Arisa Srimarksuk 2012: Growth, Survival, Non-Specific Immune Characteristics and Resistance to *Vibrio harveyi* of Pacific White Shrimp (*Litopenaeus vannamei*) Fed with Yeast Cell Debris. Master of Science (Fisheries Science), Major Field: Fisheries Science, Department of Fishery Biology. Thesis Advisor: Associate Professor Chalor Limsuwan, Ph.D. 114 pages.

Effect of yeast cell debris on growth, survival and immune characteristics of Pacific white shrimp (*Litopenaeus vannamei*) was studied under different experimental set up in laboraratory. In experiment 1 the post larvae (PL12) were studied. Seven treatment diets were designed with yeast cell debris of products A, B and C respectively. Each the product contained 45, 38, 56% crude protein, respectively and each formulation was mixed with commercial feed at the concentrations of 1% and 5% yeast cell debris. Commercial shrimp feed without the supplementation of yeast cell debris was used as the control. After 60 days of dietary administration, shrimp fed with 5% yeast cell debris of product C had an average body weight 6.77 ± 0.31 g. which was significantly higher ($P < 0.05$) than shrimp fed with 1% and 5% yeast cell of products A1%, A5%, B1%, B5%, C1% and the control group. The shrimp fed with 5% yeast cell debris of product C also showed the highest percentage survival rate that is, 94.54±1.82% which was not different from shrimp fed with 1% yeast cell in product C but percent of survival rate of these two treatments were significantly higher ($P < 0.05$) than other treatments. After challenged with a virulent strain of *Vibrio harveyi* (LD_{50} in 48 h), the percentage survival rate of shrimp fed with 5% yeast cell in product C showed the highest percent survival rate of 72.17±1.00% followed by 70.83±0.58% of the group that was fed 5% yeast cell of product A. The percent survival rate of these two treatments were significant higher ($P < 0.05$) than other treatment groups. In experiment 2, White shrimp of size 8-10 grams were used and divided into seven treatments like experiment 1. After 50 days of feeding with three formulations of yeast cell, There was no difference among the average body weight of shrimp of the all treatment groups and the control group. However, the percent survival rate of shrimp from the group that was given with commercial feed mixed with 5% yeast cell in product C diet showed the highest survival rate (91.11 ± 1.92%). The survival rate of shrimps from all treatment groups were significantly higher ($P < 0.05$) than the control group. For immunological study, shrimp of all treatment groups also showed better immune response in respect to all immune parameters (total hemocyte, phagocytic activity, bactericidal activity, phenoloxidase activity and superoxide dismutase activity) compare to the control group. Shrimp in the group fed 5% yeast cell of product C exhibited the highest immune response which was significantly higher than the control group. The present study indicated that oral administration of 5% yeast cell debris of product C for at least 30 days could increase the growth, survival and enhance immune respone of *L. vannamei.*

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