

บรรณานุกรม

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91 หน้า.

Abdelkhalek, N. K. M., Zaki, V. H. and Yousef, M. A. A. 2008. Effect of some immunostimulants on health status and disease resistance of Nile tilapia (*Oreochromis niloticus*). Proceedings of the 8th International Symposium on Tilapia in Aquaculture 2008, 1073-1088.

Alexander, J. B. and Ingram, G. A. 1992. Noncellular and nonspecific defense mechanisms of fish. Annu. Rev. Fish Dis. 2, 249-280.

Alvarez-Pellitero, P., Sitja-Bobadilla, A., Bermudez, R., and Quiroga, M. I. 2006. Levamisole activates several innate immune factors in *Scophthalmus maximus* (L.) Teleostei. International Journal of Immunopathology and Pharmacology 19(4), 727-38.

Amal, M. N. A. and Zamri-Saad, M. 2011. Streptococciosis in Tilapia (*Oreochromis niloticus*): A review. Pertanika J. Trop. Agric. Sci. 34(2), 195-206.

Amery, W. K., 1978. The mechanism of action of levamisole: immune reaction through enhanced cell maturation. Journal of the Reticuloendothelial Society 24, 187.

Anderson, D. P. and Siwicki, A. K. 1994. Duration of protection against *Aeromonas salmonicida* in brook trout immunostimulated with glucan or chitosan by injection or immersion. Prog. Fish Cul. 56(4), 258-261.

Anderson, D. P., Siwicki, A. K. and Dixon, O. W. 1989. Immunostimulation by levamisole in rainbow trout (*Salmo gairdneri*) in vivo. In Viruses of Lower Vertebrates (W. Ahne and Kurstak, eds) pp. 469-478. New York: Springer-Verlag.

Baba, T. Watase, Y. and Yoshinaga, Y. 1993. Activation of mononuclear phagocyte function by levamisole immersion in carp. Nippon Suisan Gakkaishi 59, 301-307.

Blaxhall, P. C. and Daisley, K. W. 1973. Routine haematological methods for use with fish blood. J. Fish Biol. 5, 771-781.

- Cha, S. H., Lee, J. S., Song, C. B., Lee, K. J. and Joen, Y. J. 2008. Effects of chitosan-coated diet on improving water quality and innate immunity in the olive flounder, *Paralichthys olivaceus*. Aquaculture 278, 110-118.
- Cuesta, A., Meseguer, J. and Esteban, M. A. 2002. Levamisole is a potent enhancer of gilthead sea bream natural cytotoxic activity. Vet. Immunol. Immunopathol. 89, 169-174.
- Cuesta, A., Meseguer, J. and Esteban, M. A. 2004. Total serum immunoglobulin M are affected by immunomodulators in sea bream (*Sparus aurata* L.). Levamisole is a potent enhancer of gilthead sea bream natural cytotoxic activity. Vet. Immunol. Immunopathol. 101, 203-210.
- Dhayanithi N. B., Ajithkumar, T. T., Arockiaraj, J., Balasundaram, C. and Ramasamy, H. 2015. Immune protection by Rhizophora apiculata in clownfish against *Vibrio alginolyticus*. Aquaculture 446, 1-6.
- Dina Rairakhwada, A. K., Pal, Z. P., Bhathena, N. P., Sahu, A. Jha and Mukherjee, S. C. 2007. Dietary microbial levan enhances cellular non-specific immunity and survival of common carp (*Cyprinus carpio*) juveniles. Fish and Shellfish Immunology 22, 477-486.
- Findlay, V. L. and Munday, B. L. 2000. The immunomodulatory effects of levamisole on the non-specific immune system of Atlantic salmon, *Salmo salar* L. J. Fish Dis. 23, 369-378.
- Galeotti, M. 1998. Some aspects of the application of Immunostimulants and a critical review of methods for their evaluation. Journal of Applied Ichthyology 14, 189-199.
- Geng, X., Dong, X. H., Tan, B. T., Yang, Q. H., Chi, S. Y., Liu, H. Y. and Liu, X. Q. 2011. Effects of dietary chitosan and *Bacillus subtilis* on the growth performance, non-specific immunity and disease resistance of cobia, *Rachycentron canadum*. Fish and Shellfish Immunology 31, 400-406.
- Grinde, B. 1989. Lysozyme from rainbow trout, *Salmo gairdneri* Richardson, as an antibacterial agent against fish pathogens. Journal of Fish Biology 12, 95-104.
- Gopalakannan, A. and Arul, V. 2006. Immunomodulatory effects of dietary intake of chitin, chitosan and levamisole on the immune system of *Cyprinus carpio* and control of *Aeromonas hydrophila* infection in ponds. Aquaculture 255, 179-187.

- Hai, N. V. 2015. The use of medicinal plants as Immunostimulants in aquaculture: A review. *Aquaculture* 446, 88-96.
- Harikrishnan, R., Balasundaram, C. and Heo, M. S. 2011. Impact of plant products on innate and adaptive immune system of cultured finfish. *Aquaculture* 317, 1-15.
- Harikrishnan, R., Kim, J. S., Balasundaram, C. and Heo, M. S. 2012a. Immunomodulatory effects of chitin enriched diets in *Epinephelus bruneus* against *Vibrio alginolyticus* infection. *Aquaculture* 326-329, 46-52.
- Harikrishnan, R., Kim, J. S., Balasundaram, C. and Heo, M. S. 2012b. Dietary supplementation with chitin and chitosan on haematology and innate immune response in *Epinephelus bruneus* against *Philasterides dicentrarchi*. *Experimental Parasitology* 131, 116-124.
- Holland, M. C. and Lambris, J. D. 2002. The complement system in teleosts. *Fish and Shellfish Immunology* 12, 399-420.
- Ispir, U and Dörücü, M. 2005. A study on the effects of levamisole on the immune system of rainbow trout (*Oncorhynchus mykiss*, Walbaum). *Turk. J. Vet. Anim. Sci.* 29, 1169-1176.
- Ispir, U. and Yonar, M. E. 2007. Effects of levamisole on phagocytic activity of rainbow trout (*Oncorhynchus mykiss* W.). *Acta Vet. Brno.* 76, 493-497.
- Janssen, P. A. 1976. The levamisole story. *Progress in Drug Research* 20, 347-383.
- Jeney, G, Galeotti, M., Volpatti, D., Jeney, Z. and Anderson, D. P. 1997. Prevention of stress in rainbow trout to *Aeromonas salmonicida* bacterin following prior immersion in Immunostimulants. *Fish and Shellfish Immunology* 3, 51-58.
- Kajita, Y., Sakai, M., Atsuta, S. and Kobayashi, M. 1990. The immunomodulatory effects of levamisole on rainbow trout, *Oncorhynchus mykiss*. *Fish Pathology* 25(2), 93-98.
- Kim, J. S., Harikrishnan, R. and Heo, M. S. 2012. Effect of probiotic and herbal supplemented diet on growth, blood biochemistry, and innate immune response of olive flounder and parrot fish. *Isr. J. Aquacult. Bamidgeh* 64, 711-718.

- Kumari, J. and Sahoo, P. K. 2006a. Non-specific immune response of healthy and immunocompromised Asian catfish (*Clarias batrachus*) to several Immunostimulants. Aquaculture 255, 133-141.
- Kumari, J. and Sahoo, P. K. 2006b. Dietary levamisole modulates the immune response and disease resistance of Asian catfish *Clarias batrachus* (Linnaeus). Aquaculture Research 37, 500-509.
- Larsen, H. N. and Snieszko, S. F. 1961. Comparison of various methods of determination of hemoglobin in trout blood. Progve Fish Cult. 23: 8-17.
- Leano, E. M., Guo, J. J., Chang, S. L. and Liao, I. C. 2004. Levamisole enhances non-specific immune response of Cobia, *Rachycentron canadum*, fingerlings. J. Fish. Soc. Taiwan 30, 321-330.
- Li, P., Wang, X. and Gatlin III, D. M. 2004. Excessive dietary levamisole suppresses growth performance of hybrid striped bass, *Morone chrysops* x *M. saxatilis*, and elevated levamisole in vitro impairs macrophage function. Aquac. Res. 35, 1380-1383.
- Li, G., Guo, Y., Zhao, D., Qian, P., Sun, J., Xiao, C., Liang, L. and Wang, H. 2006a. Effects of levamisole on the immune response and disease resistance of *Clarias fuscus*. Aquaculture 253, 212-217.
- Li, P., Wang, X. and Gatlin III D. M. 2006b. Evaluation of levamisole as a feed additive for growth and health management of hybrid striped bass (*Morone chrysops* x *Morone saxatilis*). Aquaculture 251, 201-209.
- Lin, S., Mao, S., Guan, Y., Lin, X. and Luo, L. 2012. Dietary administration of chitooligosaccharides to enhance growth, innate immune response and disease resistant of *Trachinotus ovatus*. Fish and Shellfish Immunology 32, 909-913.
- Lin, S., Pan, Y., Luo, L. and Luo, L. 2011. Effects of dietary β -1,3-glucan, chitosan or raffinose on the growth, innate immunity and resistance of koi (*Cyprinus carpio koi*). Fish and Shellfish Immunology. 31, 788-794.
- Logambal, S. M., Venkatalakshmi, S. and Michel, D. R. 2000. Immunostimulatory effect of leaf extract of *Ocimum sanctum* Linn. In *Oreochromis mossambicus* (Peters). Hydrobiologia, 430, 113-120.

- Luo, L., Cai, X., He, C., Xue, M., Wu, X. and Cao, H. 2009. Immune response, stress resistance and bacterial challenge in juvenile rainbow trouts *Oncorhynchus mykiss* fed diets containing chitosanoligosaccharides. Cur. Zool. 55(6), 12-19.
- Magnadottir, B. 2006. Innate immunity of fish (overview). Fish and Shellfish Immunology 20, 137-151.
- Maqsood, S., Samoon, M. H. and Singh, P. 2009. Immunomodulatory and growth promoting effect of dietary levamisole in *Cyprinus carpio* fingerlings against the challenge of *Aeromonas hydrophila*. Turkish Journal of Fisheries and Aquatic Sciences 9, 111-120.
- Maqsood, S., Singh, P., Samoon, M. H. and Balange, A. K. 2010. Effect of dietary chitosan on non-specific immune response and growth of *Cyprinus carpio* challenged with *Aeromonas hydrophila*. Int. Aquat. Res. 2, 77-85.
- Meshkini, S., Tafy, A. A., Tukmechi, A and Farhang-Pajuh, F. 2012. Effects of chitosan on hematological parameters and stress resistance in rainbow trout (*Oncorhynchus mykiss*). Veterinary Research Forum 3(1), 49-54.
- Misra, C. K., Das, B. K. and Mukherjee, S. C. 2008. Immune response, growth and survival of *Labeo rohita* fingerlings fed with levamisole supplemented diets for longer duration. Aquaculture Nutrition 15, 356-365.
- Morimoto, C., Abe, T. and Homma, M. 1979. Restoration of T-cell function in aged mice with long-term administration of levamisole. Clinical Immunology and Immunopathology 12, 316-322.
- Mulero, V., Esteban, M. A., Munoz, J. and Meseguer, J. 1998. Dietary intake of levamisole enhances the immune response and disease resistance of the marine teleost gilthead seabream (*Sparus aurata*). Fish and Shellfish Immunology 8, 49-62.
- Munday, B. L. and Zilberg, D. 2003. Efficacy of, and toxicity associated with, the use of levamisole in seawater to treat amoebic gill disease. Bull. Eur. Assoc. Fish Pathol. 23, 3-6.
- Novartis Animal Health Australia. 2009. Material Safety Data Sheet: Pyrimide 3-Way Combination Drench for Sheep, Page No: 1 of 6, Date of issue: October 2009.

- Novoa, B., Figueras, A., Ashton, I. and Secombes, C. J. 1996. In vitro studies on the regulation of rainbow trout (*Oncorhynchus mykiss*) macrophage respiratory burst activity. *Developmental and Comparative Immunology* 20(3), 207-216.
- Ogunbiyi, P. O., Conlon, P. D., Black, W. D. and Eyre, P. 1988. Levamisole-induced attenuation of alveolar macrophage dysfunction in respiratory virus-infected calves. *International Journal of Immunopharmacology* 10, 377-385.
- Ortuno, J. Esteban, M. A., Mulero, V. and Meseguer, J. 1998. Methods for studying the haemolytic, chemoattractant and opsonic activities of seabream (*Sparus aurata* L.) serum. In: Barnes, A. C., Davidson, G. A., Hiney, M. P., McIntosh, D. (Eds.), *Methodology in Fish Diseases Research*. Fisheries Research Services, Aberdeen, pp. 97-100.
- Parry, R. M., Chandau, R. C. and Shahani, R. M. 1965. A rapid and sensitive assay of muramidase. *Proceedings of the Society for Experimental Biology and Medicine* 119, 384-386.
- Paulsen, S. M., Engstad, R. E., Robertsen, B. 2001. Enhanced lysozyme production in Atlantic salmon (*Salmo salar* L.) macrophages treated with yeast β -glucan and bacterial lipopolysaccharide. *Fish and Shellfish Immunology* 11, 23-37.
- Radhakrishnan, S., Saravana B., P., Seenivasan, C., Shanthi, R. and Poongodi, R. 2014. Influence of medicinal herbs (*Alteranthera sessilis*, *Eclipta alba* and *Cissus quadrangularis*) on growth and biochemical parameters of the freshwater prawn *Macrobrachium rosenbergii*. *Aquac. Int.* 22, 551-572.
- Renoux, G. 1980. The general immunopharmacology of levamisole. *Drugs* 19, 88-89.
- Robertsen, B. 1994. Beta glucans as Immunostimulants in fish. In: Engstad, R. E., Jorenson, J. B., Stolen, J. S., Fletcher, T. C. (Eds.), *Modulators of Fish Immune Responses: Models for Environmental Toxicology, Biomarkers and Immunostimulators*. Fair Haven. SOS Publications, Japan, pp. 83-99.
- Robertsen, B. 1999. Modulation of the non-specific defense of fish by structurally conserved microbial polymers. *Fish and Shellfish Immunology* 9, 269-290.
- Sakai, M. 1999. Current research status of fish Immunostimulants. *Aquaculture* 172, 63-92.

- Sahoo, P. K. and Mukherjee, S. C. 1999. Influence of the immunostimulant, chitosan on immune responses of healthy and cortisol-treated rohu (*Labeo rohita*). *J. Aqua. Trop.* 14, 209-215.
- Sahoo, P. K. and Mukherjee, S. C. 2002. The effect of dietary immunomodulation upon *Edwardsiella tarda* vaccination in healthy and immunocompromised Indian major carp (*Labeo rohita*). *Fish and Shellfish Immunology* 12, 1-16.
- Santamarina, M. T., Tojo, J., Ubeira, F. M., Quinteiro, P. and Sammartin M. L. 1991. Anthelmintic treatment against *Gyrodactylus* sp. infecting rainbow trout *Oncorhynchus mykiss*. *Diseases of Aquatic Organisms* 10, 39-43.
- Secombes, C. J. 1990. Isolation of salmonid macrophages and analysis of their killing activity. In: J. S. Stolen, T. C. Fletcher, D. P. Anderson, B. S. Robertson and W. B. van Muiswinkel (eds.) *Techniques in Fish Immunology*. Fair Haven, SOS Publications, NJ, USA, pp 137-154.
- Siwicki, A. K. 1987. Immunomodulating activity of levamisole in carp spawner. *Journal of Fish Biology* 31(A), 245-246.
- Siwicki, A. K. 1989. Immunostimulating influence of levamisole on nonspecific immunity in carp (*Cyprinus carpio*). *Developmental and Comparative Immunology* 13, 87-91.
- Siwicki, A. K., Anderson, D. P. and Dixon, O. W. 1990. In vitro immunostimulation of rainbow trout (*Oncorhynchus mykiss*) spleen cells with levamisole. *Developmental and Comparative Immunology* 14, 231-237.
- Siwicki, A. K., Anderson, D. P. and Rumsey, G. L. 1994. Dietary intake of Immunostimulants by rainbow trout affects non-specific immunity and protection against furunculosis. *Vet. Immunol. Immunopathol.* 41, 125-139.
- Stasiak, A. S. and Bauman, C. P. 1996. Neutrophil activity as a potential bioindicator for contaminant analysis. *Fish and Shellfish Immunology* 6, 537-539.
- Studnicka, M., Siwicki, A. and Ryka, B. 1986. Lysozyme level in carp (*Cyprinus carpio* L.). *Isr. J. Aquac.-Bamidgeh.* 38, 22-25.

Suanyuk, N., Kong, F., Ko, D., Gilbert, G. L. and Supamattaya, K. 2008. Occurrence of rare genotypes of *Streptococcus agalactiae* in cultured red tilapia *Oreochromis* sp. and Nile tilapia *O. niloticus* in Thailand – Relationship to human isolates?. Aquaculture 284, 35-40.

Tsai, G. J. and Su, W. H. 1999. Antibacterial activity of shrimp chitosan against *Escherichia coli*. Journal of Food Protection 62, 239-243.

Young, D. H., Kohle, H. and Kauss, H. 1982. Effect of chitosan on membrane permeability of suspension-cultured *Glycine max* and *Phaseolus vulgaris* cells. Plant Physiology 70, 1449-1454.

Yuji Sado, R., De Almeida Bicudo, Á. J. and Possebon Cyrino, J. E. 2010. Dietary levamisole influenced hematological parameters of juvenile pacu, *Piaractus mesopotamicus* (Holmberg 1887). Journal of the World Aquaculture Society 41, 65-75.

<http://en.wikipedia.org>