Wilawan Boonwas 2012: Effect of Removing Organic Matters and Sludge by Central Drainage on Growth and Survival of Intensive *Litopenaeus vannamei* Culture. Master of Science (Fisheries Science), Major Field: Fisheries Science, Department of Fishery Biology. Thesis Advisor: Associate Professor Chalor Limsuwan, Ph.D. 57 pages.

Litopenaeus vannamei were reared in six polyethylene-lined ponds with an area of approximately 8,000 m^2 (5 rai). Three experimental ponds were installed with central drainage to remove organic matters and sludge during cultured period, while three ponds without central drainage were used as the control group. The salinity level during culture period was ranging from 23-25 ppt. Post larvae stages 15 were stocked at the density of 92 shrimp per square meter. The shrimp were fed with commercial pellet feed only. At harvest (77-90 day), there were significant differences in the average daily growth, average survival rate and the average yield between the experimental ponds and the control ponds. The average daily growth ,average survival rate and yield of shrimp in the experimental ponds was 0.16±0.006 g/day 92.0±1.0 %and 2,042±48.58 kg/rai, significantly higher than the 0.14±0.15 g/day 67.0±2.65 % and 1,315±173.33 kg/rai of the control ponds. The average sludge area from the control ponds was 209.33±100.74 m^2, compared to only 5.48±6.24 in the experimental ponds. The redox potential of the soil at the bottom of the control ponds at the beginning and the end of the study was - 37.67±10.67 and –93.67±7.17 millivolt, respectively significantly lower than the -26.67±0.56 and -24.67±5.63 millivolt of the treatment ponds. It can be concluded that using central drainage to remove organic matters and sludge during cultured period can increase survival rates and production.

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