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Potencial de los microorganismos unicelulares como fuentes alternativas de macro y micronutrientes en las dietas para peces

P. Dantagnan*, P. Díaz, L. Marileo, J. Ruiz, P. Orellana y A. Hernández

Laboratorio de Nutrición y Fisiología de Peces, Núcleo de Investigación en Producción Alimentaria, Doctorado en Ciencias Agropecuarias, Facultad de Recursos Naturales, Universidad Católica de Temuco, Temuco

*dantagna@uct.cl

Cho, C.., Slinger, S., & Bayley, H. 1982. Bioenergetics of salmonid fishes: energy intake, expenditure and productivity. Comparative Biochemistry and Physiology Part B: Comparative Biochemistry, 73(1), 25-41.
Gholizadeh Zare Tavana B ; Banaee M ; Yousefi Jourdehi A.; Nematdoost Haghi B. ; Seyed Hassani M.H. Effects of selenium (Sel-Plex) supplement on blood biochemical parameters of juvenile Siberian sturgeon (Acipenser baerii)(2018).Iranian Journal of Fisheries Sciences 17(2):300-312.DOI:10.22092/I-JFS.2018.115481
Hansen, J.Ø., Lagos, L., Lei, P., Reveco-Urzua, F.E., Morales-Lange, B., Hansen, L.D., Schiavone, M., Mydland, L.T., Arntzen, M.Ø, Mercado, L., Tavares, R., Øverland, M. (2021). Down-stream processing of baker's yeast (Saccharomyces cerevisiae)–Effect on nutrient digestibility and immune response in Atlantic salmon (Salmo salar). Aquaculture, 530: 735707
Kieliszek, M., Błażejak, S., Piwowarek, K., & Brzezicka, K. (2018). Equilibrium modeling of selenium binding from aqueous solutions by Candida utilis ATCC 9950 yeasts. 3 Biotech. Springer Berlin Heidelberg, 8(9), pp. 1–13. doi: 10.1007/s13205-018-1415-8.
Long, M., Lin, W., Hou, J., Guo, H., Li, L., Li, D., ... & Yang, F. (2017). Dietary supplementation with selenium yeast and tea polyphenols improve growth performance and nitrite tolerance of Wuchang bream (Megalobrama amblycephala). Fish & Shellfish Immunology, 68, 74-83. doi: 10.1016/j.fsi.2017.07.017.
Pacitti D, Lawan MM, Sweetman J, Martin SAM, Feldmann J, Secombes CJ (2015) Selenium Supplementation in Fish: A Combined Chemical and Biomolecular Study to Understand Sel-Plex Assimilation and Impact on Selenoproteome Expression in Rainbow Trout (Oncorhynchus mykiss). PLoS ONE 10(5): e0127041. doi:10.1371/ journal.pone.0127041
Ponce de Leon, M.M. Bayon, C. Paquin and J.A. Caruso. (2002). "Selenium incorporation into Saccharomyces cerevisiae cells: a study of different incorporation methods" pp. 602–610.
Schrauzer G. N. (2006). Selenium yeast: Composition, quality, analysis, and safety. Pure Appl. Chem., vol. 78 pg. 105-109
Vidakovic, A., Huyben, D., Sundh, H., Nyman, A., Vielma, J., Passoth, V., Kiessling, A., Lundh, T. (2020). Growth performance, nutrient digestibility and intestinal morphology of rainbow trout (Oncorhynchus mykiss) fed graded levels of the yeasts Saccharomyces cerevisiae and Wickerhamomyces anomalus. Aquaculture Nutrition, 26(2): 275-286.
Sevgili, H., Sezen, S., Yılayaz, A., Aktaş, Ö., Pak, F., Aasen, I.M., Inge, K., Sandmann, M., Rohn, S., Turan, G., Kanyılmaz, M., 2019. Apparent nutrient and fatty acid digestibilities of microbial raw materials for rainbow trout (Oncorhynchus mykiss) with comparison to conventional ingredients. Algal Res. 42, 101592.
Hart, B., Schurr, R., Narendranath, N., Kuehnle, A., Colombo, S.M. 2021. Digestibility of Schizochytrium sp. whole cell biomass by Atlantic salmon (Salmo salar). Aquaculture 533, 736156.
Ruiz y col. (2022) Effect of cell disruption on apparent digestibility of macronutrients from Aurantiochytrium acetophilum in Salmo salar pre-smolts. Algal Research 64:102711.
Morais, S., Monroig, O., Zheng, X., Leaver, M.J., Tocher, D.R., 2009. Highly unsaturated fatty acid synthesis in Atlantic salmon: Characterization of ELOVL5- and ELOVL2-like elongases. Mar. Biotechnol. 11, 627–639.
Tocher, D.R., Fonseca-Madrigal, J., Bell, J.G., Dick, J.R., Henderson, R.J., Sargent, J.R., 2002. Effects of diets containing linseed oil on fatty acid desaturation and oxidation in hepatocytes and intestinal enterocytes in Atlantic salmon (Salmo salar). Fish Physiol. Biochem. 26, 157–170.