Garlic keeps fanged fish parasites away

September 4 2013

Sclerite ‘fangs’ clearly visible in the attachment organ facilitate the parasite’s capacity to remain attached to the fish host whilst feeding on skin tissue.

The use of garlic to fend off vampires has been well embedded in the minds of most thanks to a number of recent cinematic releases. However, there may be some fact beneath all that fiction for fish, where dietary supplementation with garlic has been shown to keep fanged parasites at bay.

Parasites can severely compromise the welfare of fish farmed though aquaculture. Specifically, a monogenean flat-worm parasite, Neobenedenia sp., has caused much grief for farmers rearing fish in tropical marine waters.

"Previous research has demonstrated that feeding fish garlic significantly improves their immune system, we wanted to take this research at step further to examine if there was any medicinal effect against parasites" explained Thane Militz of JCU's Marine Parasitology Laboratory.

In a serious of experiments, farm produced barramundi were fed garlic enriched diets of varying concentration for 30 days before being exposed to the flat worm parasite. Half the barramundi given the garlic feed where completely free of infection whilst 100% of barramundi fed an unenriched diet became infected and with substantially more parasites.

Mr. Militz also mentioned "an additional unexpected outcome of the study was that the fish seem to love garlic! A consistent trend among all studies was those fish offered the garlic enriched diets ate more." Current feed additives on the market for treating parasites have a poor track record of acceptability by the fish due to their bitter tastes. "With most commercial treatments the fish simply spit the medicated feed pellets out once they get a taste, we had quite the opposite result with our garlic enriched feed". "Garlic offers a huge potential as a general antiparasitic agent that can easily be administered on-site at an aquaculture operation."

Garlic used in experiments was sourced from within Queensland.

The project 'Efficacy of garlic extract for managing a marine parasite of significance to aquaculture " was led by Thane Militz along with his collaborators Professor Paul Southgate, Guy Carton and Kate Hutson from the School of Marine and Tropical Biology and the Centre for Sustainable Tropical Fisheries and Aquaculture. Publications from this project appear in the journals Aquaculture and Journal of Fish Diseases.

Provided by James Cook University