

## Not such a slick solution for feeding Greenshell™ spat

The raising of baby finfish in hatcheries for aquaculture often requires the delivery of high-quality oils that support their rapid development. These oils are very high in energy which is used to fuel the rapid growth of the developing larvae. The oils also contain omega-3 nutrients which are vitally important in marine food webs and are used by many marine organisms for the construction of tissues, especially some cell walls and nervous tissue.

Our research on Greenshell™ spat has found that spat also have a nutritional requirement for such oils, but at lower amounts compared to fish larvae. Given this, we decided to test one of the most widely used high quality oils for raising fin fish larvae by feeding it to mussel spat to see how they would respond.

The product *S.presso* is a highly refined, natural oil that forms tiny droplets when dispersed into seawater. It is formulated to meet the nutritional needs of most types of marine finfish's larvae; however, this nutritional profile is surprisingly similar to that required by Greenshell™ spat.

To feed *S.presso* to fin fish larvae it is normally dispersed into seawater and then fed to microscopic filter feeders, such as brine shrimp or rotifers. These then filter out the tiny oil droplets, filling their tummies with the oil. The microscopic filter feeders are then fed to the fish larvae which swallow them whole, consuming the nutritious oil in the process.

Greenshell™ spat are also efficient filter feeders so, theoretically, they should also be able to consume and make good use of the *S.presso* suspended oil droplets. So, we trialled it with mussel spat, at a range of different concentrations of *S.presso*.

Unfortunately, the spat cannot handle the oil droplets. The oil quickly becomes stuck to their tiny filter feeding structures on their gills and gradually clogs the gills preventing all feeding.

It was a bit of a sticky end for them! The search continues for the ideal spat feed.

- *Aven Zhuang and Andrew Jeffs - University of Auckland*



*A bottle of liquid S.presso oil product that is used in rearing larval fin fish, but not so good for mussel spat.*



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