

Worrawut Walla 2012: Effects of Activate DA on Growth, Survival and Population of *Vibrio harveyi* in Rearing of Pacific White Shrimp (*Litopenaeus vannamei*). Master of Science (Fisheries Science), Major Field: Fisheries Science, Department of Fishery Biology. Thesis Advisor: Associate Professor Chalor Limsuwan, Ph.D. 104 pages.

A study of the effects of Activate DA on growth and survival of Pacific white shrimp (*Litopenaeus vannamei*) was conducted under laboratory conditions. Tests in seven treatments (five replicates/treatment). Postlarvae 12 (PL12) were stocked into 500-liter fiberglass tanks at the density of 50 PL/tank. Salinity was 25 ppt. Shrimp were fed four times daily with pelleted feed containing graded levels of 0% (control), 0.1%, 0.2%, 0.4%, 0.8%, 1.2% and 1.6% of Activate DA. After 60 days of dietary administration, shrimp fed with 1.2% of Activate DA had an average body weight of 6.87 ± 0.27 g significantly higher ($P < 0.05$) than the control group, 0.1%, 0.2%, 0.4%, 0.8% of Activate DA but not significantly higher ($P > 0.05$) than 1.6% of Activate DA. Survival rate of shrimp fed with 1.2% of Activate DA had $95.60 \pm 3.58\%$ significantly higher ($P < 0.05$) than other groups but not significantly higher ($P > 0.05$) than the group fed with 1.6%. Feed conversion ratio of shrimp fed with 1.2% of Activate DA (0.76%) lower than the other groups. Total bacteria and Total *Vibrio* spp. in intestine of shrimp fed 1.2% of Activate DA had $(5.48 \pm 1.74) \times 10^2$ CFU/g and $(2.90 \pm 0.85) \times 10^2$ CFU/g, respectively. A study of the Activate DA on survival of *L. vannamei* juvenile (3-4 g) exposed to population of the pathogenic bacteria *Vibrio harveyi* under laboratory conditions. Test was carried out in Seven treatments, 0% (control), 0.1% , 0.2% , 0.4% o, 0.8%, 1.2% and 1.6% of Activate DA with eight replicates per treatment. Each replicate consisted of 30 shrimp of Pacific white shrimp. After 7 days of experiment, *V. harveyi* were added to final concentration of 10^3 CFU/ml for 4 tanks and 10^4 CFU/ml for 4 tanks. After 10 day in treatment group challenged with *V. harveyi* 10^3 CFU/ml, shrimp fed with 1.2% of Activate DA had total bacteria $(24.50 \pm 1.22) \times 10^7$ CFU/ml and total *Vibrio* spp. In hemolymph $(1.38 \pm 0.13) \times 10^4$ CFU/ml was significantly lower ($P < 0.05$) than each group. After 20 days of challenged, shrimp fed with 1.2% of Activate DA had had total bacteria $(21.14 \pm 0.91) \times 10^7$ CFU/ml and total *Vibrio* spp. $(0.81 \pm 0.10) \times 10^4$ CFU/ml was significantly lower ($P < 0.05$) than each group. After 30 days of challenged, shrimp fed with 1.2% of Activate DA had total bacteria $(19.81 \pm 1.00) \times 10^7$ CFU/ml and total *Vibrio* spp. $(0.39 \pm 0.07) \times 10^4$ CFU/ml was significantly lower ($P < 0.05$) than each group. After 30 days of challenged with *V. harveyi* 10^4 CFU/ml, shrimp fed 1.2% of Activate DA had total bacteria $(32.79 \pm 0.85) \times 10^7$ CFU/ml and total *Vibrio* spp. In hemolymph $(0.39 \pm 0.07) \times 10^4$ CFU/ml was significantly lower ($P < 0.05$) than each group. in this study indicated that oral administration of Activate DA could increase the growth, survival and preventing *V. harveyi* in rearing Pacific white shrimp.

Student's signature

Thesis Advisor's signature