

## DAFTAR PUSTAKA

- Absalón, A. E., Mariano-Matías, A., Vásquez-Márquez, A., Morales-Garzón, A., Cortés-Espinosa, D. V., Ortega-García, R., & Lucio-Decanini, E. (2012). Complete genome sequence of a velogenic Newcastle disease virus isolated in Mexico. *Virus genes*, 45(2), 304-310.
- Adi, A. A. A. M., Astawa, N. M., Putra, K. S. A., Hayashi, Y., & Matsumoto, Y. (2010). Isolation and characterization of a pathogenic Newcastle disease virus from a natural case in Indonesia. *Journal of Veterinary Medical Science*, 72(3), 313-319.
- Adi, A. A. A. M., Kardenia, I. M., Astawa, N. M., & Matsumoto, Y. (2012). Pelacakan Secara Imunohistokimiawi Antigen Virus pada Ayam yang Diinfeksi dengan Virus Penyakit Tetelo (Immunohistochemical Detection of Viral Antigen in Tissue of Chickens Experimentally Infected with Newcastle Disease Virus). *Jurnal Veteriner*, 13(3), 278-283.
- Alexander, D. J., Bell, J. G., & Alders, R. G. (2004). A technology review: Newcastle disease, with special emphasis on its effect on village chickens in *FAO Animal Production and Health Paper*. Roma: FAO.
- Alexander, D. J., & Senne, D. A. (2008). Newcastle Disease Virus and Other Avian Paramyxoviruses. In D. E. Swayne, J. R. Glisson, J. E. Pearson, W. M. Reed, M. W. Jackwood, & P. R. Woolcock (Ed.). *A Laboratory Manual For the Isolation, Identification and Characterization of Avian Pathogens* (pp. 135-141). Georgia: American Association of Avian Pathologists, Inc.
- Alexander, D.J. (1986). Avian Paramyxovirus *Type 1 Infections in Pigeons – Spread to Domestic Poultry in Great Britain in 1984*. Acute Virus Infections Of Poultry, JB. McFerran *et al.* (eds.), Acute Virus Infections of Poultry. ECSC, EEC, EAEC, Brussels-Luxembourg.
- Alexander, D.J., Bell, J.G., and Alders, R.G. (2004). *Technology Review: Newcastle Disease with special emphasis on its effect on village chickens*. Rome. Italy. FAO publisher <https://www.fao.org/3/y5162e/y5162e00.html>
- Alhaji, N. B., & Odetokun, I. A. (2011). Assessment of Biosecurity Measures Against Highly Pathogenic Avian Influenza Risks in Small-Scale Commercial Farms and Free-Range Poultry Flocks in the Northcentral Nigeria. *Transboundary and Emerging Diseases*, 58(2), 157-161.
- Ali, M., Muneer, B., Hussain, Z., Rehmani, S. F., Yaqub, T., & Naeem, M. (2014). Evaluation Of Efficacy Of Killed And Commerciallyavailable Live Newcastle Disease Vaccine In Broiler Chickens In Pakistan. *JAPS: Journal of Animal & Plant Sciences*, 24(6).

- Al-Ilbadi, I. N. A., Al-Mahmoudi, A. H. J., Hammadi, H. A., & Al-Aqaby, A. R. A. (2019). Interactions of paramyxovirus: A review. *AL-Qadisiyah Journal of Veterinary Medicine Sciences*, 18(1), 105-112.
- Amarasinghe, G. K., Aréchiga Ceballos, N. G., Banyard, A. C., Basler, C. F., Bavari, S., Bennett, A. J., & Kuhn, J. H. (2018). Taxonomy of the order Mononegavirales: update 2018. *Archives of virology*, 163, 2283-2294.
- Angeliya, L., dan Cahyaningsari, D., 2012. *Pengembangan Metode Diagnosa Newcastle Disease dengan Menggunakan Teknik RT-PCR di BPPV Regional III*. Prosiding Rapat Teknis dan Pertemuan Ilmiah Kesehatan Hewan Kementerian Pertanian. 1(3): 126-131
- Angeliya, L., Kristianingrum, Y. P., Asmara, W., & Wibowo, M. H. (2022). Genetic characterization and distribution of the virus in chicken embryo tissues infected with Newcastle disease virus isolated from commercial and native chickens in Indonesia. *Veterinary World*, 15(6), 1467-1480.
- Anonim. (27 September 2023). SLEMAN CANANGKAN KAWASAN PERTANIAN SEHAT. Diambil dari <https://pertanian.slemankab.go.id/core/sleman-canangkan-kawasan-pertanian-sehat/>. Diakses pada 11 Juli 2024.
- Arnheiter, H., Davis, N. L., Wertz, G., Schubert, M., & Lazzarini, R. A. (1985). Role of the nucleocapsid protein in regulating vesicular stomatitis virus RNA synthesis. *Cell*, 41(1), 259-267.
- Arslan, M., Tezcan, E., Camcı, H., & Avcı, M. K. (2021). Effect of DNA Concentration on Band Intensity and Resolution in Agarose Gel Electrophoresis. *Van Sağlık Bilimleri Dergisi*, 14(3), 326-333.
- Astawa, N. M., & Adi, A. A. A. M. (2014). Immunological Detection of Newcastle Disease Viral Antigen in the Naturally Infected Chickens by Monoclonal Antibodies against Fusion-2 Protein. *Indonesian Veterinary Journal*, 15(2), 156-165.
- Aziem, A. A., Abd-Ellatieff, H., Elbestawy, A., Belih, S., El-Hamid, A., & Abou-Rawash, A. R. (2020). Susceptibility of Japanese quail and chickens to infection with newcastle disease virus genotype VIIId. *Damanhour Journal of Veterinary Sciences*, 3(2), 27-31.
- Ballagi-Pordany, A., Wehmann, E., Herczeg, J., Belak, S., & Lomniczi, B. (1996). Identification and grouping of Newcastle disease virus strains by restriction site analysis of a region from the F gene. *Archives of virology*, 141, 243-261.
- Bello, M. B., Yusoff, K., Ideris, A., Hair-Bejo, M., Peeters, B. P., & Omar, A. R. (2018). Diagnostic and vaccination approaches for Newcastle disease virus in

poultry: The current and emerging perspectives. *BioMed research international*, 2018, 7278459.

Bhaiyat, M. I., Ochiai, K., Itakura, C., Islam, M. A., & Kida, H. (1994). Brain lesions in young broiler chickens naturally infected with a mesogenic strain of Newcastle disease virus. *Avian Pathology*, 23(4), 693-708.

[BPS] Badan pusat statistik. (2023). *Populasi Ayam Ras Layer Menurut Provinsi (Ekor)*, 2012-2022. Badan Pusat Statistik: Jakarta.

Bwala, D. G., Clift, S., Duncan, N. M., Bisschop, S. P., & Oludayo, F. F. (2012). Determination of the distribution of lentogenic vaccine and virulent Newcastle disease virus antigen in the oviduct of SPF and commercial hen using immunohistochemistry. *Research in veterinary science*, 93(1), 520-528.

Cattoli, G., Susta, L., Terregino, C., & Brown, C. (2011). Newcastle disease: a review of field recognition and current methods of laboratory detection. *Journal of veterinary diagnostic investigation*, 23(4), 637-656.

Choi, K. S., Lee, E. K., Jeon, W. J., Kwon, J. H., Lee, J. H., & Sung, H. W. (2012). Molecular epidemiologic investigation of lentogenic Newcastle disease virus from domestic birds at live bird markets in Korea. *Avian Diseases*, 56(1), 218-223.

Chowdhary, M., Nashiruddullah, N., Abrol, R., Sood, S., Rahman, S., Ahmed, J. A., & Maqbool, R. (2020). Newcastle disease and their pathology in fowls affected with genotype XIII and pigeons with genotype II. *Int J Curr Microbiol App Sci*, 9, 3800-3810.

Collet, S. R., & Smith, J. A. (2020). Principles of Disease Prevention, Diagnosis, and Control. In D. E. Swayne, J. R. Glisson, J. E. Pearson, W. M. Reed, M. W. Jackwood, & P. R. Woolcock (Ed.). *A Laboratory Manual For the Isolation, Identification and Characterization of Avian Pathogens* (pp. 135-141). Georgia: American Association of Avian Pathologists, Inc.

Cornax, I., Miller, P. J., & Afonso, C. L. (2012). Characterization of live LaSota vaccine strain-induced protection in chickens upon early challenge with a virulent Newcastle disease virus of heterologous genotype. *Avian diseases*, 56(3), 464-470.

Courtney, S. C., Susta, L., Gomez, D., Hines, N. L., Pedersen, J. C., Brown, C. C., Miller, P. J., & Afonso, C. L. (2013). Highly divergent virulent isolates of Newcastle disease virus from the Dominican Republic are members of a new genotype that may have evolved unnoticed for over 2 decades. *Journal of clinical microbiology*, 51(2), 508-517.

- Creelan, J. L., Graham, D. A., & McCullough, S. J. (2002). Detection and differentiation of pathogenicity of avian paramyxovirus serotype 1 from field cases using one-step reverse transcriptase-polymerase chain reaction. *Avian Pathology*, 31(5), 493-499.
- Cristalli, A., & Capua, I. (2007). Practical problems in controlling H5N1 high pathogenicity avian influenza at village level in Vietnam and introduction of biosecurity measures. *Avian Diseases*, 51(s1), 461-462.
- Czeglédi, A., Ujvári, D., Somogyi, E., Wehmann, E., Werner, O., & Lomniczi, B. (2006). Third genome size category of avian paramyxovirus serotype 1 (Newcastle disease virus) and evolutionary implications. *Virus research*, 120(1-2), 36-48.
- de Almeida, R.S., S. Hammoumi, P. Gil, F.X. Briand, S. Molia, N. Gaidet, J. Cappelle, V. Chevalier, G. Balanca, A. Traoré, C. Grillet, O.F. Maminaiina, S. Guendouz, M. Dakouo, K. Samaké, M. Bezeid Oel, A. Diarra, H. Chaka, F. Goutard, P. Thompson, D. Martinez, V. Jestin, and E. Albina. 2013. New avian paramyxoviruses type I strains identified in Africa provide new outcomes for phylogeny reconstruction and genotype classification. *PLoS One*. 8(10): e76413.
- Degefa, T., Dadi, L., Yami, A. K. G. M., G/mariam, K., & Nassir, M. (2004). Technical and economic evaluation of different methods of Newcastle disease vaccine administration. *Journal of Veterinary Medicine Series A*, 51(7-8), 365-369.
- [DAFF] Department of Agriculture, Fisheries and Forestry. (2009). *National farm biosecurity manual: poultry production*. Canberra: Commonwealth Department of Agriculture Fisheries and Forestry.
- Dharmayanti, N. I., Hartawan, R., Hewajuli, D. A., & Indriani, R. (2014). Phylogenetic analysis of genotype VII of new castle disease virus in Indonesia. *African Journal of Microbiology Research*, 8(13), 1368-1374.
- Diel, D. G., da Silva, L. H., Liu, H., Wang, Z., Miller, P. J., & Afonso, C. L. (2012). Genetic diversity of avian paramyxovirus type 1: proposal for a unified nomenclature and classification system of Newcastle disease virus genotypes. *Infection, genetics and evolution*, 12(8), 1770-1779.
- Dimitrov, K. M., Lee, D. H., Williams-Coplin, D., Olivier, T. L., Miller, P. J., & Afonso, C. L. (2016). Newcastle disease viruses causing recent outbreaks worldwide show unexpectedly high genetic similarity to historical virulent isolates from the 1940s. *Journal of clinical Microbiology*, 54(5), 1228-1235.

- Dimitrov, K. M., Afonso, C. L., Yu, Q., & Miller, P. J. (2017). Newcastle disease vaccines—A solved problem or a continuous challenge?. *Veterinary microbiology*, 206, 126-136.
- [Ditkeswan] Direktorat Kesehatan Hewan. (2024). Situasi Penyakit Hewan Nasional 2024. Diambil dari [https://validation.isikhnas.com/?\\_token=DunikFvnLdE395I7lXRiRpv5dtH5QZGUkUBA6mKJ&year=2024&priority=94](https://validation.isikhnas.com/?_token=DunikFvnLdE395I7lXRiRpv5dtH5QZGUkUBA6mKJ&year=2024&priority=94). Diakses pada 5 Januari 2024.
- Doan, P. T. K., Cahyono, M. I., Rabiei, M., Pandarangga, P., McAllister, M. M., Low, W. Y., Tearle, R., Dharmayanti, I., Tarigan, S., Indriani, R., Ignjatovic, J., & Hemmatzadeh, F. (2020). Genome Sequences of Newcastle Disease Virus Strains from Two Outbreaks in Indonesia. *Microbiology resource announcements*, 9(23), e00205-20.
- Dortmans, J. C., Peeters, B. P., & Koch, G. (2012). Newcastle disease virus outbreaks: vaccine mismatch or inadequate application?. *Veterinary microbiology*, 160(1-2), 17-22.
- Dortmans, J. C. F. M., Rottier, P. J. M., Koch, G., & Peeters, B. P. H. (2010). The viral replication complex is associated with the virulence of Newcastle disease virus. *Journal of virology*, 84(19), 10113-10120.
- Dzogbema, K. F. X., Talaki, E., Batawui, K. B., & Dao, B. B. (2021). Review on Newcastle disease in poultry. *International Journal of Biological and Chemical Sciences*, 15(2), 773-789.
- Ekaningtias, M., Wuryastuty, H., & Wasito, W. (2017). Pendekatan Diagnosis Avian Influenza Virus dan Newcastle Disease Virus pada Kasus Lapangan Ayam Layer: Imunopatologis Streptavidin Biotin. *Jurnal Sain Veteriner*, 35(1), 118-126.
- Errington, W., & Emmerson, P. T. (1997). Assembly of recombinant Newcastle disease virus nucleocapsid protein into nucleocapsid-like structures is inhibited by the phosphoprotein. *Journal of general virology*, 78(9), 2335-2339.
- Ethica, S. N. 2020. *Pengantar Bioinformatika untuk Mahasiswa Laboratorium Medis*. Yogyakarta : Deepublish.
- Etriwati, Ratih, D., Handharyani, E., & Setiyaningsih, S. (2017). Pathology and immunohistochemistry study of Newcastle disease field case in chicken in Indonesia. *Veterinary world*, 10(9), 1066–1071.
- [FAO] Food and Agriculture Organization of the United Nations. (2002). *Chapter 8. Preparation of Washed Chicken Red Blood Cells*.

<https://www.fao.org/3/ac802e/ac802e0b.htm#bm11>. Diakses pada tanggal 6 Juni 2023.

[FAO] Food and Agriculture Organization of the United Nations. (2002). *Chapter 10. Haemagglutination Test*.  
<https://www.fao.org/3/ac802e/ac802e0d.htm#bm13>. Diakses pada tanggal 6 Juni 2023.

Farkas, T., Székely, E., Belák, S., & Kiss, I. (2009). Real-time PCR-based pathotyping of Newcastle disease virus by use of TaqMan minor groove binder probes. *Journal of clinical microbiology*, 47(7), 2114–2123

Ferreira, H. L., Taylor, T. L., Dimitrov, K. M., Sabra, M., Afonso, C. L., & Suarez, D. L. (2019). Virulent Newcastle disease viruses from chicken origin are more pathogenic and transmissible to chickens than viruses normally maintained in wild birds. *Veterinary microbiology*, 235, 25-34.

Flint, J., Racaniello, V. R., Rall, F. G., & Skalka, A. M. (2015). *Principles of Virology Fourth Edition*. Washington DC : American Society for Microbiology Press.

Fulton, R. M. (2021). Avian Influenza and Viscerotropic Velogenic (Exotic) Newcastle Disease. In Greenacre, C. B., & Morishita, T. Y. (Ed.). *Backyard Poultry Medicine and Surgery: A Guide for Veterinary Practitioners*, Second Edition. Hoboken: John Wiley & Sons, Inc.

Garcia, M., & Spatz, S. (2008). Infectious Laryngotracheitis. In Swayne, D. E. (Ed.). *Diseases of Poultry* (pp. 189-209). Hoboken: John Wiley & Sons, Inc.

Garten, W., Berk, W., Nagai, Y., Rott, R., & Klenk, H. D. (1980). Mutational changes of the protease susceptibility of glycoprotein F of Newcastle disease virus: effects on pathogenicity. *Journal of General Virology*, 50(1), 135-147.

Getabalew, M., Alemneh, T., Akeberegn, D., Getahun, D., & Zewdie, D. (2019). epidemiology, Diagnosis & Prevention of Newcastle disease in poultry. *Am J Biomed Sci Res*, 3(1), 50-59.

Glickman, R. L., Syddall, R. J., Iorio, R. M., Sheehan, J. P., & Bratt, M. A. (1988). Quantitative basic residue requirements in the cleavage-activation site of the fusion glycoprotein as a determinant of virulence for Newcastle disease virus. *Journal of virology*, 62(1), 354-356.

Gotoh, B., Komatsu, T., Takeuchi, K., & Yokoo, J. (2001). Paramyxovirus Accessory Proteins as Interferon Antagonists. *Microbiology and immunology*, 45(12), 787-800.

Gowthaman, V., Singh, S. D., Dhama, K., Barathidasan, R., & Ramakrishnan, M. A. (2011). Pathology and Molecular Diagnosis of Newcastle Disease Virus



- Infection in Broiler Breeders. *Indian Journal of Veterinary Pathology*, 35(2), 168-170.
- Hamaguchi, M., Nishikawa, K., Toyoda, T., Yoshida, T., Hanaichi, T., & Nagai, Y. (1985). Transcriptive complex of Newcastle disease virus II. Structural and functional assembly associated with the cytoskeletal framework. *Virology*, 147(2), 295-308.
- Haque, M. H., Hossain, M. T., Islam, M. T., Zinnah, M. A., Khan, M. S. R., & Islam, M. A. (2010). Isolation and detection of newcastle disease virus from field outbreaks in broiler and layer chickens by reverse transcription-polymerase chain reaction. *Bangladesh Journal of Veterinary Medicine*, 8(2), 87-92.
- Harahap, M. R., 2018. Elektroforesis: Analisis Elektronika Terhadap Biokimia Genetika. *Circuit: Jurnal Ilmiah Pendidikan Elektro*, 2(9), 21-26.
- Harrison, L., Brown, C., Afonso, C., Zhang, J., & Susta, L. (2011). Early occurrence of apoptosis in lymphoid tissues from chickens infected with strains of Newcastle disease virus of varying virulence. *Journal of comparative pathology*, 145(4), 327-335.
- Herczeg, J., Wehmann, E., Bragg, R. R., Travassos Dias, P. M., Hadjiev, G., Werner, O., & Lomniczi, B. (1999). Two novel genetic groups (VIIb and VIII) responsible for recent Newcastle disease outbreaks in Southern Africa, one (VIIb) of which reached Southern Europe. *Archives of virology*, 144, 2087-2099.
- Hewajuli, D. A., & Dharmayanti, N. (2011). Patogenitas virus Newcastle Disease pada Ayam. *WARTAZOA*, 72-80.
- Hidayanto, N. K., Asmara, W., & Wibowo, M. H. (2014). Karakterisasi Gen Non Struktural 1 (NSI) Virus Avian Influenza pada Isolat Itik Tahun 2013. *Jurnal Sain Veteriner*, 33(2).
- Hoerr, F. J. (2010). Clinical aspects of immunosuppression in poultry. *Avian diseases*, 54(1), 2-15.
- Horikami, S.M., Curran, J., Kolakofsky, D., & Moyer, S.A (1992). Complexes of Sendai virus NP-P and PL proteins are required for defective interfering particle genome replication in vitro. *Journal of virology*, 66(8), 4901-4908.
- Huang, Z., Panda, A., Elankumaran, S., Govindarajan, D., Rockemann, D. D., & Samal, S. K. (2004). The hemagglutinin-neuraminidase protein of Newcastle disease virus determines tropism and virulence. *Journal of virology*, 78(8), 4176-4184.

[ICTV] International committee on taxonomy of viruses. 2020. Virus Taxonomy: 2020. Release in October 2020, Available at [https://ictv.global/taxonomy/taxondetails?taxnode\\_id=20151029](https://ictv.global/taxonomy/taxondetails?taxnode_id=20151029)

Iwasaki, M., Takeda, M., Shirogane, Y., Nakatsu, Y., Nakamura, T., & Yanagi, Y. (2009). The Matrix Protein of Measles Virus Regulates Viral RNA Synthesis and Assembly by Interacting with the Nucleocapsid Protein. *Journal of Virology*, 83(20), 10374-10383.

Iyer, S.G. (1941). Studies on Newcastle (Ranikhet) Disease Virus. *Indian Journal of Veterinary Science and animal Husbandry*. Vol 13 (1943): 1-17

Jackwood, M. W., & Wit, S. D. (2020). Infectious Bronchitis. In Swayne, D. E. (Ed.). *Diseases of Poultry* (pp. 167-188). Hoboken: John Wiley & Sons, Inc.

Jadhav, A., Zhao, L., Ledda, A., Liu, W., Ding, C., Nair, V., & Ferretti, L. (2020). Patterns of RNA editing in Newcastle disease virus infections. *Viruses*, 12(11), 1249.

Jang, J., Hong, S. H., Choi, D., Choi, K. S., Kang, S., & Kim, I. H. (2010). Overexpression of Newcastle Disease Virus (NDV) v Protein Enhances NDV Production Kinetics in Chicken Embryo Fibroblasts. *Applied microbiology and biotechnology*, 85, 1509-1520.

Jin-Jihui, Zhao, J., Ren, Y., Zhong, Q., & Zhang, G. (2016). Contribution of HN protein length diversity to Newcastle disease virus virulence, replication and biological activities. *Scientific reports*, 6(1), 36890.

Kai, Y., Hu, Z., Xu, H., Hu, S., Zhu, J., Hu, J., Wang, X., Liu, X., & Liu, X. (2015). The M, F and HN genes of genotype VIIId Newcastle disease virus are associated with the severe pathological changes in the spleen of chickens. *Virology journal*, 12, 1-10.

Kang, Y., Xiang, B., Yuan, R., Zhao, X., Feng, M., Gao, P., Li, Y., Li, Y., Ning, Z., & Ren, T. (2016). Phylogenetic and pathotypic characterization of Newcastle disease viruses circulating in South China and transmission in different birds. *Frontiers in microbiology*, 7, 119.

Kattenbelt, J. A., Stevens, M. P., & Gould, A. R. (2006). Sequence variation in the Newcastle disease virus genome. *Virus research*, 116(1-2), 168-184.

Kencana, G. A. Y. (2012a). Penyakit Virus Unggas. Bali: Udayana University Press.

Kencana, G. A. Y., Mahardika, I. G. N. K., Suardana, I. B. K., Astawa, I. N. M., Dewi, N. M. K., & Putra, G. N. N. (2012b). Pelacakan kasus flu burung pada ayam dengan reverse transcriptase polymerase chain. *J Veteriner*, 13(3), 303-308.



- Kencana, G. A. Y. (2013). Penentuan Kandungan Virus Vaksin Newcastle Disease Dari Dua Poultry Shops Yang Berbeda Pada Kultur Sel Primer Fibroblast Embrio Ayam. *Buletin Veteriner Udayana*, 5(2), 61-69.
- Kencana, G. A. Y., & Kardenia, I. M. (2011, June). Gross pathological observation of acute Newcastle disease in domestic chicken. In *Prosiding Seminar Internasional Perhimpunan Mikrobiologi Indonesia (PERMI) dan International Union of Microbiological Societies (IUMS)* (pp. 22-24).
- Kencana, G. A. Y., Kardenia, I. M., & Mahardika, I. G. N. K. (2012). Peneguhan diagnosis penyakit Newcastle Disease lapang pada ayam buras di Bali menggunakan teknik RT-PCR. *Jurnal Kedokteran Hewan-Indonesian Journal of Veterinary Sciences*, 6(1), 28-31.
- Ke, G. M., Chuang, K. P., Chang, C. D., Lin, M. Y., & Liu, H. J. (2010). Analysis of sequence and haemagglutinin activity of the HN glycoprotein of Newcastle disease virus. *Avian Pathology*, 39(3), 235-244.
- Kho, C. L., Tan, W. S., Tey, B. T., & Yusoff, K. (2003). Newcastle disease virus nucleocapsid protein: self-assembly and length-determination domains. *Journal of General Virology*, 84(8), 2163-2168.
- Killian, M. L. (2020). Hemagglutination Assay for Influenza Virus. In Spackman, E. (Ed.). *Animal Influenza Virus: Methods and Protocols* (pp. 3-10). New York: Humana Press.
- Kim, L. M., King, D. J., Curry, P. E., Suarez, D. L., Swayne, D. E., Stallknecht, D. E., Slemons, R. D., Pedersen, J. C., Senne, D. A., Winker, K., & Afonso, C. L. (2007). Phylogenetic diversity among low-virulence Newcastle disease viruses from waterfowl and shorebirds and comparison of genotype distributions to those of poultry-origin isolates. *Journal of virology*, 81(22), 12641-12653.
- King, D. J. (1996). Influence of chicken breed on pathogenicity evaluation of velogenic neurotropic Newcastle disease virus isolates from cormorants and turkeys. *Avian diseases*, 40, 210-217.
- Kumar, V., Abbas, A. K., & Aster, J. C. (2018). Basic Pathology, Tenth Edition. Philadelphia: Elsevier.
- Kurniati, A., Dewi, D. N. S. S., & Purwani, N. N. 2019. Deteksi Cepat dan Spesifik *Mycobacterium tuberculosis* Menggunakan Polymerasi Chain Reaction. *Journal of Vocational Health Studies*. 3(1), 83-88.
- Kusnadi, J., dan Arumingtyas, E. L. 2020. *Polymerase Chain Reaction (PCR) : Teknik dan Fungsi*. Malang : Universitas Brawijaya Press

- Kwon, H. J., Cho, S. H., Ahn, Y. J., Seo, S. H., Choi, K. S., & Kim, S. J. (2003). Molecular epidemiology of Newcastle disease in Republic of Korea. *Veterinary microbiology*, 95(1-2), 39-48.
- Lamb, R. A., & Griffith, D. (2001). Paramyxoviridae: The Viruses and Their Replication. In Knipe DM, Howley PM, Griffin DF, Lamb RA, Malcolm AM, Roizman B, Straus SE (Ed.). *Fields Virology*. Philadelphia: Wolters Kluwer.
- Lamb, R., and Parks, G. (2013). *Paramyxoviridae*. In *Fields Virology*, 6th ed. vol.1, D.M. Knipe, & P.M. Howley. Lippincott Williams & Wilkins, Philadelphia.f
- Lean, F. Z., Vitores, A. G., Reid, S. M., Banyard, A. C., Brown, I. H., Núñez, A., & Hansen, R. D. (2022). Gross pathology of high pathogenicity avian influenza virus H5N1 2021–2022 epizootic in naturally infected birds in the United Kingdom. *One Health*, 14, 100392.
- Leboffe, M. J., & Pierce, B. E. (2011). *A Photographic Atlas for The Microbiology Laboratory, Fourth Edition*. Colorado : Morton Publishing.
- Li, Y. T., Chen, T. C., Lin, S. Y., Mase, M., Murakami, S., Horimoto, T., & Chen, H. W. (2020). Emerging lethal infectious bronchitis coronavirus variants with multiorgan tropism. *Transboundary and emerging diseases*, 67(2), 884-893.
- Liu, H., de Almeida, R. S., Gil, P., & Albina, E. (2017). Comparison of the efficiency of different Newcastle disease virus reverse genetics systems. *Journal of Virological Methods*, 249, 111-116.
- Liu, H., de Almeida, R. S., Gil, P., & Albina, E. (2018). Cleavage site of Newcastle disease virus determines viral fitness in persistent infection cells. *Veterinary microbiology*, 216, 123-131.
- Lumeij, J. T., & Stam, J. W. E. (1985). Paramyxovirus disease in racing pigeons: Clinical aspects and immunization. A report from the Netherlands. *Veterinary Quarterly*, 7(1), 60-65.
- MacLachlan, N. J., & Dubovi, E. J. (2017). *Fenner's Veterinary Virology, Fifth Edition*. London: Academic Press.
- Mao, Q., Ma, S., Schrickel, P. L., Zhao, P., Wang, J., Zhang, Y., Li, S., & Wang, C. (2022). Review detection of Newcastle disease virus. *Frontiers in veterinary science*, 9, 936251.
- Markey, B., Leonard, F., Archambault, M., Cullinane, A., & Maguire, D. (2013). *Clinical Veterinary Microbiology, Second Edition*. London : Mosby Elsevier.
- Mast, J., & Demeestere, L. (2009). Electron tomography of negatively stained complex viruses: application in their diagnosis. *Diagnostic Pathology*, 4, 1-7.

- Mazumder, A.C., Khatun, S., Nooruzzaman, M. E., Chowdhury, H., Das P. M., & Islam M. R., 2012. Isolation and identification of Newcastle disease viruses 131 from field outbreaks in chickens and pigeons. *The Bangladesh Veterinarian*, 29(2): 41 – 48.
- Miller, P. J., & Koch, G. (2020). Newcastle Disease. In Swayne, D. E. (Ed.). *Diseases of Poultry* (pp. 112-129). Hoboken: John Wiley & Sons, Inc.
- Miller, P. J., King, D. J., Afonso, C. L., & Suarez, D. L. (2007). Antigenic differences among Newcastle disease virus strains of different genotypes used in vaccine formulation affect viral shedding after a virulent challenge. *Vaccine*, 25(41), 7238-7246.
- Miller, P. J., Afonso, C. L., El Attrache, J., Dorsey, K. M., Courtney, S. C., Guo, Z., & Kapczynski, D. R. (2013). Effects of Newcastle disease virus vaccine antibodies on the shedding and transmission of challenge viruses. *Developmental & Comparative Immunology*, 41(4), 505-513.
- Miller, P. J., Decanini, E. L., & Afonso, C. L. (2010). Newcastle disease: evolution of genotypes and the related diagnostic challenges. *Infection, genetics and evolution*, 10(1), 26-35.
- Miller, P. J., Estevez, C., Yu, Q., Suarez, D. L., & King, D. J. (2009). Comparison of viral shedding following vaccination with inactivated and live Newcastle disease vaccines formulated with wild-type and recombinant viruses. *Avian diseases*, 53(1), 39-49.
- Miller, P. J., Haddas, R., Simanov, L., Lublin, A., Rehmani, S. F., Wajid, A., Bibi, T., Khan, T.A., Yaqub, T., Setiyaningsih, S., & Afonso, C. L. (2015). Identification of new sub-genotypes of virulent Newcastle disease virus with potential panzootic features. *Infection, genetics and evolution*, 29, 216-229.
- Moura, V. M. B. D., Susta, L., Cardenas-Garcia, S., Stanton, J. B., Miller, P. J., Afonso, C. L., & Brown, C. C. (2016). Neuropathogenic capacity of lentogenic, mesogenic, and velogenic Newcastle disease virus strains in day-old chickens. *Veterinary Pathology*, 53(1), 53-64.
- Murphy, F. A., Paul, J. G., Horzinek, M. C., & Studdert, M. J. (1999). *Veterinary Virology Third Edition*. California : Academic Press.
- Nagai, Y., & Klenk, H. D. (1977). Activation of precursors to both glycoproteins of Newcastle disease virus by proteolytic cleavage. *Virology*, 77(1), 125-134.
- Nagai, Y., Klenk, H. D., & Rott, R. (1976). Proteolytic cleavage of the viral glycoproteins and its significance for the virulence of Newcastle disease virus. *Virology*, 72(2), 494-508.

- Napрила, Z. H., & Prasetyo, D. (2022). Profil titer antibodi newcastle disease dan patologi anatomi ayam layer di peternakan ayam perseorangan, Kambingan, Malang, Jawa Timur. *ARSHI Veterinary Letters*, 6(3), 51-52.
- Njagi, L. W., Nyaga, P. N., Mbuthia, P. G., Bebora, L. C., Michieka, J. N., & Minga, U. M. (2010). A retrospective study of factors associated with Newcastle disease outbreaks in village indigenous chickens. *Bulletin of Animal Health and Production in Africa*, 58(1).
- Nurmayani, S., Kencana, G. A. Y., Adi, A. A. A. M., Besung, I. N. K., & Suratma, N. A. (2024). Avian Influenza-H5N1 dan Newcastle Diseases pada Ayam Petelur. *Buletin Veteriner Udayana Volume*, 15(6), 1086-1097.
- [OIE] Office International des Epizooties. (2012). Newcastle Disease. Manual Standards for Diagnostic Test and Vaccine: 576-589.
- Omeke, J. N., Ezema, W. S., Eze, D. C., & Okoye, J. O. A. (2018). Low dose velogenic viscerotropic Newcastle disease virus infection caused 30% mortalities in Anak broilers but none in Lohmann Brown layer chickens. *Journal of applied animal research*, 46(1), 1352-1357.
- Onyema, I., Eze, D. C., Abba, Y., Emennaa, P. E., Shoyinka, S. V. O., Okwor, E. C., Ezema, W. S., Ihedioha, J. I., & Okoye, J. O. A. (2019). Lesions of Velogenic Viscerotrophic Newcastle Disease Virus Infection were more Severe in Broilers than Pullets. *Journal of Applied Animal Research*, 47(1), 189-194.
- Pandarangga, P., Cahyono, M. I., McAllister, M. M., Peaston, A. E., Tearle, R., Low, W. Y., Doan, P.T.K., Rabiei, M., Ignjatovic, J., Dharmayanti, N.P.I., Indriani, R., Tarigan, S., & Hemmatzadeh, F. (2020). Full-genome sequences of two Newcastle disease virus strains isolated in West Java, Indonesia. *Microbiology Resource Announcements*, 9(24), 10-1128.
- Pantua, H. D., McGinnes, L. W., Peebles, M. E., & Morrison, T. G. (2006). Requirements for the assembly and release of Newcastle disease virus-like particles. *Journal of virology*, 80(22), 11062-11073.
- Park, M. S., Shaw, M. L., Munoz-Jordan, J., Cros, J. F., Nakaya, T., Bouvier, N., & Basler, C. F. (2003). Newcastle disease virus (NDV)-based assay demonstrates interferon-antagonist activity for the NDV V protein and the Nipah virus V, W, and C proteins. *Journal of virology*, 77(2), 1501-1511.
- Pearson, G. L., & McCann, M. K. (1975). The role of indigenous wild, semidomestic, and exotic birds in the epizootiology of velogenic viscerotropic Newcastle disease in southern California, 1972-1973. *Journal of the American Veterinary Medical Association*, 167(7), 610-614.

- Peeters, B., & Koch, G. (2021) Newcastle Disease Virus (*Paramyxoviridae*). In Bamford, D., & Zuckerman, M. *Encyclopedia of Virology, Fourth Edition (Volume 1)* (pp. 648-654). Amsterdam: Elsevier.
- Pranatha, W. D., Irhas, R., Arhiono, H. N. P., Wayan, N., Widyasanti, H., & Kardena, I. M. (2018). Laporan Kasus Newcastle Diseases dan Avian Influenza pada Ayam Buras. *Indonesia Medicus Veterinus*, 7(5), 498-507.
- Pudjiatmoko. (2014). *Manual Penyakit Unggas*. Jakarta: Subdit Pengamatan Penyakit Hewan Direktorat Kesehatan Hewan Direktorat Jenderal Peternakan dan Kesehatan hewan Kementerian Pertanian.
- Purnasari, M. E., Adi, A. A. A. M., & Winaya, I. B. O. (2017). Pengaruh Virus Newcastle Disease Isolat Virulen Terhadap Gambaran Histopatologi Otak dan Berat Embrio Ayam. *Indonesia Medicus Veterinus*, 6(2), 101-108.
- Purwanda, I. G. B. A., Mahardika, I. G. N. K., & Kencana, G. A. Y. (2015). Seroprevalensi Infeksi Virus Newcastle Disease dan Deteksi Paramyxovirus Pada Itik di Peternakan dan Pasar Unggas di Bali. *Jurnal Ilmu dan Kesehatan Hewan*, 3(2), 55-63.
- Putra, H. H., Wibowo, M. H., Untari, T., & Kurniasih. (2012). Studi Lesi Makroskopis dan Mikroskopis Embrio Ayam yang Diinfeksi Virus Newcastle Disease Isolat Lapang yang Virulen. *Jurnal Sain Veteriner*, 30(1), 57-67.
- Putri, N., Ernawati, R., Rahmahani, J., & Rantam, F. A. (2019). Fusion protein of aminoacid mutations in Newcastle disease isolated from swan goose caused resistance to infection. *The Indian Veterinary Journal*, 96(10), 53-55.
- Putri, N., Ernawati, R., Rahmahani, J., Suwarno, S., Rantam, F.A. (2021). Phylogentic Relationship and Genotype Variation of Six Newcastle Disease Viruses Isolated from Duck In Indonesia. *Veterinary World*, 14(1) : 276-284.
- Qiu, X., Fu, Q., Meng, C., Yu, S., Zhan, Y., Dong, L., & Ding, C. (2016). Newcastle disease virus V protein targets phosphorylated STAT1 to block IFN-I signaling. *PloS one*, 11(2), e0148560.
- Quinn, P. J., Markey, B. K., Leonard, F. C., Hartigan, P., Fanning, S., & Fitzpatrick, E. (2011). *Veterinary microbiology and microbial disease*. Sussex: John Wiley & Sons.
- Rabiei, M., Cahyono, M. I., Doan, P. T. K., Pandarangga, P., Tarigan, S., Indriani, R., Dharmayanti, I., Ignjatovic, J., Low, W. Y., Tearle, R., McAllister, M. M., Alsharifi, M., & Hemmatzadeh, F. (2020). Genome sequences of newly emerged Newcastle disease virus strains isolated from disease outbreaks in Indonesia. *Microbiology resource announcements*, 9(23), 10-1128.

- Rao, P. L., Gandham, R. K., & Subbiah, M. (2020). Molecular evolution and genetic variations of V and W proteins derived by RNA editing in Avian Paramyxoviruses. *Scientific reports*, 10(1), 9532.
- Ravindra, P. V., Tiwari, A. K., Sharma, B., Rajawat, Y. S., Ratta, B., Palia, S., Sundaresan, N.R., Chaturvedi, U., Kumar, G.B.A., Chindera, K., Saxena, M., Subhudi, P.K., Rai, A., & Chauhan, R. S. (2008). HN protein of Newcastle disease virus causes apoptosis in chicken embryo fibroblast cells. *Archives of virology*, 153, 749-754.
- Römer-Oberdörfer, A., Mundt, E., Mebatsion, T., Buchholz, U. J., & Mettenleiter, T. C. (1999). Generation of recombinant lentogenic Newcastle disease virus from cDNA. *Journal of General Virology*, 80(11), 2987-2995.
- Römer-Oberdörfer, A., Werner, O., Veits, J., Mebatsion, T., & Mettenleiter, T. C. (2003). Contribution of the length of the HN protein and the sequence of the F protein cleavage site to Newcastle disease virus pathogenicity. *Journal of General Virology*, 84(11), 3121-3129.
- Rout, S. N., & Samal, S. K. (2008). The large polymerase protein is associated with the virulence of Newcastle disease virus. *Journal of virology*, 82(16), 7828-7836.
- Samal, S. K. (2019). Newcastle Disease Virus. In Samal, S. K. (Ed.). *Avian Virology Current Research and Future Trends* (pp. 41-83). Norfolk: Caister Academic Press.
- Sari, N. P. D. S., Suardana, I. B. K., Winaya, I. B. O., Sudipa, P. H., & Suratma, N. A. (2024). Newcastle Disease and Avian Influenza in Broiler that Vaccinated on One Day Old. *Veterinary Science and Medicine Journal*, 6(4), 363-375.
- Schwartz, L. D., & Bickford, A. A. (1986). Necropsy of Chickens, Turkeys, and Other Poultry. *Veterinary Clinics of North America: Food Animal Practice*, 2(1), 43-60.
- Seal, B. S., King, D. J., & Meinersmann, R. J. (2000). Molecular evolution of the Newcastle disease virus matrix protein gene and phylogenetic relationships among the paramyxoviridae. *Virus Research*, 66(1), 1-11.
- Serbessa, T. A., & Tucho, T. T. (2017). Review on Newcastle Disease in Poultry and its Public Health Importance. *British Journal of Poultry Sciences*, 6(2), 29-39.
- Smith, E. C., Popa, A., Chang, A., Masante, C., & Dutch, R. E. (2009). Viral entry mechanisms: the increasing diversity of paramyxovirus entry. *The FEBS journal*, 276(24), 7217-7227.



- Snoeck, C. J., Marinelli, M., Charpentier, E., Sausy, A., Conzemius, T., Losch, S., & Muller, C. P. (2013). Characterization of newcastle disease viruses in wild and domestic birds in Luxembourg from 2006 to 2008. *Applied and Environmental Microbiology*, 79(2), 639-645.
- Sogandi. 2018. *Biologi Molekuler : Identifikasi Bakteri secara Molekuler*. Jakarta Utara : Universitas 17 Agustus 1945 Jakarta.
- Spackman, E., & Sitaras, I. (2020). Hemagglutination Inhibition Assay. In Spackman, E. (Ed.). *Animal Influenza Virus Methods and Protocols, Third Edition* (pp. 11-28). New York; Humana Press.
- Srihanto, E.A., Angeliya, L., Guntoro, T., Dharmawan, R., Dibia, N., Juwita, R.P. 2019. Analisis Genetik Gen Fusion Isolat Newcastle Disease Virus yang Berasal dari Berbagai Wilayah Indonesia. *Prosiding, Penyidikan Penyakit Hewan*: 185-294
- Susanti, W. G., Wicaksono, A., & Basri, C. (2021). Kejadian Kasus Penyakit Newcastle di Peternakan Ayam Buras di Kabupaten Barru. *Jurnal Ilmu Pertanian Indonesia*, 26(3), 379-385.
- Tabbu, C. R. (2000). *Penyakit Ayam dan Penanggulangannya : Volume 1. Penyakit Bakterial, Mikal, dan Viral*. Yogyakarta : Penerbit Kanisius.
- Tagueha, A. D. (2020). Asosiasi Faktor Pemeliharaan Dan Status Infeksi Newcastle Disease (ND) Pada Peternakan Ayam Buras Di Kecamatan Teluk Ambon. *Agrinimal Jurnal Ilmu Ternak dan Tanaman*, 8(2), 51-56.
- Tan, S. W., Ideris, A., Omar, A. R., Yusoff, K., & Hair-Bejo, M. (2010). Sequence and phylogenetic analysis of Newcastle disease virus genotypes isolated in Malaysia between 2004 and 2005. *Archives of virology*, 155, 63-70.
- Terregino, C., & Capua, I. (2009). Clinical Traits and Pathology of Newcastle Disease Infection and Guidelines for Farm Visit and Differential Diagnosis. In Capua, I., & Alexander, D. J. (Ed.). *Avian Influenza and Newcastle Disease A Field and Laboratory Manual* (pp. 113-122). Milan: Springer-Verlag Italia.
- Tille, P. M. 2017. *Bailey & Scott's Diagnostic Microbiology, Fourteenth Edition*. Missouri: Elsevier.
- Tortora, G.J., Funke, B.R., & Case, C.L. (2018). *Microbiology: an introduction, Thirteenth Edition*. Boston: Pearson.
- Triosanti, L. S., Wibowo, M. H., & Widayanti, R. (2018). Molecular characterization of hemagglutinin-neuraminidase fragment gene of Newcastle disease virus isolated from periodically-vaccinated farms. *Veterinary World*, 11(5), 657.

- Viljoen, G. J., Neland, L. H., & Crowther, J. R. (2005). *Molecular Diagnostic PCR Handbook*. New York : Springer.
- Wages Jr., J. M. (2005). POLYMERASE CHAIN REACTION. In Worsfold, P., Townshed, A., & Poole, C. (Ed.). *Encyclopedia of Analytical Science, Second Edition* (pp. 243-250). Amsterdam: Elsevier.
- Wakamatsu, N., King, D. J., Seal, B. S., Peeters, B. P., & Brown, C. C. (2006). The effect on pathogenesis of Newcastle disease virus LaSota strain from a mutation of the fusion cleavage site to a virulent sequence. *Avian diseases*, 50(4), 483-488.
- Walker, J. W., Heron, B. R., & Mixson, M. A. (1973). Exotic Newcastle disease eradication program in the United States. *Avian Diseases*, 7(3), 486-503.
- Wang J, Liu H, Liu W, Zheng D, Zhao Y, Li, Y., Wang, Y., Ge, S., Lv, Y., Zuo, Y., Yu, S., & Wang, Z. (2015) Genomic Characterizations of Six Pigeon Paramyxovirus Type 1 Viruses Isolated from Live Bird Markets in China during 2011 to 2013. *PLoS ONE*, 10(4), e0124261.
- Wibowo, M. H., & Amanu, S. (2010). Perbandingan beberapa program vaksinasi penyakit Newcastle pada ayam buras. *Jurnal Sain Veteriner*, 28(1), 27-35.
- Wibowo, M. H., Asmara, W., & Tabbu, C. R. (2006). Isolasi dan Identifikasi Serologis virus Avian Influenza dari Sampel Unggas yang Diperoleh di Daerah Istimewa Yogyakarta dan Jawa Tengah. *Jurnal Sain Veteriner*, 24(1), 77-83.
- Wibowo, M. H., Untari, T., & Wahyuni, A. E. T. H. (2012). Isolasi, identifikasi, sifat fisik, dan biologi virus tetelo yang diisolasi dari kasus di lapangan. *Jurnal Veteriner Desember*, 13(4), 425-433.
- Wibowo, S. E., Asmara, W., Wibowo, M. H., & Sutrisno, B. (2013). Comparison Protection Level of Newcastle Disease in Broiler. *Jurnal Sain Veteriner*, 31(1), 16-26.
- Wibowo, S. E., Wibowo, M. H., & Sutrisno, B. (2017). Penentuan Patogenesitas Molekuler Virus Newcastle Disease yang Diisolasi dari Ayam Komersial Tahun 2013-2016. *Acta VETERINARIA Indonesiana*, 5(2), 105-119.
- Wilson, K., dan Walker, J., 2010. *Principles and Techniques of Biochemistry and Molecular Biology Seventh Edition*. Cambridge : Cambridge University Press.
- [WOAH] World Organisation for Animal Health. (2021). *Terrestrial Manual. Chapter 3.3.14. Newcastle Disease (Infection with Newcastle Disease Virus)*. [https://www.woah.org/fileadmin/Home/eng/Health\\_standards/tahm/3.03.14\\_NEWCASTLE\\_DIS.pdf](https://www.woah.org/fileadmin/Home/eng/Health_standards/tahm/3.03.14_NEWCASTLE_DIS.pdf). Diakses pada 6 Juni 2023.

- Xiao, S., Paldurai, A., Nayak, B., Samuel, A., Bharoto, E. E., Prajitno, T. Y., Collins, P. L., & Samal, S. K. (2012). Complete genome sequences of Newcastle disease virus strains circulating in chicken populations of Indonesia. *Journal of Virology*, 5969-5970.
- Yune, N., & Abdela, N. (2017). Update on Epidemiology, Diagnosis and Control Technique of Newcastle Disease. *Journal of Veterinary Science & Technology*, 8(1) 429-438.
- Yustinadewi, P. D., Yustiantara, P. S., dan Narayani, I. (2018). Teknik Perancangan Primer untuk Sekuen Gen Mdr-1 Varian 1199 pada Sampel Buffy Coat Pasien Anak dengan LLA. *Jurnal Metamorfosa*, 5 (1), pp. 105-111.
- Yusuf, Z. K. (2010). Polymerase chain reaction (PCR). *Jurnal Saintek*, 5(6), 1-6.
- Yuwono, T. (2006). *Teori dan Aplikasi Polymerase Chain Reaction*. Yogyakarta: Andi.
- Zheng, T., Adlam, B., Rawdon, T. G., Stanislawek, W. L., Cork, S. C., Hope, V., & Huang, Q. S. (2010). A cross-sectional survey of influenza A infection, and management practices in small rural backyard poultry flocks in two regions of New Zealand. *New Zealand Veterinary Journal*, 58(2), 74-80.