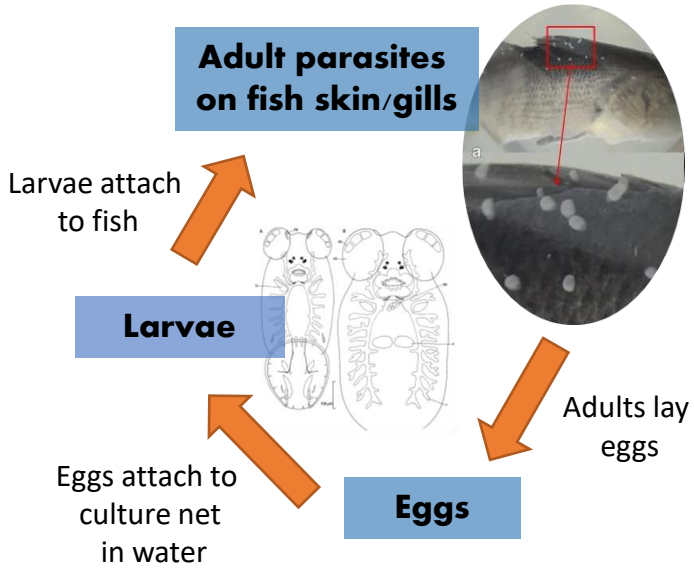
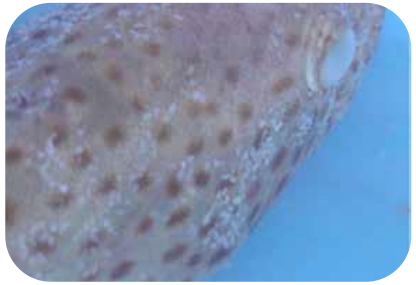
Monogenean Parasites in Fish

Monogeneans are a type of flatworm commonly found on the skin and gills of fish.
3 types most frequently found in aquacultured fish in Singapore are:

- Capsalids
- Gyrodactylids
- Dactylogyrids

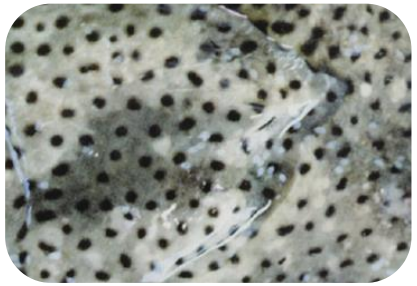
Life cycle of monogeneans



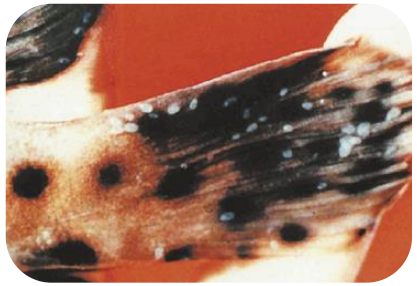


Benedenia sp. on grouper

Skin wounds on giant grouper due to monogeneans and secondary infections



Monogeneans on skin of humpback grouper

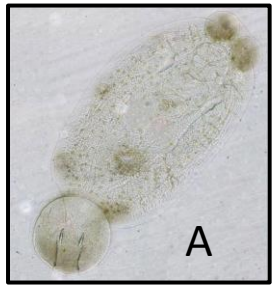


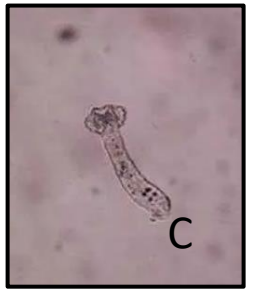
Monogeneans on caudal fin of humpback grouper

Please observe fish daily and carefully
Call your Account Manager* if your fish show these signs:

- Loss of shiny wet appearance
- Swimming near the surface, rubbing against bottom or sides of pen (flashing)
- Skin ulcers
- Loss of colour or skin shows erythema (redness)
- Eyes become cloudy
- Eating less than normal (lose appetite)

*Account Managers are SFA's point of contact for farms





Under the microscope:
A. **Capsalid *(Benedenia sp)*** at 200x magnification
B. **Gyrodactylid** at 200x magnification
C. **Dactylogyrid** at 100 x magnification

Treatment for Monogenean Parasites

Please sun all nets for at least 5 days prior to usage

Recommended treatment: Sodium Percarbonate and Citric Acid (equivalent to 150ppm H_2O_2)

***Amount of SPC required (g)= Volume of water (L) x 0.0045g/L·ppm x 150ppm**

SPC: citric acid ratio = 2.7 : 1

Amount of citric acid required (g) = *Amount of SPC powder (g)* ÷ 2.7

**calculation is based on common SPC products with 89% purity (e.g. 67.5g SPC powder and 25g of citric acid added to 100L of water)*

1. Place canvas under sea cage net.
2. Put SPC powder and critric acid powder in hair net and tie. Dip net in water and shake. Powder will be slowly released into the water.
3. Treat fish for 30 - 60mins before releasing the canvas.
4. Using a hand-held sieve, scoop some water out from the bottom of the canvas. Parasites can be visually inspected to ensure that they are not moving.
5. Once verified, waste water can be released.

Note: This is a new treatment formulated by the Marine Aquaculture Centre, and can be adjusted to be conducted in a container if preferred. A demonstration can be arranged for you if you are interested. It is environmentally friendly and not hazardous to your health.

After treatment, observe fish in new sea cage for 12 hrs before feeding.
Observe fish closely for 5 - 7 days after. If they display similar symptoms, please repeat treatment.

SPC and Citric Acid treatment formulated by Marine Aquaculture Centre, Aquaculture Department, SFA

Last updated June 2022