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Fish oil replacement with vegetable oil in dietary: Effects on the proximate composition and odor profile of *Eriocheir sinensis*

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Statement of the Problem: Fish oil rich in n-3 polyunsaturated fatty acids (PUFA) is regarded as an important dietary lipid source in *Eriocheir sinensis*, which can provide abundant essential fatty acids for their steady growth. While with the decrease of fish oil yield and increase of price, dietary replacement of fish oil by vegetable oil (FO/VO) begin to be concerned, because vegetable oil can obviously improve dietary structure and nutritional value when combined with other lipid sources. However, researches are primarily focused on growth performance, ratio of bait utilization and fatty acid composition of *E. sinensis* fed with different ratios of dietary replacement of FO/VO, and few studies are aimed to compare odor profile of *E. sinensis*. The objective of this study is to compare the proximate composition and volatile compounds of hepatopancreas and gonad fed with different feeds, which gives a most optimal replacement level to provide a guiding role on aquaculture.

Methodology & Theoretical Orientation: The biological index and proximate composition of *E. sinensis* fed with different diets were compared, and then sensory analysis, electronic nose (E-nose) and solid phase micro-extraction combining with gas chromatography-mass spectrometer (SPME-GC-MS) were applied to determine the odor profile of different samples.

Findings: Partly replacement (50%-75%) of FO/VO was beneficial to weight increment, nutrition accumulation and odor-active compounds (OACs) formation of *E. sinensis*. A total of 7 and 11 OACs were detected in hepatopancreas and gonad, respectively, which had the biggest contribution to the whole odor profiles of female and male *E. sinensis* when the dietary replacement level were 50% and 75%.

Conclusion & Significance: We can conclude that the best replacement level was 50% and 75% for female and male crabs, respectively, which can provide guidance for practical production and increase the range of dietary materials.

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