UNIVERSITAS
GADJAH MADA
**Pengaruh Soda Kue [NaHCO3] dan Kapur Hidrat [Ca(OH)2] terhadap Pertumbuhan dan Kualitas Air pada
Budidaya Udang Vaname (Penaeus Vannamei, Boone 1931)**
Saffina Luthfii Anindyajati, Dr. Ega Adhi Wicaksono, S.Pi
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

DAFTAR PUSTAKA

Aisyah, N., M. Agus, dan T. Y. Mardiana. 2017. Analisis pemanfaatan dolomit dalam pakan terhadap periode molting udang vaname (*Penaeus vannamei*) di Tambak Unikal. PENA Akuatika, 16(1): 94-102.

Amjad, K., H.U. Dahms, A. Triawan, F. Y. Lin, Y. C. Wu, and H. T. Lai. 2025. Impact of alkalinity treatments on biofloc dynamics and growth performance in *Penaeus vannamei* shrimp culture. *Aquaculture Reports*, *42*: 102797.

Anisa., M. Marzuki, B. D. H. Setyono, dan A. R. Scabra. 2021. Tingkat kelulusan hidup post larva udang vaname (*Penaeus vannamei*) yang dipelihara pada salinitas rendah dengan menggunakan metode aklimatisasi bertingkat. Jurnal Perikanan, 11(1): 129-140.

Ariadi, H., dan A. Wafi. 2020. Hubungan kualitas air dengan nilai FCR pada budidaya intensif udang vannamei (*Penaeus vannamei*), Samakia: Jurnal Ilmu Perikanan, 11(1): 44-50.

Ariadi, H., M. Fadjar, and M. Mahmud. 2019. The relationships between water quality parameters and the growth rate of white shrimp (*Penaeus vannamei*) in intensive ponds. *Aquaculture. Aquarium, Conservation & Legislation*, *12*(6). 2103-2116.

Baedlowi, B., A. R. Rahim, dan A. Aminin. 2020. Optimasi sistem budidaya polikultur dengan penentuan komposisi organisme yang berbeda antara bandeng (C. *chanos*). udang vaname (L. *vannamei*). dan rumput laut (G. *verucoss*). *Jurnal Perikanan Pantura (JPP)*, *3*(2): 57-65.

Bayu. B., dan S. Sugito. 2020. Analisis alkalinitas dan kesadahan pada air lahan gambut di Kabupaten Mempawah Kalimantan Barat. Buletin Teknik Litkayasa Akuakultur, 18(1): 81-84.

Boyd, C. E. 2015. *Water quality* (pp. 223-241). Cham, Switzerland: Springer International Publishing AG.

Boyd, C. E., and Daniels, H. V. 1994. Liming and fertilization of brackishwater shrimp ponds. *Journal of Applied Aquaculture*, *2*(3-4): 221-234.

Boyd, C.E. and Tucker, C.S. 1998. Pond Aquaculture Water Quality Management. Springer.

Boyd. C.E. 1990. Water Quality in Pond for Aquaculture. Department of Fisheries and Allied Aquacultures. Auburn University, Alabama, USA

Dahlan. J., M. Hamzah, dan A. Kurnia. 2017. Pertumbuhan udang vaname (*Penaeus vannamei)* yang dikultur pada sistem bioflok dengan penambahan probiotik. *Journal of Fishery Science and Innovation*, *1*(1): 19-27.

UNIVERSITAS
GADJAH MADA
**Pengaruh Soda Kue [NaHCO3] dan Kapur Hidrat [Ca(OH)2] terhadap Pertumbuhan dan Kualitas Air pada
Budidaya Udang Vaname (Penaeus Vannamei, Boone 1931)**
Saffina Luthfii Anindyajati, Dr. Ega Adhi Wicaksono, S.Pi
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Devi, S. 2020. Pengaruh pemberian multi asam amino terlarut terhadap per-cepatan metamorfosis benih udang vaname (*Penaeus vannamei*. Boo-ne, 1931). Skripsi. Universitas Hasanuddin. Makassar.

Duan, Y., Y. Nan, J. Li, M. Xiao, Y. Wang, and R. Zhu. 2025. ammonia stress disrupts intestinal health in *Penaeus vannamei* under seawater and low-salinity environments by impairing mucosal integrity, antioxidant capability, immunity, energy metabolism, and microbial community. *Antioxidants*, *14*(11): 1383.

Dwiono, A., B. Widigdo, dan K. Soewardi. 2018. Pengaruh komposisi mineral air tanah terhadap fisiologi dan histologi udang vaname *Penaeus vannamei*. *Jurnal Ilmu Dan Teknologi Kelautan Tropis*, *10* (3): 535-546.

Emerson, K., R. C. Russo, R. E. Lund, and R. V. Thurston. 1975. Aqueous ammonia equilibrium calculations: effect of pH and temperature. *Journal of the Fisheries Board of Canada*, *32*(12), 2379-2383.

FAO. 2020. The State Of World Fisheries And Aquaculture. Sustainability In Action. Rome.

Furtado. P. S., L. H. Poersch, and W. Wasielesky Jr. 2011. Effect of calcium hydroxide. carbonate and sodium bicarbonate on water quality and zootechnical performance of shrimp *Penaeus vannamei* reared in bio-flocs technology (BFT) systems. *Aquaculture*, *321*(1-2): 130-135.

Huang, H. H., H. M. Liao, Y. J. Lei, and P. H. Yang. 2022. Effects of different carbon sources on growth performance of *Penaeus vannamei* and water quality in the biofloc system in low salinity. *Aquaculture*, *546*: 737239.

Huang, S., F. Zhou, S. Jiang, E. Li, and Y. Li. 2026. Molecular and physiological adaptations to low-salinity stress in penaeid shrimp: a focus on *Litopenaeus vannamei* and *Penaeus monodon. Stress Biology*, *6*(1): 34.

Jamila. 2021. Pengaruh dosis multi enzim pada pakan buatan komersial terhadap tingkat kelangsungan hidup dan pertumbuhan udang vaname (*Penaeus vannamei*). Skripsi. Universitas Hasanuddin. Makassar.

Khan, J. R., D. Johansen, P. V. Skov. 2018. The effects of acute and long-term exposure to CO_2 on the respiratory physiology and production performance of Atlantic salmon (Salmo salar) in freshwater. *Aquaculture*, *491*: 20-27.

Li, X., L. Wang, and X. Dai. 2025. Combined effects of ammonia nitrogen, nitrite, salinity, and temperature negatively impact the growth, survival, physiological, and biochemical parameters, and hepatopancreatic structure of *Penaeus vannamei*. *Aquaculture*, *596*: 741845.

Lin, W., H. Luo, J. Wu, T. C. Hung, B. Cao, X. Liu, J. Yang, and P. Yang. 2022. A review of the emerging risks of acute ammonia nitrogen toxicity to aquatic decapod crustaceans. *Water*, *15*(1): 27.

UNIVERSITAS GADJAH MADA
Pengaruh Soda Kue [NaHCO3] dan Kapur Hidrat [Ca(OH)2] terhadap Pertumbuhan dan Kualitas Air pada Budidaya Udang Vaname (Penaeus Vannamei, Boone 1931)
Saffina Luthfii Anindyajati, Dr. Ega Adhi Wicaksono, S.Pi
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Liu, H., B. Tan, J. Yang, S. Chi, X. Dong, and Q. Yang. 2016. Effects of aqueous Na/K and dietary K on growth and physiological characters of the Pacific white shrimp, *Penaeus vannamei*, reared in low-salt well water. *Aquaculture research*, *47*(2): 540-553.

Long, J., Y. Cui, R. Wang, Y. Chen, N. Zhao, C. Wang, and Y. Li. 2021. Combined effects of high salinity and ammonia-N exposure on the energy metabolism, immune response, oxidative resistance and ammonia metabolism of the Pacific white shrimp *Penaeus vannamei*. *Aquaculture Reports*, *20*: 100648.

Mohammed. F., P. Gabbadon, T. Ajmal, and M. S. Goodchild. M. S. 2024. A study on the effect of feed load on mortality of Pacific white shrimp *Penaeus vannamei*. *Aquaculture. Fish and Fisheries*, *4*(3). e187.

Muzahar. 2020. Teknologi dan Manajemen Budidaya Udang. Umrah Press. Tanjungpinang. Kepulauan Riau.

Niu, S., K. Zhang, Z. Li, G. Wang, H. Li, Y. Xia, J. Tian, E. Yu, W. Gong, and J. Xie. 2023. Nitrification and denitrification processes in a zero-water exchange aquaculture system: characteristics of the microbial community and potential rates. *Frontiers in Marine Science*, *10*: 1072911.

Pan, H. H., Setiawan, A. N., McQueen, D., Khan, J. R., and Herbert, N. A. 2020. Elevated CO_2 concentrations impacts growth and swimming metabolism in yellowtail kingfish, Seriola lalandi. *Aquaculture*, *523*: 735157.

Ramadhani. M. F., S. Salsabila, Ratna, A. S. Iskandar, R. N. Hajirah, S. A. Azani, dan N. E. Putri. 2023. Teknik Budidaya Udang Vaname Skala Super Intensif. Perpustakaan Universitas Negeri Makassar. Sulawesi Selatan.

Sa, M. V., and Boyd, C. E. 2017. Dissolution rate of calcium carbonate and calcium hydroxide in saline waters and its relevance for aquaculture. *Aquaculture*, *469*: 102-105.

Sá, M. V., Cavalcante, D. H., and Lima, F. R. 2021. Total buffering capacity of CaCO3-undersaturated and saturated waters buffered with agricultural limestone or hydrated lime and its importance to the liming of shrimp culture ponds. *Aquaculture*, *536*: 736455.

Scabra, A. R., M. Marzuki, dan A. Rizaldi. 2023. Effect of calcium hydroxide ($Ca(OH)_2$) and magnesium sulfate ($MgSO_4$) on vaname shrimp (*Penaeus vannamei*) cultivation in freshwater media. *Acta Aquatica: Aquatic Sciences Journal*, 77-84.

Scabra. A. R., N. Cokrowati, dan R. Wahyudi. 2023. Penambahan kalsium karbonat (CaCO3) pada media air tawar budidaya udang vaname (*Penaeus vannamei*). *Samakia: Jurnal Ilmu Perikanan*, *14*(2): 129-140.

Scabra. A. R., S. Fatimah, dan N. Cokrowati. 2024. Pengaruh pemberian kalsium hidroksida ($Ca[OH]_2$) pada budidaya udang vaname (*Penaeus vannamei*) air tawar. *Jurnal Perikanan Tropis*. *11*(1): 1-13.

UNIVERSITAS
GADJAH MADA
**Pengaruh Soda Kue [NaHCO3] dan Kapur Hidrat [Ca(OH)2] terhadap Pertumbuhan dan Kualitas Air pada
Budidaya Udang Vaname (Penaeus Vannamei, Boone 1931)**
Saffina Luthfii Anindyajati, Dr. Ega Adhi Wicaksono, S.Pi
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Sitanggang. L.P., dan L. Amanda. 2019. Analisa kualitas air alkalinitas dan kesa-dahan (hardness) pada pembesaran udang putih (*Penaeus vannamei*) di Laboratorium Animal Health Service binaan PT. Central Proteina Prima Tbk. Medan. Tapia Nauli, 1(1): 1-7.

Supono, S. 2006. The Productivity of white shrimp at intensif fishpond in Tulang Bawang Lampung. *Saintek Perikanan: Indonesian Journal of Fisheries Science and Technology*, *2*(1): 48-53.

Supono. 2015. Manajemen Lingkungan untuk Akuakultur. Plantaxia. Yogyakarta.

Supono. 2017. Teknologi Produksi Udang. Plantaxia. Yogyakarta.

Supono. 2018. Manajemen Kualitas Air untuk Budidaya Udang. Plantaxia. Yogyakarta.

Supono. 2019. Budidaya Udang Vaname Salinitas Rendah. Graha Ilmu. Yogyakarta.

Supriatna. M., M. Mahmudi, dan M. Musa. 2020. Model pH dan konsistensi dengan parameter kualitas udara pada tambak intensif udang vaname (*Penaeus vannamei*) di Banyuwangi Jawa Timur. *JFMR (Jurnal Penelitian Perikanan dan Kelautan)*, *4* (3): 368-374.

Vera, D., L. López-Galindo, R. Claro, S. Sánchez, M. Rosales-Leija, A. F. da Silva, and A. Braga. 2025. Concentration-dependent recovery of gills and hepatopancreas in juvenile *Penaeus vannamei* during long-term exposure to high alkalinity. *Aquaculture International*, *33*(7), 638.

Wang, T., W. Li, H. Shan, and S. Ma. 2021. Responses of energy homeostasis and lipid metabolism in *Penaeus vannamei* exposed to ammonia stress. *Aquaculture*, *544*: 737092.

Yulihartini. W., Rusliadi, dan A. Hamdan. 2016. Pengaruh penambahan calsium hidrosida $Ca(OH)_2$ terhadap moulting. pertumbuhan dan kelulushidupan udang vannamei (*Penaeus vannamei*). Skripsi. *Riau. Fakultas Perikanan dan Kelautan Universitas Riau*.

Yunarty, Y., A. Kurniaji, B. Budiyati, D. P. Renitasari, dan M. Resa. 2022. Karakteristik kualitas air dan performa pertumbuhan budidaya udang vaname (*Penaeus vannamei*) pola intensif. *PENA Akuatika: Jurnal Ilmiah Perikanan dan Kelautan*, *21*(1): 75-88.

Zhang. K., L. Pan. W. Chen, and C. Wang. 2017. Effect of using sodium bicarbonate to adjust the pH to different levels on water quality. the growth and the immune response of shrimp *Penaeus vannamei* reared in zero-water exchange biofloc-based culture tanks. *Aquaculture Research*, *48*(3): 1194-1208.

Zufadhillah. S., A. Thaib, dan L. Handayani. 2018. Efektivitas penambahan nano CaO cangkang kepiting bakau (*Scylla serrata*) ke dalam pakan komersial terhadap pertumbuhan dan frekuensi molting udang galah (*Macrobrachium rosenbergii*). Acta Aquatica, 5(2): 69-74.