Day 9: treat

This topic came up when I last visited Chris Masters. He swears by Acriflavine powder and salt as a once only treatment. Malcolm Green also writes about it as a one hit treatment for protozoan parasites. It stays active in the water for a prolonged duration thus catching the white spot in both crucial stages of its transformation when free swimming.

5 grams Acriflavine powder per 220 UK gallons.
14 grams salt per UK gallon

References: <http://www.koiquest.co.uk/whitespot.htm>
<http://www.koicarp.org.uk/medications%20and%20their%20uses.htm>

Before adding any treatments it is essential that you make a positive identification of the parasite causing the problems.

Test your water parameters for Ammonia (NH3), Nitrite (NO2-), Ph, KH and Temperature.

Any treatments added are done so at your own risk. It is your responsibility to know your pond volume and to calculate dosages correctly. Always check the product labels. Turn off UVs if it states to do so. Add extra air.

The YKS will not accept responsibility for deaths of stock resulting from incorrect usage of chemicals/medication.

Videos.

<https://youtu.be/aP7yb0SIZIY>

<https://youtu.be/jJULWhjCuGo>

<https://youtu.be/0V5aKyz6J8A>

<https://youtu.be/94zqnIfnWck>