




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Growth, immunity and ammonia excretion of albino and normal *Apostichopus japonicus* (Selenka) feeding with various experimental diets (Article)

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Abstract

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An experiment was conducted to evaluate the effects of six experimental diets on growth performance, ammonia excretion and immunity of albino and normal *Apostichopus japonicus*. A factorial design was used, the factors being type of diets (six levels) and colour of *A. japonicus* (two levels). A total of 30 randomly selected albino *A. japonicus* were housed in each (60 × 50 × 30 cm³) of 18 blue plastic aquaria to form six groups in triplicate, and the same set-up was used for the normal *A. japonicus*. Each group of animals was fed with one of the six experimental diets. Apparent dry matter digestibility (ADMD) and apparent crude protein digestibility (ACPD) were analysed using acid-insoluble ash (AIA) content method. At the end of the experiment, all *A. japonicus* were harvested and weighed to calculate growth parameters. After weighing, six individuals from each aquarium were randomly sampled for immune indices. Results indicated that all growth parameters of *A. japonicus* increased with decreasing nutrient content in their diets ($p < .01$), whereas an opposite result was observed in case of the ammonia-nitrogen production by *A. japonicus*. Normal *A. japonicus* grew better ($p < .01$) and produced lower ($p < .01$) quantity of ammonia nitrogen compared to the albino *A. japonicus*. Immunity particularly superoxide dismutase and lysozyme activities was higher ($p < .05$) in normal compared to albino *A. japonicus*. Considering all measured variables, D1 (diet containing crude protein, crude lipid, carbohydrate and crude ash 51.8, 8.7, 231.3, 708.2 g/kg, respectively) was the best diet among all experimental diets. More research is still needed to optimize nutrients in the diet of *A. japonicus*, as this study does not provide information about critical threshold level of nutrients in diets. Until then, diet D1 can be recommended for *A. japonicus* aquaculture. © 2017 John Wiley & Sons Ltd

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ammonia excretion [apparent digestibility](#) [diet](#) [growth](#) [immunity](#) [metabolism](#) [sea cucumber](#)

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