

SEED QUALITY: ENGINEERING LARVAL DIETS TO INCREASE GROWTH AND REDUCE DISEASE TRANSMISSION

Adelaide C.E. Rhodes* and Michael B. Rust
University of Washington, School of Aquatic & Fishery Sciences
Box 355020, Seattle, Washington 98195-5020, USA
acer@u.washington.edu

Hatchery production of healthy, hardy fingerlings is crucial to the development of stock enhancement protocols. Not only does mitigation of the risk of disease start in the hatchery, fingerlings that are not physically robust will not survive as well when released to the wild. Diet, disease and economics are the three biggest challenges encountered by hatcheries that wish to optimize post-release fingerling survival and quality. We review developments in fingerling production related to innovative diets and associated disease management techniques. For example, the use of traditional live feeds, *Artemia* and rotifers, can have nutritional limitations, as well as introduce unwanted microbial organisms and pathogens into the larval rearing system. These live feeds can be improved nutritionally with focused enrichments that provide the essential fatty acids and vitamins which ensure good growth and normal development. Probiotics used with these live feeds can reduce the risk of introducing unwanted pathogens. The development of alternative live feeds such as copepods or cladocerans, which can be sterilized before introduction, can also offer an alternative for increasing nutritional value and reducing disease transmission. The early introduction of microparticulate diets needs to be further developed to reduce potential disease vectors, to increase growth and reduce economic costs to the hatcheries. This review will discuss how hatcheries can use the latest larval feeding techniques to reduce the cost of fingerling production, improve larval growth and development, and reduce the risk of disease transmission.