

Is farmed australian seafood a better source of the good oil than wild-caught seafood?

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Background - Nutritionists and medical authorities encourage seafood consumption because the oils contain nutritionally important omega-3 polyunsaturated fatty acids (PUFA), termed the “Good Oil”. Wild-caught seafood is promoted as an ideal source of the two important long-chain omega-3 PUFA – EPA [eicosapentaenoic acid, 20:5(n-3)] and DHA [docosahexaenoic acid, 22:6(n-3)]. The human body manufactures only small amounts of these PUFA, so we need them from our diet. Two volumes of the FRDC-funded Guide “Seafood the Good Food” have been produced and detail the oil and PUFA composition of Australian seafood, with species examined largely from the wild. Omega-3 PUFA oils are also a prerequisite for survival and development of many marine finfishes, molluscs and crustaceans. The Guides also provide an indication to PUFA levels required in farmed species if their marketing for human consumption is to utilise or maximise on the beneficial omega-3 oil factor.

Objective - Concern has been expressed in recent times nationally and internationally that cultured (farmed) fish contain lower oil and omega-3 content than wild-harvested seafood. We examined the current state of play with cultured Australian seafood.

Outcomes - We found that, under current feeding practices, farmed Australian finfish (e.g. Atlantic salmon, barramundi, barramundi cod, striped trumpeter) have higher oil and omega-3 content than the same species from the wild. Other cultured species, jade perch, silver perch and Murray cod, also contained attractive PUFA levels. In general, farmed finfish contain higher oil and omega-3 content than many wild-caught species. Furthermore, oil content and composition in aquafeeds can be tailored to influence PUFA profiles in farmed finfish. Blue mussel contained similar oil and PUFA content to the more publicized New Zealand green lip mussel. In contrast to finfish, cultured banana prawns, whilst containing higher oil content, contained lower levels of omega-3 PUFA, in particular DHA, relative to wild specimens.

Conclusions - The PUFA profiles of cultured seafood are particularly important for consideration in aquaculture feeds and also for value-adding market opportunities from current harvests.