DAFTAR PUSTAKA

Abdi, R., Setyowati, D. N., & Mukhlis, A. 2022. Pengaruh Penambahan Ekstrak Daun Jeruju (*Acanthus lificocus*) Dengan Dosis Berbeda Pada Pakan Terhadap Kelangsungan Hidup Udang Vaname (*Litopenaeus vannamei*) yang Diinfeksi *Vibrio parahaemolyticus*. Jurnal Perikanan Unram, 12(1), 33–44.

Ahmed, Z., Y. Wang., Q. Cheng., M. Imran. 2010. *Lactobacillus acidophilus* Bacteriocin, from Production to Their Application: An Overview. African Journal of Biotechnology Vol. 9. Islamabad. Page 2844.

Ananda Raja, R., Sridhar, R., Balachandran, C., Palanisammi, A., Ramesh, S., Nagarajan, K., 2017. Pathogenicity profile of *Vibrio parahaemolyticus* in farmed *Pacific white shrimp*, *Penaeus vannamei.* Fish Shellfish Immunol. 67:368–381.

Andriani Y, Aufa AK, Mia M R dan Ratu S. 2017. Karekterisasi *Bacillus* dan *Lactobacillus* yang Dienkapsulasi dalam Berbagai Bahan Pembawa untuk Probiotik Udang Vannamei *(Litopanaeus vannamei). Jurnal Perikanan dan Kelautan. Volume:7(2). ISSN 2089-3469.*

Ansumar, A., & Fibriarti, B. L. 2019. Isolasi dan Karakterisasi Bakteri Asam Laktat (BAL) Kandidat Probiotik Dari Terasi Tradisional Di Pekanbaru. Jurnal Universitas Riau, 1-14.

Apriliani, M., Sarjito, dan A.H.C. Haditomo. 2016. Keanekaragaman agensia penyebab *vibriosis* pada udang vaname (*Litopenaeus Vannamei*) dan sensitivitasnya terhadap antibiotik. Journal of Aquaculture Management and Technology. 5(1): 98-107.

Arsad, S., A, Afandy., A, P, Purwadhi., B, maya, V., D, K, Saputra., N, R, Buwono. 2017. Studi Kegiatan Budidaya Pembesaran Vanname dengan Penerapan Sistem Pemeliharaan Berbeda. Jurnal Ilmiah Perikanan Dan Kelautan. Vol 9 No.1

Bachruddin M., Sholichah M., Istiqomah S. dan Supriyanto A. 2018. Effect of probiotic culture water on growth, mortality, and feed conversion ratio of Vaname shrimp (*Litopenaeus vannamei* Boone). IOP Conf. Series: Earth and Environmental Science 137:1–7.

Basir, B. 2013.Kinerja Probiotik *Lactococcus lactis* Dalam Saluran Pencernaan Udang Vaname *(Litopenaeus vannamei*) dengan Pemberian Pakan yang Disuplemen Prebiotik Kacang Hijau.Tesis. Universitas Hasanuddin. Makassar

Bitler-Takahashi, J. D., dan E.C. Urbinati. 2014. Fish Immunology. The modification and manipulation of the innate immune system: Brazilian studies. Annals of the Brazilian Academy of Sciences. 86 (3): 1483-1495.

Cai, Y., Kumai, S., Ogawa, M., Benno, Y., & Nakase, T. 1999. Characterization and identification of *Pediococcus* species isolated from forage crops and their application for silage preparation. *Applied and Environmental Microbiology*, *65*(7), 2901–2906.

Chizhayeva, A., Amangeldi, A., Oleinikova, Y., Alybaeva, A., & Sadanov, A. 2022. Lactic acid bacteria as probiotics in sustainable development of aquaculture. *Aquatic Living Resources*, *35*.

Chomwong S, Charoensapsri W, Amparyup P, Tassanakajon A. 2018. Two host gut-derived lactic acid bacteria activate the proPO system and increase resistance to an AHPND-causing strain of *Vibrio parahaemolyticus* in the shrimp *Litopenaeus vannamei*. Dev Comp Immunol. 89:54–66

Clemente, A. 2012. Probiotics and Prebiotics: An Update from the World Gastrointestinal Organization (WGO). Eur Food Res Rev. 2(1):24-28

Dede, H., Riris. A., dan Gusti, D. 2014. Evaluasi Tingkat Kesesuaian Kualitas Air Tambak Udang Berdasarkan Produktivitas Primer PT. Tirta Bumi Nirbaya Teluk Hurun Lampung Selatan (Studi Kasus). Maspari Journal. 6 (1), 32-38.

De Schryver P, Defoirdt T, Sorgeloos P. 2014. Early Mortality Syndrome Outbreaks: A Microbial Management Issue in Shrimp Farming. LoS Pathogen 10(4): e1003919.

Effendy, S. R. A. & Akbar, T., 2004. Peningkatan Hemosit Benur Udang Windu (*Penaeus monodon Fabricus*) Pasca Perendaman Ekstrak Ragi Roti (*Saccharomyces cerevisiae*) Pada Konsentrasi Yang Berbeda. Jurnal Sains dan Teknologi, 14(2), pp. 46-53.

Eissa, E. H., Alaryani, F. S., Khattab, M. S., Elfeky, A., Eissa, M. E. H., & AbouelFadl, K. Y. 2022. The effect of *Pediococcus acidilactici* probiotics supplementation in the feed of Nile Tilapia (*Oreochromis niloticus*) on water quality , growth performance , Hematological parameters , antioxidants , immunological responses , enzymatic Activity , and. *Reaearch Square*, 1–27.

FAO. 2015. National Aquaculture Sector Overview: Indonesia. FIGIS. Jakarta. Page 1. FLUKA. 2013. Antimicrobial Susceptibility Test Discs. FLUKA. Buchs, Swiss. Page 3.

Hai, N.V., and R. Fotedar. 2010. A Review of Probiotics in Shrimp Aquaculture. Journal of Applied Aquaculture. 22(3): 251-266

Haliman, R.W dan Dian Adijaya S. 2008. Udang Vaname. Penebar Swadaya. Jakarta

Hatmanti A, Ruyitno N & Julinasari D. 2009. Screening Bakteri Penghambat untuk Bakteri Penyebab Penyakit pada Budidaya Ikan Kerapu dari Perairan Banten dan Lampung. Makara Sains. 13 (1): 81 – 86.

Heenatigala, P. P. M. & Fernando, M. U. L., 2016. Occurrence of Bacteria Species Responsible for Vibriosis in Shrimp Pond Culture Systems in Sri Lanka and Assessment of the Suitable Control Measures, Sri Lanka Journal of Aquatic Science, 21(1): 1–17.

Jannah, M., M. Junaidi, D.N. Setyowati, dan F. Azhar. 2018. Pengaruh Pemberian *Lactobacillus sp.* Dengan Dosis yang Berbeda Terhadap Sistem Imun Udang Vaname *(Litopenaeus vannamei)* yang Diinfeksi Bakteri *Vibrio parahaemolyticus*. Jurnal Kelautan. 11(2): 140-150

Jiang, G., Shen, H., Wan, X.H., Qiao, Y., Li, H., Wang, L.B., Shi, W.j., 2019a. Difference analysis of intestinal flora between healthy Litopenaeus vannamei and *acute hepatopancreatic necrosis syndrome L. vannamei*. Jiangsu J. Agr. Sci. 35, 142–148.

Johansson, M. W., Keyser, P., Sritunyalucksana, K. & Soderhall, K., 2000. Crustacean haemocytes and haemotopoiesis. Aquacultur, Volume 191, pp. 45-92.

Kakoolaki, S., Soltani, M., Ebrahimzadeh Mousavi, H. A., Sharifpour, I., Mirzargar, S. S., Afsharnasab, M., Dashtiannasab, A., et al., 2010. Selected hemolymph characters of cultured juvenile in *Penaeus vannamei* exposed to wsv using a new modified hemolymph staining. In: ISC, ed. shrimp culture, Bushehr, Iran. IFRO.

Kaltsum, U. 2021. Kinerja Probiotik Dengan Penambahan Prebiotik Ubi Jalar Ungu Dan Singkong Terhadap Respon Imun Udang Windu (*Penaeus monodon*). Universitas Hasanuddin.

Khuzaemah S. 2005. Pengaruh Aras Serat Kasar Ransum terhadap Kecernaan Serat kasar, Protein kasar dan Energi Metabolis pada Itik Tegal Jantan. Semarang: Skripsi Fakultas Peternakan Universitas Diponegoro.

Kulkarni, A., S. Krishnan., D.Anand., S.K.Uthaman., S.K.Otta., I.Karunasagar and R.K.Valappil. 2021. Immune responses and immunoprotection in crustaceans with special reference to shrimp. Reviews in Aquaculture. 13: 431-459

Kurniawan, M. H., Putri, B., & Elisdiana, Y. 2018. Efektivitas Pemberian Bakteri *Bacillus polymyxa* Melalui Pakan Terhadap Imunitas Non Spesifik Udang Vannamei *(Litopenaeus vannamei*). *E-Jurnal Rekayasa Dan Teknologi Budidaya Perairan*, *7*(1), 739.

Li, P., Kinch, L. N., Ray, A., Dalia, A. B., Cong, Q., Nunan, L. M., Camilli, A., Grishin, N. V., Salomon, D., & Orth, K. (2017). Acute hepatopancreatic necrosis disease-causing *Vibrio parahaemolyticus* strains maintain an antibacterial type VI secretion system with versatile effector repertoires. *Applied and Environmental Microbiology*. *83*(13).

Lutfiah N.A, 2015. Isolasi dan Identifikasi Bakteri Asam Laktat Pada Susu Kambing Saanen *(Capra aegagrus H.)*. Skripsi, Fakultas Sains dan Teknologi. Universitas Islam Negeri Maulana Malik Ibrahim Malang.

Manoppo, H dan M.E.F.Kolopita. 2014. Respon Imun Crustacea. Jurnal Budidaya Perairan. 2(2): 22-26

Moriarty, D.J.W. 1999. Disease control in shrimp aquaculture with probiotic bacteria. *Microbial biosynthesis: New frontiers*. Proceeding of the 8th International Symposium on Microbial Ecology, Atlantic Canada Society for Microbial Ecology, Halifax, Canada.

Natali C. H, dan Zubaidah E. 2013. Studi Kemampuan Probiotik Isotal Bakteri Asam Laktat Penghasil Eksopolisakarida Tinggi Asal Sawi Asin (*Brassica juncea*). Jurnal Pangan dan Agroindustri 1(1): 129-137.

Nurbaya, Muliani dan Tompo A, 2010. Penelitian Aplikasi Bakteri Probiotik Udang Windu (*Penaeus monodon)* di Tambak. Prosiding Forum Inovasi Teknologi Akuakultur 2010. Balai Riset Perikanan Budidaya Air Payau. Sulawesi Selatan.

Prastiti, L. A., A.H. Verdian, A. Oktaviana, N. Fatimah, K. Fathurohman, Q. Astria dan A.F. Siburian. 2023. Peningkatan Respon Imun Udang Vaname (*Litopenaeus vannamei*) Melalui Kombinasivitamin D3, Mineral Ca Dan Mg Pada Pakan. Jurnal Ilmu-ilmu Perikanan dan Budidaya Perairan. 18(1): 14-24

Purba, C.Y. 2012. Performa Pertumbuhan, Kelulushidupan, dan Kandungan Nutrisi Larva Udang Vanamei *(Litopenaeus vannamei)* Melalui Pemberian Pakan Artemia Produk Lokal yang Diperkaya dengan Sel Diatom. Journal of Aauaculture Management and Technology. 1(1):102-115

Putri, F. M., S. & S., 2013. Pengaruh Penambahan Spirulina sp. dalam Pakan Buatan Terhadap Jumlah Total Hemosit dan Aktivitas Fagositosis Udang Vaname (*Litopenaeus vannamei*). Journal of Aquaculture Management and Technology, 2(1), pp. 102-112.

Putri, A.L.O., dan E.Kusdiyantini. 2018. Isolasi dan identifikasi bakteri asam laktat dari pangan fermentasi berbasis ikan (Inasua) yang diperjualbelikan di Maluku-Indonesia. Jurnal Biologi Tropika. 1(2): 6-12

Rahim, N., Sriwulan, E.N. Zainuddin. 2020. Potensi Ekstrak *Ulva reticulata* Dalam Meningkatkan Aktivitas Lisozim Dan Diferansiasi Hemosit Pada Udang Windu (*Penaeus monodon*). Jurnal Aquafish Saintek. 1(1): 1-9.

Rattanachaikunsopon, P., and Phumkhachorn, P. 2010. Lactic Acid Bacteria: their Antimicrobial Compounds and their uses in food production. Annals of Biological Research, 1:218:228

Ringo, E., H.V.Doan., S.Lee, dan Seong Kyusong. 2019. Lactic Acid Bacteria in Shellfish: Possibilities and Challenges. Reviews in Fisheries Science & Aquaculture. Volume 28: 139-169

Rodriguez L, Le Moullac G. 2000. State of the art of immunological tools and health control of penaeid shrimp. Aquaculture 191: 109-119

Romadhon, Subagiyo dan S. Margino. 2012. Isolaso dan Karakterisasi Bakteri Asam Laktat dari Usus Udang Penghasil Bakteriosin sebagai Agen Antibakteria pada Produk-produk Hasil Perikanan. Jurnal Saintek Perikanan. 8(1): 60-64

Ronald, N., M. Yuhana, Sukenda. 2020. Deteksi Vibrio parahaemolyticus menggunakan marka gen pirA pada udang vaname (*Litopenaeus vannamei*) dengan real time PCR. Institut Pertanian Bogor

Rozik, M. 2014. Pengaruh Immunostimulan OMP terhadap Histopatologi Hepatopankreas Udang Windu (*Penaeus monodon* Fabricus) pasca Uji Tantang dengan *Vibrio harveyi*. Journal of Tropical Fisheries, 10 (1), 750-755.

Shanmugasundaram, S., Mayavu, P., Manikandarajan, T., Suriva, M., Enswar, A., Anbarasu, R. 2015. Isolation and identification of Vibrio sp. in the hepatopancreas of cultured white pacific shrimp (*Litopenaeus vannamei*). Int. Lett. Nat. Sci. 46:52–59

Soonthornchai, W., Rungrassamee, W., Karoonuthaisiri, N., Jarayabhand, P., Klinbunga, S., Soderhall, K., Jiravanichpaisal, P. 2010. Expression of immunerelated genes in the digestive organ of shrimp, *Penaeus monodon*, after an oral infection by *Vibrio harveyi*. Dev Com Immunol, 34: 19 – 28.

Sritunyalucksana K, Söderhäll K. 2000. The proPO and clotting system in crustacean. Aquac 191: 53-69

Sriwulan., A. Akil., A. Rantetondok., dan H. Anshary. 2019. Skrining dan aplikasi bakteri asam laktat yang diisolasi dari udang vanamei (Litopenaeus vannamei) usus sebagai potensi probiotik udang windu (*Penaeus monodon*). AACL Bioflux. 12(5): 1866-1881

Sudheesh P.S., K. Jie, and H.S. Xu. 2002. Random Amplified Polymorphic DNA-PCR Typing of *Vibrio parahaemolyticus* and *V. alginolyticus* Isolated from Cultured Shrimps. Aquaculture 207:11–17.

Sunaryanto, R., E. Martius. dan B. Marwoto. 2014. Uji Kemampuan *Lactobacillus casei* Sebagai Agensia Probiotik. Jurnal Bioteknologi dan Biosains. 1(1): 9-14

Supono. 2019. Budidaya Udang Vaname Salinitas Rendah Solusi Untuk Budidaya di Lahan Kritis. Edisi ke-1. Graha Ilmu. Yogyakarta.

Suskovic, J., Kos, B., Beganovic., Pavunc, A.L., Habjanic, K., Matosic, S. 2010. Antimicrobial Activity of Lactic Acid Bacteria, Food Technol. Biotechnol. 48(3): 296-307

Syadillah, A., S.Hilyana dan M. Marzuki. Pengaruh Penambahan Bakteri (*Lactobacillus* sp.) dengan Konsentrasi Berbeda terhadap Pertumbuhan Udang Vaname (*Litopenaeus Vannamei*). Jurnal Perikanan. 10(1): 8-19

Thao, T. T. P., Thoa, L. T. K., Ngoc, L. M. T., Lan, T. T. P., Phuong, T. V., Truong, H. T. H., Khoo, K. S., Manickam, S., Hoa, T. T., Tram, N. D. Q., Show, P. L., & Huy, N. D. 2021. Characterization halotolerant lactic acid bacteria *Pediococcus pentosaceus* HN10 and in vivo evaluation for bacterial pathogens inhibition. Chemical Engineering and Processing - Process Intensification, 168(July), 108576.

Tim Perikanan WWF-Indonesia. 2014. Budidaya Udang Vaname Tambak Semi Intensif dengan Instalasi Pengolahan Air Limbah (IPAL). Jakarta.

Utami, W., Sarjito dan Desrina. 2016. Pengaruh Salinitas terhadap Efek Infeksi *Vibrio harveyi* pada Udang Vaname *(Litopenaeus vannamei).* Journal of Aquaculture Management and Technology. 5(1): 82-90

Yulvizar C, Dewiyanti I, Defira C.N, 2014. Seleksi Bakteri Berpotensi Probiotik dari Ikan Mas *Cyprinus carpio* Indigenous Jantho Berdasarkan Aktivitas Antibakteri Secara Invitro. Jurnal Teknologi dan Industri Pertanian Indonesia. Universitas Syiah Kuala, Darussalam, Banda Aceh. Vol. 6. No.2

LAMPIRAN

Lampiran 1. Hasil analisis ragam Total Hemosit Count setelah pemberian perlakuan

ANOVA

THC

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	71.772	2	35.886	12.025	.008
Within Groups	17.906	6	2.984		
Total	89.678	8			

Lampiran 2. Hasil analisis ragam Total Hemosit Count setelah uji tantang *Vibrio parahaemolyticus*

ANOVA

THC

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	84.216	2	42.108	24.035	.001
Within Groups	10.512	6	1.752		
Total	94.727	8			

Lampiran 3. Hasil uji lanjut Tuckey Total Hemosit Count setelah pemberian perlakuan

Multiple Comparisons

thc

Tukey HSD

(I) perlakuan	(J) perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	2.11000	1.41050	.357	-2.2178	6.4378
	3	-4.65000*	1.41050	.038	-8.9778	-.3222
2	1	-2.11000	1.41050	.357	-6.4378	2.2178
	3	-6.76000*	1.41050	.007	-11.0878	-2.4322
3	1	4.65000*	1.41050	.038	.3222	8.9778
	2	6.76000*	1.41050	.007	2.4322	11.0878

*. The mean difference is significant at the 0.05 level.

Lampiran 4. Hasil uji lanjut Tuckey Total Hemosit Count setelah uji tantang *Vibrio parahaemolyticus*

Multiple Comparisons

thc

Tukey HSD

(I) perlakuan	(J) perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	2.90000	1.08072	.081	-.4160	6.2160
	3	-4.53333*	1.08072	.014	-7.8493	-1.2174
2	1	-2.90000	1.08072	.081	-6.2160	.4160
	3	-7.43333*	1.08072	.001	-10.7493	-4.1174
3	1	4.53333*	1.08072	.014	1.2174	7.8493
	2	7.43333*	1.08072	.001	4.1174	10.7493

*. The mean difference is significant at the 0.05 level.

Lampiran 5. Hasil analisis ragam Differensial Hemosit Count masing-masing sel hemosit setelah pemberian perlakuan

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
granular	Between Groups	6.660	2	3.330	.802	.491
	Within Groups	24.900	6	4.150		
	Total	31.560	8			
semigranular	Between Groups	10.896	2	5.448	.379	.700
	Within Groups	86.233	6	14.372		
	Total	97.129	8			
hialin	Between Groups	23.483	2	11.742	2.276	.198
	Within Groups	25.792	5	5.158		
	Total	49.275	7			

Lampiran 6. Hasil analisis ragam Differensial Hemosit Count masing-masing sel hemosit setelah uji tantang *Vibrio parahaemolyticus*

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
granular	Between Groups	10.007	2	5.003	1.783	.247
	Within Groups	16.833	6	2.806		
	Total	26.840	8			
semigranular	Between Groups	2.747	2	1.373	.150	.864
	Within Groups	54.913	6	9.152		
	Total	57.660	8			
hialin	Between Groups	6.047	2	3.023	.552	.603
	Within Groups	32.873	6	5.479		
	Total	38.920	8			

Lampiran 7. Hasil analisis ragam Aktifitas Fagositosis setelah pemberian perlakuan

ANOVA

aktivitasfagositosis

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	150.222	2	75.111	35.579	.000
Within Groups	12.667	6	2.111		
Total	162.889	8			

Lampiran 8. Hasil uji lanjut Tuckey Aktifitas Fagositosis setelah pemberian perlakuan

Multiple Comparisons

aktivitasfagositosis

Tukey HSD

(I) perlakuan	(J) perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-4.66667*	1.18634	.018	-8.3067	-1.0266
	3	-10.00000*	1.18634	.000	-13.6400	-6.3600
2	1	4.66667*	1.18634	.018	1.0266	8.3067
	3	-5.33333*	1.18634	.010	-8.9734	-1.6933
3	1	10.00000*	1.18634	.000	6.3600	13.6400
	2	5.33333*	1.18634	.010	1.6933	8.9734

*. The mean difference is significant at the 0.05 level.

Lampiran 9. Hasil analisis ragam Aktifitas Fagositosis setelah uji tantang *Vibrio parahaemolyticus*

ANOVA

aktivitasfagositosis

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	372.667	2	186.333	20.205	.002
Within Groups	55.333	6	9.222		
Total	428.000	8			

Lampiran 10. Hasil uji lanjut Tuckey Aktifitas Fagositosis setelah uji tantang *Vibrio parahaemolyticus*

Multiple Comparisons

aktivitasfagositosis

Tukey HSD

(I) perlakuan	(J) perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-9.33333*	2.47955	.022	-16.9413	-1.7254
	3	-15.66667*	2.47955	.002	-23.2746	-8.0587
2	1	9.33333*	2.47955	.022	1.7254	16.9413
	3	-6.33333	2.47955	.095	-13.9413	1.2746
3	1	15.66667*	2.47955	.002	8.0587	23.2746
	2	6.33333	2.47955	.095	-1.2746	13.9413

*. The mean difference is significant at the 0.05 level.

Lampiran 11. Hasil analisis ragam Aktifitas Lisozim setelah uji tantang *Vibrio parahaemolyticus*

ANOVA

aktivitaslisozim

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	540.444	2	270.222	1.012	.418
Within Groups	1602.631	6	267.105		
Total	2143.075	8			

Lampiran 12. Hasil analisis ragam Sintasan udang vaname

ANOVA

sintasan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	622.222	2	311.111	1.400	.317
Within Groups	1333.333	6	222.222		
Total	1955.556	8			

Lampiran 13. Hasil analisis ragam Total Mikroflora Usus setelah perlakuan

ANOVA

totalbakteri

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	234.167	2	117.083	33.774	.001
Within Groups	17.333	5	3.467		
Total	251.500	7			

Lampiran 14. Hasil uji lanjut Tuckey Total Mikroflora Usus setelah perlakuan

Multiple Comparisons

totalbakteri

Tukey HSD

(I) perlakuan	(J) perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-2.00000	1.52023	.447	-6.9467	2.9467
	3	-13.33333*	1.69967	.001	-18.8639	-7.8027
2	1	2.00000	1.52023	.447	-2.9467	6.9467
	3	-11.33333*	1.69967	.003	-16.8639	-5.8027
3	1	13.33333*	1.69967	.001	7.8027	18.8639
	2	11.33333*	1.69967	.003	5.8027	16.8639

*. The mean difference is significant at the 0.05 level.

Lampiran 15. Hasil analisis ragam Total Vibrio setelah uji tantang

ANOVA

totalbakterivibrio

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	224.667	2	112.333	17.136	.003
Within Groups	39.333	6	6.556		
Total	264.000	8			

Lampiran 16. Hasil uji lanjut Tuckey Total Vibrio setelah uji tantang

Multiple Comparisons

totalbakterivibrio

Tukey HSD

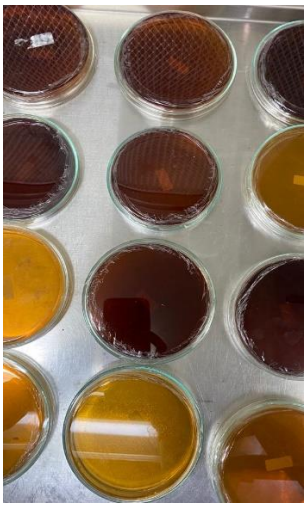
(I) perlakuan	(J) perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-11.33333*	2.09054	.004	-17.7477	-4.9190
	3	-9.66667*	2.09054	.009	-16.0810	-3.2523
2	1	11.33333*	2.09054	.004	4.9190	17.7477
	3	1.66667	2.09054	.718	-4.7477	8.0810
3	1	9.66667*	2.09054	.009	3.2523	16.0810
	2	-1.66667	2.09054	.718	-8.0810	4.7477

*. The mean difference is significant at the 0.05 level.

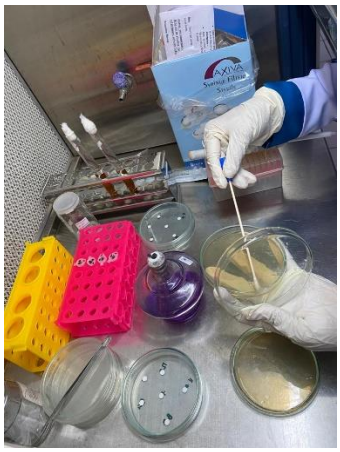
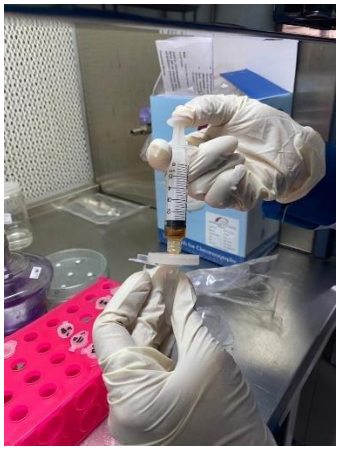
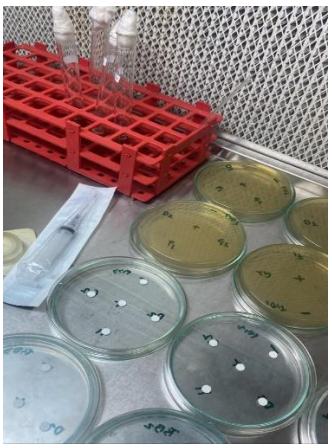
Lampiran 17. Dokumentasi Penelitian

Gambar. Dokumentasi Udang Vaname dan Penimbangan Udang Vaname yang akan Diisolasi





Gambar. Proses Pembedahan dan Isolasi Usus Udang Vaname

Gambar. Pengamatan Uji Daya Hambat


Gambar. Pengamatan Uji Fermentasi Gula dan Uji Katalase

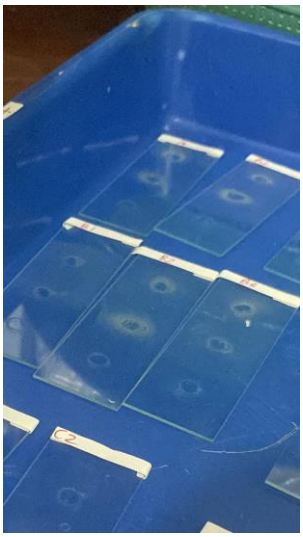
Gambar. Hasil Sentrifugasi Bakteri Asam Laktat

Gambar. Pengeringan Pakan Setelah Pencampuran Bakteri Asam Laktat

Gambar. Tata Letak Wadah Pemeliharaan Udang Vaname


Gambar. Penyuntikan Bakteri Vibrio pada Udang Uji (Udang Vaname)





Gambar. Pengamatan Parameter Respon Imun pada Udang Vaname