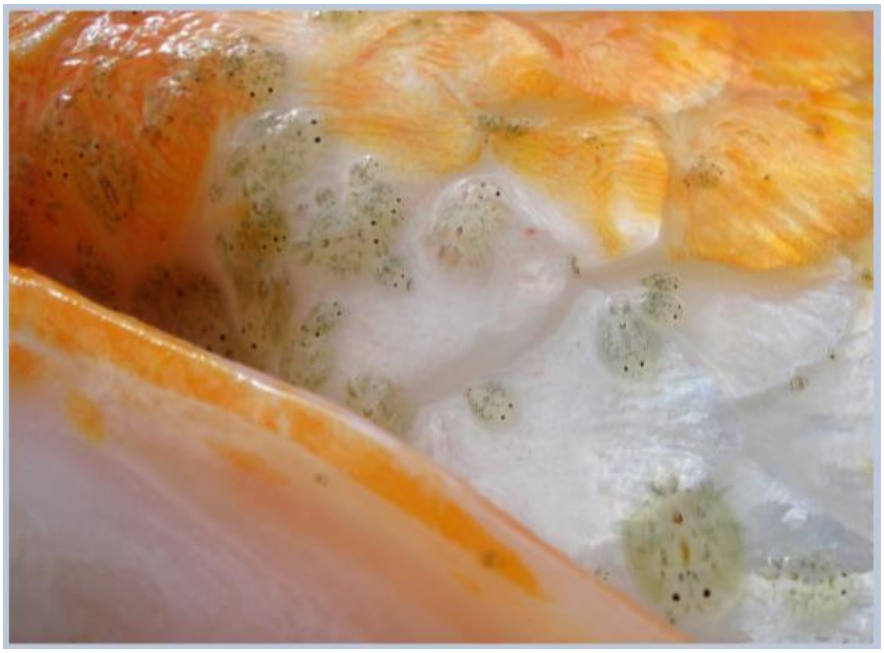
Fish Lice

Perhaps not one of the more common parasites but this little beasty can have a serious impact on koi health. They are sub-classified as "Branchiura" with over 150 species in this group. There are three categories of fish lice, their scientific names are "Argulus Foliaceous", "Argulus Coregoni" and "Argulus Japonicus". Lice are classified as crustaceans and are the largest of external parasites in the UK that can infest fish. In rare cases they can be introduced through infected water and fish or transported on the feet/feathers of wading birds or aquatic wildlife like frogs/ toads/newts.

Symptoms

Infected fish will flash in order to try dislodge the parasite. In severe cases affected fish may become lethargic and fall victim to secondary bacterial infections due to tissue damage. If gills are affected this can be fatal to the host fish.



Identification

In its adult stage it is visible with the naked eye and can reach up to 10mm, there is no need for a microscope. Juveniles are much more difficult to see but will be easily seen on a skin mucous scrape. At the end of this article there are links to videos of Argulus.

Lifecycle

Females lay eggs on any hard surface, they can lay up to 2000 eggs at a time. The sheer volume of eggs is the first problem as infestations can quickly develop. Eggs are laid in strings of two to six rows with each brood containing up to 400 eggs. They are protected by a jelly like substance which makes it difficult to kill the eggs. Hatching takes place approximately 25 days after being laid where the temperature is around 15°C. Eggs will not hatch in temperatures below 10°C but they are able to lay dormant until warmer weather arrives. Development of the larval "nauplii" and "metanauplius" stage is also dependant on the temperature and takes place while in the egg.

As Argulus are a crustacean species they must “shed” their hard skins in order to develop. After hatching they must find a host fish within six days otherwise they will die. Argulus are able to swim as soon as they have hatched. Once a host has been found they develop further and hatch into the next stage which begins feeding on the host fish. There can be up to ten development stages depending on which species of Argulus it is. It can take approximately 100 days to completes its life cycle.

When feeding, Argulus releases a chemical into the tissues that prevents blood clotting and makes it more free flowing. At the same time, it also releases a pheromone that is like a dinner bell, attracting other lice to the same host. This is often why one fish can have many parasites infesting it and why the damage can be so great.

Treatments

For a mixed pond containing sturgeon, orfe, rudd or other sensitive fish; individual salt baths may be effective. This will not affect the eggs though so repeat salt baths would be required. Alternatively, the removal of infested fish into a quarantine facility for a number of weeks may help with infestations. Removal of hosts from the affected pond would mean there is no food for the parasite to feed off so it would die.

- Where Argulus is visible the affected fish cam be sedated, each Argulus may then be manually removed using tweezers. Be sure to clean the areas where the parasite has been removed using roccal or iodine (tamodine/povidine) and then using a cotton bud, dab malachite green to the affected areas.

- Lice-Solve: Contains Emamectin 1.4%. Ensure UVs are turned off and carbon filters removed or bypassed. Add extra air. Not to be used with orfe, rudd, sturgeon, sterlets or small bream. Follow up treatment one month after to ensure developed eggs are killed. 4 grams treats 1000 litres (220 Gallons), 10 grams treats 2500 litres (550 Gallons), 100 grams treats 25000 litres (5500 Gallons).

- Masoten: 1 gram per 395 litres (87 Gallons) when 18.3°C and over, weekly treatments for 4 weeks. For temperatures 18.2°C and under use 6/8 grams per 4546 litres (1000 gallons). Dimilin: may be another option.

- Salt: Argulus can resist salt up to 3.5% so its use may not be adequate.

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/XHqk2oiXAt0
https://youtu.be/haWo9LcVE74
https://youtu.be/10DfVPYJ0jg
https://youtu.be/hG-vUczfSS8
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References

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