Effects of chloramphenicol, erythromycin, and furazolidone on growth of Isochrysis galbana and Chaetoceros gracilis

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Abstract
This study focused on determining the effects of antibiotics on microalgae used as food for scallop larvae. Six different dose levels of chloramphenicol, erythromycin, and furazolidone were added to cultures of Isochrysis galbana and Chaetoceros gracilis. An in vivo experiment was subsequently conducted to determine the effect of chloramphenicol and erythromycin on larval survival of the Pacific calico scallop Argopecten ventricosus in tanks and on the population of its associated bacteria. Results showed that growth of I. galbana was not significantly affected by chloramphenicol or erythromycin at the test doses of 0.5, 1.0, 3.0, 6.0, 9.0, and 12.0 mg/l. C. gracilis was significantly sensitive to erythromycin and chloramphenicol at doses higher than 0.5 and 3.0 mg/l, respectively. Furazolidone inhibited the growth of both I. galbana and C. gracilis at all test doses. Results showed that exposure of scallop larvae to a dose of 6 mg/l chloramphenicol or erythromycin did not significantly affect growth of I. galbana, significantly enhanced survival of the scallop larvae, and inhibited the growth of Vibrio spp. in tanks. This study demonstrated the adverse effect of chloramphenicol, erythromycin and furazolidone on I. galbana and C. gracilis microalgae but the positive effect on survival of the scallop larvae, decreasing associated bacterial population.