

## DAFTAR PUSTAKA

- Adler, B., Adler, H., Pfister, H., Jungi, T. W., and Peterhans, E. (1997). Macrophages Infected with Cytopathic Bovine Viral Diarrhea Virus Release a Factor ( s ) Capable of Priming Uninfected Macrophages for Activation-Induced Apoptosis. *Journal of Virology*, 71(4), 3255–3258.
- Adler, H., Frech, B., Meier, P., Jungi, T., and Peterhans, E. (1994). Noncytopathic Strains Of Bovine Viral Diarrhea Virus Prime Bovine Bone Marrow-Derived Macrophages For Enhanced Generation Of Nitric Oxide. *Biochemical and Biophysical Research Communications*, 202, 1562–1568.
- Adler, H., Jungi, T. W., Pfister, H., Strasser, M., Sileghem, M., and Peterhans, E. (1996). Cytokine Regulation by Virus Infection : Bovine Viral Diarrhea Virus , a Flavivirus , Downregulates Production of Tumor Necrosis Factor Alpha in Macrophages In Vitro. *Journal of Virological Methods*, 70(4), 2650–2653.
- Ahn, B. C., Walz, P. H., Kennedy, G. A., and Kapil, S. (2005). Biotype, Genotype, and Clinical Presentation Associated With Bovine Viral Diarrhea Virus ( BVDV ) Isolates From Cattle. *Intern J Appl Res Vet Med*, 3(4), 319–325.
- Almeida, L. L., Miranda, I. C. S., Hein, H. E., Neto, W. S., Costa, E. F., Marks, F. S., Rodenbusch, C.R., and Corbellini, L. G. (2013). Herd-level risk factors for bovine viral diarrhea virus infection in dairy herds from Southern Brazil. *Research in Veterinary Science*, 95(3), 901–907. <http://doi.org/10.1016/j.rvsc.2013.08.009>.
- Amaridis, G.S., Tsiligianni T.H., Dovolou E.,Rekkas C., Vouzaras D., and Menegatos I. (2009). Combined administration of Gonadotropin-releasing hormone, progesterone, and meloxicam is an effective treatment for the repeat-breeder cow. *Theriogenology* 72:542-548.
- Anonimus. (2003). *Statistix 8. User' Manual*. Analitical Software. Tallahassee FL.
- Baker, J. C. (1990). Clinical aspects of bovine virus diarrhoea virus infection. *Revue Scientifique et Technique Office International of Epizootics*, 9(1), 25–41.
- Baker, J. C. (1995). The Clinical Manifestations Of Bovine Viral Diarrhea Infection. *Veterinary Clinics of North America: Food Animal Practice*, 11(3), 425–445. [http://doi.org/10.1016/S0749-0720\(15\)30460-6](http://doi.org/10.1016/S0749-0720(15)30460-6)

- Berends, I. M. G. A., Swart, W. A. J. M., and Frankena, K. (2008). The effect of becoming BVDV-free on fertility and udder health in Dutch dairy herds. *Preventive Veterinary Medicine*, 84, 48–60. <http://doi.org/10.1016/j.prevetmed.2007.11.002>
- Bielefeldt-Ohmann, H. (1995). The pathologies of bovine viral diarrhea virus infection. *Vet. Clin. North Am. Food Anim. Pract.*, 11(3), 447–476–Bov.G/146. [http://doi.org/10.1016/S0749-0720\(15\)30461-8](http://doi.org/10.1016/S0749-0720(15)30461-8)
- Bitsch, V., and Rønsholt, L. (1995). Control of bovine viral diarrhea virus infection without vaccines. *The Veterinary Clinics of North America. Food Animal Practice*, 11(3), 627–40. [http://doi.org/10.1016/S0749-0720\(15\)30471-0](http://doi.org/10.1016/S0749-0720(15)30471-0)
- Björkman, C., Alenius, S., Emanuelsson, U. L. F., and Ugglå, A. (2000). *Neospora caninum* and Bovine Virus Diarrhoea Virus Infections in Swedish Dairy Cows in Relation to Abortion. *The Veterinary Journal*, 159, 201–206. <http://doi.org/10.1053/tvj.1999.0446>
- Bolin, S. R. (1995). The Pathogenesis Of Mucosal Disease. *Veterinary Clinics of North America: Food Animal Practice*, 11(3), 489–500. [http://doi.org/10.1016/S0749-0720\(15\)30463-1](http://doi.org/10.1016/S0749-0720(15)30463-1)
- Booker, C. W., Abutarbush, S. M., Morley, P. S., Jim, G. K., Pittman, T. J., Schunicht, O. C., Perret, T., Wildman, B.K., Fenton, R.K., Guichon, P.T and Janzen, E. D. (2008). Microbiological and histopathological findings in cases of fatal bovine respiratory disease of feedlot cattle in Western Canada. *2Canadian Veterinary Journal*, 49(5), 473–81.
- Boulanger, D., Waxweiler, S., Karelle, L., Loncar, M., Mignon, B., Dubuisson, J., Thiry, E and Pastoret, P. (1991). Characterization of monoclonal antibodies to bovine viral diarrhoea virus : evidence of a neutralizing activity against gp48 in the presence of goat anti-mouse immunoglobulin serum. *Journal of General Virology*, 72, 1195–1198.
- BPS. (2015). *Statistik Daerah Kabupaten Sleman 2015*. Badan Pusat Statistik Kabupaten Sleman. Yogyakarta.
- Brackenbury, L. S., Carr, B. V., and Charleston, B. (2003). Aspects of the innate and adaptive immune responses to acute infections with BVDV. *Veterinary Microbiology*, 96(4), 337–344. <http://doi.org/10.1016/j.vetmic.2003.09.004>.
- Brock, K. V. (1995). Diagnosis Of Bovine Viral Diarrhea Virus Infections. *Veterinary Clinics of North America: Food Animal Practice*, 11(3), 549–561. [http://doi.org/10.1016/S0749-0720\(15\)30466-7](http://doi.org/10.1016/S0749-0720(15)30466-7).

- Brock, K. V, Lapin, D., and Skrade, D. (1997). Embryo Transfer From Donor Cattle Persistently Infected With Bovine Viral Diarrhea Virus. *Theriogenology*, (97), 837–844.
- Brodersen, B. W. (2004). Immunohistochemistry used as a screening method for persistent bovine viral diarrhea virus infection. *Vet. Clin. North Am. Food Anim. Pract.*, 20(14152), 85–93. <http://doi.org/10.1016/j.cvfa.2003.11.007>.
- Brodersen, B. W., and Kelling, C. L. (1999). Alteration of Leukocyte Populations in Calves Concurrently Infected with Bovine Respiratory Syncytial Virus and Bovine Viral Diarrhea Virus Respiratory. *Viral Immunology*, 12(4), 323–334. <http://doi.org/10.1089/vim.1999.12.323>.
- Brown, G., Bolin, S., Frank, D., and Roth, J. (1991). Defective function of leukocytes from cattle persistently infected with bovine viral diarrhea virus , and the influence or recombinant cytokines. *American Journal of Veterinary Research*, 52, 381–387.
- Brownlie, J., Clarke, M. C., Howard, C. J., and Pocock, D. H. (1987). Pathogenesis and epidemiology of bovine virus diarrhoea virus infection of cattle. *Annales de Recherches Vétérinaires. Annals of Veterinary Research*, 18(2), 157–66.
- Brownlie, J., Hooper, L. B., Thompson, I., and Collins, M. E. (1998). Maternal recognition of foetal infection with bovine virus diarrhoea virus (BVDV) - The bovine pestivirus. *Clinical and Diagnostic Virology*, 10(2–3), 141–150. [http://doi.org/10.1016/S0928-0197\(98\)00030-0](http://doi.org/10.1016/S0928-0197(98)00030-0).
- Brownlie, J., Clark, MC., Howard, C.J., and Pocock, D.H. (1987). Pathogenesis And Epidemiology Of Bovine Viral Diarrhea Virus- Infection Of Cattle Virus Diarrhoea Virus Infection Of Cattle. *Ann .Rech.Vet*, 18(April), 157–166.
- Brownlie, J., Thompson, I., and Curwen, A. (2000). Bovine virus diarrhoea virus - strategic decisions for diagnosis and control. *In Pract.*, 22(April), 176–187.
- Bruschke, C. J. M., Haghparast, A., Hoek, A., Rutten, V. P. M. G., Wentink, G. H., Van Rijn, P. A., and Van Oirschot, J. T. (1998). The immune response of cattle, persistently infected with noncytopathic BVDV, after superinfection with antigenically semi-homologous cytopathic BVDV. *Veterinary Immunology and Immunopathology*, 62(1), 37–50. [http://doi.org/10.1016/S0165-2427\(97\)00165-7](http://doi.org/10.1016/S0165-2427(97)00165-7)
- Bruschke, C. J. M., Weerdmeester, K., Van Oirschot, J. T., and Van Rijn, P. A. (1998). Distribution of bovine virus diarrhoea virus in tissues and white blood cells of cattle during acute infection. *Veterinary Microbiology*, 64(1), 23–32. [http://doi.org/10.1016/S0378-1135\(98\)00249-1](http://doi.org/10.1016/S0378-1135(98)00249-1)

- Budiharta, S. (2002). *Kapita Selekta Epidemiologi Veteriner*. Yogyakarta: Bagian Kesehatan Masyarakat Veteriner, Fakultas Kedokteran Hewan, Universitas Gadjah Mada.
- Budiharta, S., and Suardana, I. W. (2007). *Buku Ajar Epidemiologi dan Ekonomi Veteriner*. Denpasar: Udayana Press.
- Cameron, A. (1999). *Survey Toolbox for Livestock Diseases- A Practical Manual and Software Package for Active Surveillance in Developing Countries*. Canberra. Australia: Australian Centre for International Agricultural Research.
- Carlsson, U., and Alenius, S. (1989). Bovine Virus Diarrhoea Virus , a Cause of Early Pregnancy Failure in the Cow, 23, 15–23.
- Chamorro, M. F., Walz, P. H., Haines, D. M., Passler, T., Earleywine, T., Palomares, R. A., Riddell, K.P., Galik, P., Zhang, Y and Givens, M. D. (2014). Comparison of levels and duration of detection of antibodies to bovine viral diarrhea virus 1 , bovine viral diarrhea virus 2 , bovine respiratory syncytial virus , bovine herpesvirus 1 , and bovine parainfluenza virus 3 in calves fed maternal colostrum o. *The Canadian Journal of Veterinary Research*, 78(334), 81–88.
- Chase, C. C. L. (2004). The immune response to bovine viral diarrhea virus : a constantly changing picture, 20, 9720642. <http://doi.org/10.1016/j.cvfa.2003.11.004>
- Chase, C. C. L. (2013). Biologicals The impact of BVDV infection on adaptive immunity. *Biologicals*, 41(1), 52–60. <http://doi.org/10.1016/j.biologicals.2012.09.009>
- Chase, C. C. L., and Elmowalid, G. (2004). The immune response to bovine viral diarrhea virus : a constantly changing picture. *Veterinary Clinics Food Animal Practice*, 20, 95–114. <http://doi.org/10.1016/j.cvfa.2003.11.004>
- Chase, C., Morarie-kane, S., Chase, C. C. L., Thakur, N., and Darweesh, M. F. (2015). Immune response to bovine viral diarrhea virus - Looking at newly defined targets Immune response to bovine viral diarrhea virus — looking at newly defined targets. *Animal Health Research Reviews*, (September 2016). <http://doi.org/10.1017/S1466252315000110>
- Chaves, N. P., Bezerra, D. C., Sousa, V. E. De, and Santos, H. P. (2010). Frequency of antibodies and risk factors of bovine viral diarrhea virus infection in non-vaccinated dairy cows in the Maranhense Amazon region, Brazil. *Ciencia Rural*, 40, 1448–1451.
- Chernick, A. (2012). *Vaccine Induced Mucosal Disease*. University of Calgary.

- Collett, M. S., Retzel, E., and Anderson, D. K. (1988). Comparisons of the Pestivirus Bovine Viral Diarrhoea Virus with Members of the Flaviviridae. *Journal of General Virology*, 69, 2637–2643.
- Corbett, E. M. (2010). Serological Evaluation Of Sentinel Calves In A BVDV Eradication Program. Michigan State University.
- Cvelni, S., Madi, J., and Ruden, D. (1998). Prevalence Of Antibodies To IBR And BVD Viruses In Dairy Cows With Reproductive Disorders. *Theriogenology*, 51(99), 875–881.
- Daly, R. F., and Neiger, R. D. (2008). Outbreak of Salmonella enterica serotype Newport in a beef cow-calf herd associated with exposure to bovine viral diarrhea virus. *Journal of the American Veterinary Medical Association*, 233(4), 618–623. <http://doi.org/10.2460/javma.233.4.618>.
- Daves, L., Yimer, N., Arshad, S. S., and Sarsaifi, K. (2016). Seroprevalence of Bovine Viral Diarrhea Virus Infection and Associated Risk Factors in Cattle in Selangor , Malaysia. *Vet Med Open J*, 1(1), 22–28. <http://doi.org/10.17140/VMOJ-1-105>.
- Day, M. J., and Schultz, R. D. (2014). *Veterinary Immunology – Principles and Practice* (Second Edi). Boca Raton: CRC Press.
- Deregt, D., Dubovi, E. J., Jolley, M. E., Nguyen, P., Burton, K. M., and Gilbert, S. A. (2005). Mapping of two antigenic domains on the NS3 protein of the pestivirus bovine viral diarrhea virus. *Veterinary Microbiology*, 108, 13–22. <http://doi.org/10.1016/j.vetmic.2005.02.010>.
- Dias, F. C., Médici, K. C., Alexandrino, B., Dias, E. C., Alfieri, A. A., and Samara, S. I. (2012). Monitoring Of Natural Infection By Bovine Viral Diarrhea Virus ( Bvdv ) In Cattle Herds. *Ars Veterinaria*, 105–117.
- Dohoo, I. R., Martin, S. W., and Stryhn, H. (2003). *Veterinary Epidemiology Research*. Canada: AVC Inc.
- Donis, R. O. (1995). Molecular Biology Of Bovine Viral Diarrhea Virus And Its Interactions With The HosT. *Veterinary Clinics of North America: Food Animal Practice* (Vol. 11). Elsevier Masson SAS. [http://doi.org/10.1016/S0749-0720\(15\)30459-X](http://doi.org/10.1016/S0749-0720(15)30459-X).
- Drew, T. W., Yapp, F., and Paton, D. J. (1999). The detection of bovine viral diarrhoea virus in bulk milk samples by the use of a single-tube RT-PCR. *Veterinary Microbiology*, 64, 145–154.
- Dubovi, E. J. (2013). Laboratory diagnosis of bovine viral diarrhea virus infections. *Veterinary Clinics of North America - Food Animal Practice*, 20(1), 69–83. <http://doi.org/10.1016/j.cvfa.2003.11.005>.

- Ellis, J., Davis, W. C., Belden, E. L., and Putt, D. L. (1988). Flow Cytofluorimetric Analysis of Lymphocyte Subset Alterations in Cattle Infected with Bovine Viral Diarrhea Virus. *Vet Pathol*, 236, 231–236.
- Evermann, J., and Barrington, G. (2005). Clinical Features. In Goyal, SM; Ridpath, JF. *Bovine Viral Diarrhea Virus Diagnosis, Management and Control* (First Edit). Iowa: Blackwell Publishing Professional.
- Fernandes, L. G., de Campos Nogueira, A. H., de Stefano, E., Pituco, E. M., Ribeiro, C. P., Alves, C. J., Oliveira, T.S., Clementio, I.J., and de Azevedo, S. S. (2015). Herd-level prevalence and risk factors for bovine viral diarrhea virus infection in cattle in the State of Paraiba, Northeastern Brazil. *Tropical Animal Health and Production*, 157–165. <http://doi.org/10.1007/s11250-015-0937-x>.
- Fosgate, G. T. (2009). Practical sample size calculations for surveillance and diagnostic investigations. *Journal of Veterinary Diagnostic Investigation : Official Publication of the American Association of Veterinary Laboratory Diagnosticians, Inc.*, 21(1), 3–14. <http://doi.org/10.1177/104063870902100102>.
- Fray, M. D., Mann, G. E., Clarke, M. C., and Charleston, B. (2000a). Bovine viral diarrhoea virus: its effects on ovarian function in the cow. *Veterinary Microbiology*, 77, 185–194.
- Fray, M. D., Paton, D. J., and Alenius, S. (2000b). The effects of bovine viral diarrhoea virus on cattle reproduction in relation to disease control. *Animal Reproduction Science*, 60–61, 615–627.
- Fredriksen, B., Sandvik, T., Løken, T., and Ødegaard, S. A. (1999). Level and duration of serum antibodies naturally with bovine virus diarrhoea virus. *Veterinary Record*, 144(March 1994), 111–114.
- Gil, L. H. V. G., Ansari, I. H., Vassilev, V., Liang, D., Lai, V. C. H., Zhong, W., Zhi, H., Dubovi, E.D and Donis, R. O. (2006). The Amino-Terminal Domain of Bovine Viral Diarrhea Virus N pro Protein Is Necessary for Alpha / Beta Interferon Antagonism. *Journal of Virology*, 80(2), 900–911. <http://doi.org/10.1128/JVI.80.2.900>.
- Goyal, S. M. (2005). Diagnosis. In Goyal, SM and Ridpath, JF. *Bovine Viral Diarrhea Virus Diagnosis, Management and Control* (First Edit). Iowa: Blackwell Publishing Professional.
- Grahn Te, Fahning ML, Zemjanis R. (1984) Nature of early reproductive failure caused by bovine viral diarrhea virus. *J Am Vet Med Assoc* 185:429-432.



- Grooms, D. L. (2004). Reproductive consequences of infection with bovine viral diarrhea virus, 20, 5–19. <http://doi.org/10.1016/j.cvfa.2003.11.006>.
- Grooms, D. L., and Keilen, E. D. (2002). Screening of Neonatal Calves for Persistent Infection with Bovine Viral Diarrhea Virus by Immunohistochemistry on Skin Biopsy Samples. *Clinical and Diagnostic Laboratory Immunology*, 9(4), 898–900. <http://doi.org/10.1128/CDLI.9.4.898-900.2002>.
- Grooms, D. L., Walz, P., Passler, T., Ridpath, J. F., Tremblay, R., Step, D., Callan, R.J and Givens, M.D. (2010). Control of bovine viral diarrhea virus in ruminants. *Journal of Veterinary Internal Medicine*, 24(3), 476–486. <http://doi.org/10.1111/j.1939-1676.2010.0502.x>.
- Gunn, H.M., 1993. Role of fomites and flies in the transmission of bovine viral diarrhea virus. *Veterinary Record* 132, 584-585.
- Gustafsson, H., & Emanuelson, U. (2002). Characterisation of the Repeat Breeding Syndrome in Swedish Dairy Cattle. *Acta Veterinaria Scandinavica*, 43(2), 115–125.
- Haines, D., Clark, E., and Duboyi, E. (1992). Monoclonal Antibody-based Immunohistochemical Detection of Bovine Viral Diarrhea Virus in Formalin-fixed , Paraffin-embedded Tissues. *Vet Pathol*, 32, 27–32.
- Harada, T., Tautz, N., and Thiel, R. (2000). E2-p7 Region of the Bovine Viral Diarrhea Virus Polyprotein : Processing and Functional Studies. *Journal of Virology*, 74(20), 9498–9506.
- Harding, M. J., Cao, X., Shams, H., Johnson, A. F., Vassilev, V. B., Gil, L. H., Wheeler, D.W., Haines, D., Sibert, G.J., Nelson, L.D., Campos, M. Donis, R.O. (2002). Role of bovine viral diarrhea virus biotype in the establishment of fetal infections. *American Journal of Veterinary Research*, 63(10), 1455–1463. <http://doi.org/10.2460/ajvr.2002.63.1455>.
- Hertig, C., Pauli, U., Zanoni, R., and Peterhans, E. (1991). Detection of bovine viral diarrhea ( BVD ) virus using the polymerase chain reaction. *Veterinary Journal*, 26, 65–76.
- Hilton, L., Moganeradj, K., Zhang, G., Chen, Y., Randall, R. E., Mccauley, J. W., and Goodbourn, S. (2006). The NPro Product of Bovine Viral Diarrhea Virus Inhibits DNA Binding by Interferon Regulatory Factor 3 and Targets It for Proteasomal Degradation □. *Journal of Virology*, 80(23), 11723–11732. <http://doi.org/10.1128/JVI.01145-06>
- Houe, H. (1994). Bovine virus diarrhoea virus : detection of Danish dairy herds with persistently infected animals by means of a Screening test of ten young stock, 19, 241–248.

- Houe, H. (1995). Epidemiology Of Bovine Viral Diarrhea Virus. *Veterinary Clinics of North America: Food Animal Practice*, 11(3), 521–547. [http://doi.org/10.1016/S0749-0720\(15\)30465-5](http://doi.org/10.1016/S0749-0720(15)30465-5).
- Houe, H. (1999). Epidemiological features and economical importance of bovine virus diarrhoea virus ( BVDV ) infections. *Veterinary Microbiology*, 64, 89–107.
- Houe, H. (2003). Economic impact of BVDV infection in dairies. *Journal Biologicals*, 31, 137–143. [http://doi.org/10.1016/S1045-1056\(03\)00030-7](http://doi.org/10.1016/S1045-1056(03)00030-7)
- Houe, H. (2005). Risk Assessment. In Goyal, SM ; Ridpath,JF. *Bovine Viral Diarrhea Virus Diagnosis, Management and Control* (First Edit). Iowa: Blackwell Publishing Professional.
- Houe, H., Baker, J. C., Maes, R. K., Ruegg, P. L., and Lloyd, J. W. (1995). Application of antibody titers against bovine viral diarrhea virus ( BVDV ) as a measure to detect herds with cattle persistently infected with BVDV, 332, 327–332.
- Houe, H., Baker, J. C., Maes, R. K., Wuryastuti, H., Wasito, R., Ruegg, P. L., and Lloyd, J. W. (1995). Prevalence of cattle persistently infected with bovine viral diarrhea virus in 20 dairy herds in two counties in central Michigan and comparison of prevalence of antibody-positive cattle among herds with different infection and vaccination status, 326, 321–326.
- Houe, H., Lindberg, A., and Moennig, V. (2006a). Test strategies in bovine viral diarrhea virus control and eradication campaigns in Europe. *J Vet Diagn Invest*, 436, 427–436.
- Houe, H., Lindberg, A., and Moennig, V. (2006b). Test strategies in bovine viral diarrhea virus control and eradication campaigns in Europe, 436, 427–436.
- Houe, H., Lindberg, A., and Moennig, V. (2006). Test Strategies in Bovine Viral Diarrhea Virus Control and Eradication Campaigns in Europe. *Journal of Veterinary Diagnostic Investigation*, 18(5), 427–436. <http://doi.org/10.1177/104063870601800501>.
- Houe, H., and Meyling, A. (1991). Prevalence of bovine virus diarrhoea ( BVD ) in 19 Danish dairy herds and estimation of incidence of infection in early pregnancy. *Preventive Veterinary Medicine*, 11, 9–16.
- Houe, H., and Palfi, V. (1993). Estimation of Herd Incidence of Infection With Bovine Virus Diarrhoea Virus (BVDV) in Herds Previously Without Animals Persistently Infected With BVDV. *Acta Veterinaria Scandinavica*, 34(2), 133–137.



- Howard, C. J. (1990). Immunological responses to bovine virus diarrhoea virus infections. *Revue Scientifique et Technique Office International of Epizootics*, 9(1), 95–103.
- Indarwati, R. (2017). Biosecurity Pada Peternakan Sapi Perah. Diperoleh tanggal 24 Juli 2017 Pukul 05.04 WIB dari <http://bbppbatu.bppsdp.pertanian.go.id/biosecurity-pada-peternakan-sapi-perah/>.
- Irianingsih, S. (2013). Laporan Monitoring Penyakit Infectious Bovine Rhinotracheitis (IBR) Dan Bovine Viral Diarrhea (BVD) Pada Sapi sebagai Pendukung Keberhasilan Program Swasembada Daging Sapi Dan Kerbau Tahun 2014. Balai Besar Veteriner Wates. Direktorat Jenderal Peternakan dan Kesehatan Hewan Kementerian Pertanian. Yogyakarta.
- Isken, O., Langerwisch, U., Lamp, B., Duden, R., and Tautz, N. (2014). Functional Characterization of Bovine Viral Diarrhea Virus Nonstructural Protein 5A by Reverse Genetic Analysis and Live Cell. *Journal of Virology*, 88(1), 82–98. <http://doi.org/10.1128/JVI.01957-13>
- Jensen, J., and Schultz, R. D. (1991). Effect of infection by bovine viral diarrhea virus ( BVDV ) in vitro on interleukin- 1 activity of bovine monocytes . *Veterinary Immunology and Immunopathology*, 29, 251–265. [http://doi.org/10.1016/0165-2427\(91\)90018-8](http://doi.org/10.1016/0165-2427(91)90018-8)
- Krametter-FroetScher, R., Duenser,M., Preyler,B., Theiner. A., Benetka. V., Moestl, K., and Baumgartner,W.(2010). Pestivirus infection in sheep and goats in West Austria. *Vet J* 186:342–346.
- Kennedy, J. A., Mortimer, R. G., and Powers, B. (2006). Reverse transcription-polymerase chain reaction on pooled samples to detect bovine viral diarrhea virus by using fresh ear-notch – sample supernatants. *J Vet Diagn Invest*, 18, 89–93.
- King, A. M. Q., Lefkowitz, E., Carstens, E. B., and Adams, M. J. (2012). Flaviviridae-Virus Taxonomy- Ninth Report of the International Committee on Taxonomy of Viruses. In A. M. Q. King, E. Lefkowitz, E. B. Carstens, and M. J. Adams (Eds.), *Ninth Report of the International Committee on Taxonomy of Viruses* (pp. 1003–1020). Elsevier. <http://doi.org/10.1016/B978-0-12-384684-6.00086-0>
- Kottwitz, J. J., and Ortiz, M. (2016). Bovine Viral Diarrhea Virus in Zoos : A Perspective from the Veterinary Team, 6(January), 1–5. <http://doi.org/10.3389/fmicb.2015.01496>
- Kramps, J. A., Maanen, C. Van, Wetering, G. Van De, Stienstra, G., and Quak, S. (1999). A simple, rapid and reliable enzyme-linked immunosorbent assay for the detection of bovine virus diarrhoea virus (BVDV) specific antibodies

in cattle serum, plasma and bulk milk. *Veterinary Microbiology*, 64, 135–144.

Lang-Ree, J.R., Vatn, T., Kommisrud, E., Loken, T., (1994). Transmission of bovine viral diarrhea virus by rectal examination. *Veterinary Record* 135, 412-413

Lambot, M., Hanon, E., Lecomte, C., Hamers, C., Letesson, J., and Pastoret, P. (2016). Bovine viral diarrhoea virus induces apoptosis in blood mononuclear cells by a mechanism largely dependent on monocytes, (1998), 1745–1749.

Lanyon, S. R., Reichel, M. P., and Brownlie, J. (2013). Bovine viral diarrhoea : Pathogenesis and diagnosis. *The Veterinary Journal*. <http://doi.org/10.1016/j.tvjl.2013.07.024>

Larsson, B., and Niskanen, R. (1994). Natural infection with bovine virus diarrhoea virus in a dairy herd : A spectrum of symptoms including early reproductive failure and retained placenta. *Animal Reproduction Science*, 36, 37–48.

Laureyns, J., Piepers, S., Ribbens, S., Sarrazin, S., De Vliegher, S., Van Crombrugge, J.M., Dewulf, J. (2013). Association between herd exposure to BVDV-infection and bulk milk somatic cell count of Flemish dairy farms. *Preventive Veterinary Medicine* 109, 148-151.

Liess, B., Orban, S., Frey, H., Trautwein, G., Wiefel, W., and Blindow, H. (1990). Studies On Transplacental Transmissibility of a Bovine Virus Diarrhoea (Bvd) Vaccine Virus. *Zbl Vet Med B* (1983) 30 619-634, 81.

Linberg , A., and Houe, H. (2005). Characteristics in the epidemiology of bovine viral diarrhea (BVDV) of relevance to control. *Preventive Veterinary Medicine* 72, 55-73.

Loehr, B. I., Frey, H., and Moennig, V. (1998). Experimental induction of mucosal disease : consequences of superinfection of persistently infected cattle with different strains of cytopathogenic bovine viral diarrhea virus. *Archives of Virology*, 143, 667–679.

Lucia, S., Ryde, W., and Wales, N. S. (2013). Bovine viral diarrhoea virus in beef heifers in commercial herds in Australia: mob-level seroprevalences and incidences of seroconversion, and vaccine efficacy. *Australian Veterinary Journal*, 91(12), 517–524. <http://doi.org/10.1111/avj.12129>.

Machado, G., Egocheaga, R. M. F., Hein, H. E., Miranda, I. C. S., Neto, W. S., and Almeida, L. L. (2014). Bovine Viral Diarrhoea Virus ( BVDV ) in Dairy Cattle : A Matched Case – Control Study. *Transboundary and Emerging Diseases*, 1–13. <http://doi.org/10.1111/tbed.12219>

- Mahmoodi, P., Reza, M., Abad, S., and Ghorbanpour, M. (2015). Simple Indirect Enzyme-Linked Immunosorbent Assay to Detect Antibodies Against Bovine Viral Diarrhea Virus , Based on Prokaryotically Expressed Recombinant MBP-NS3 Protein. *Jundishapur J Microbiol*, 8(3), 1–5. <http://doi.org/10.5812/jjm.14311>.
- Mainar-Jaime, R., Arias, P., Herranz, B., and Varquez, R. (2001). Epidemiological pattern and risk factors associated with bovine viral-diarrhoea virus ( BVDV ) infection in a non-vaccinated dairy-cattle population from the Asturias region of Spain. *Preventive Veterinary Medicine*, 52, 63–73.
- Martin, S. W., Meek, A. H., and Willeberg, P. (1987). *Veterinary Epidemiology-Principles and Methods* (First Edit). Ames: Iowa State University Press.
- McClurkin, A. W., Littledike, E. T., Cutlip, R. C., Frank, G. H., Coria, M. F., and Bolin, S. R. (1984). Production of cattle immunotolerant to bovine viral diarrhea virus. *Canadian Journal of Comparative Medicine : Revue Canadienne de Médecine Comparée*, 48(2), 156–61.
- McCluskey, B.J., (2002). Biosecurity for arthropod-borne diseases. *Veterinary Clinics of North America-Food Animal Practice* 18, 202-2015.
- McGowan, M., Kirkland, P., Rodwell, B., Kerr, D., and Carroll, C. (1993). A Field Investigation Of The Effects Of Bovine Viral Diarrhea. *Theriogenology*, 39, 443–449.
- McGowan, M. R., and Kirkland, P. D. (1995). Review Early Reproductive Loss Due to Bovine Pestivirus Infection. *British Veterinary Journal*, 151, 263–270.
- Meyling, A., and Jensen, A. (1988). Transmission of bovine virus diarrhoea virus (bvdv by artificial insemination ( ai ) with semen from a persistently - infect ed bull. *Veterinary Microbiology*, 17, 97–105.
- Meyling, A, Houe, H., and Jensen, A M. (1990). Epidemiology of bovine virus diarrhoea virus. *Revue Scientifique et Technique (International Office of Epizootics)*, 9(1), 75–93.
- Murray, R. D. (1990). A field investigation of causes of abortion in dairy cattle. *Vet. Rec.* 127:543–547.
- Milián-suazo, F., Hernández-ortíz, R., Hernández-andrade, L., Díaz-aparicio, E., Mejía-estrada, F., Palomares-reséndiz, E. G. Reyes, I.B., Zendejas-martínez, H. (2016). Seroprevalence and risk factors for reproductive diseases in dairy cattle in Mexico, 8(August), 89–98. <http://doi.org/10.5897/JVMAH2016.0483>.

- Mishra, N., Rajukumar, K., Tiwari, A., Nema, R. K., Behera, S. P., Satav, J. S., and Dubey, S. C. (2009). Prevalence of bovine viral diarrhoea virus (BVDV) antibodies among sheep and goats in India. *Tropical Animal Health and Production*, 41(7), 1231–1239. <http://doi.org/10.1007/s11250-009-9305-z>.
- Mockeliuniene, V., Šalomska, A., Mockeli, R., and Petkevič, S. (2004). Prevalence and epidemiological features of bovine viral diarrhoea virus infection in Lithuania. *Veterinary Microbiology*, 99, 51–57. <http://doi.org/10.1016/j.vetmic.2003.11.008>.
- Moennig, V., and Liess, B. (1995). Pathogenesis Of Intrauterine Infections With Bovine Viral. *Veterinary Clinics of North America: Food Animal Practice*, 11(3), 477–487. [http://doi.org/10.1016/S0749-0720\(15\)30462-X](http://doi.org/10.1016/S0749-0720(15)30462-X).
- Moerman, a, Straver, P. L., Dejong, M. C. M., Quak, J., Baanvinger, T., and Van Oirschot, J. T. (1994). Clinical consequences of a bovine virus diarrhoea virus infection in a dairy herd, a longitudinal study. *Veterinary Quarterly*, 16(2), 115–119. <http://doi.org/10.1080/01652176.1994.9694430>.
- Moffett, D. A., Division, V. S., Road, S., Ireland, N., and Janeiro, R. De. (1997). Short Paper Bovine Viral Diarrhoea Virus Infection in Bone Marrow of Experimentally Infected Calves. *J Comp Path*, 116, 97–100.
- McCluskey, B.J., 2002. Biosecurity for arthropod-borne diseases. *Veterinary Clinics of North America-Food Animal Practice* 18, 99-114.
- Muhammad, D., Raufdan, F., dan Yudiastyas, D. (2004). Situasi Kasus Bovine Viral Diare Pada Sapi di Sulawesi Selatan Tahun 2004. *Bulletin Informasi Kesehatan Hewan Dan Kesehatan Masyarakat Veteriner*, 2(1), 12–16.
- Müller-Doblies, D., Arquint, A., Schaller, P., Heegaard, P. M. H., Hilbe, M., Albin, S., Abril, C., Tobler, K., Ehrensperger, F., Peterhans, E., Ackermann, M., and Metzler, A. (2004). Innate immune responses of calves during transient infection with a noncytopathic strain of Bovine Viral Diarrhoea Virus. *Clinical and Diagnostic Laboratory Immunology*, 11(2), 302–312. <http://doi.org/10.1128/CDLI.11.2.302>.
- Muñoz-zanzi, C. A., Thurmond, M. C., Johnson, W. O., and Hietala, S. K. (2002). Predicted ages of dairy calves when colostrum- derived bovine viral diarrhoea virus antibodies or interfere with vaccination, 221(5).
- Murphy, F., Gibbs, E., Horzinek, M., and Studdert, M. (1999). *Veterinary Virology (Third Edit)*. San Diego: Academic Press.
- Neill, J. D. (2013). Molecular biology of bovine viral diarrhoea virus. *Biologicals : Journal of the International Association of Biological Standardization*, 41(1), 2–7. <http://doi.org/10.1016/j.biologicals.2012.07.002>.

- Nettleton, P. F., and Entrican, G. (1995). Ruminant Pestivirus. *British Veterinary Journal*, 151, 615–642.
- Nickell, J. S., White, B. J., Larson, R. L., Renter, D. G., Roque, J., Hesse, R., Oberst, R., Peddireddi, L., Anderson, G. (2009). Onset and duration of transient infections among antibody- Diverse beef calves exposed to a bovine viral diarrhea virus persistently infected calf. *International Journal of Applied Research in Veterinary Medicine*, 9(1–2), 29–39.
- Niskanen, R., Emanuelsonb, U., Sundberg, J., Larssonb, B., and Alenius, S. (1995). Effects of infection with bovine virus diarrhoea virus on health and reproductive performance in 2 13 dairy herds in one county in Sweden. *Preventive Veterinary Medicine*, 23(94), 229–237.
- Niskanen, R., and Lindberg, A. (2003). Transmission of Bovine Viral Diarrhoea Virus by Unhygienic Vaccination Procedures , Ambient Air , and from Contaminated Pens. *The Veterinary Journal*, 233(2), 125–130. [http://doi.org/10.1016/S1090-0233\(02\)00161-2](http://doi.org/10.1016/S1090-0233(02)00161-2).
- Ohmann, H. B. (1990). Electron microscopy of bovine virus diarrhoea virus. *Revue Scientifique et Technique (International Office of Epizootics)*, 9(1), 61–73. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/1966727>.
- OIE. (2015). Bovine Viral Diarrhoea-OIE Terrestrial Manual. Diakses 24 Oktober 2016 Pukul 09.13. Retrieved from [http://www.oie.int/fileadmin/Home/eng/Health\\_standards/tahm/2.04.07\\_BVD.pdf](http://www.oie.int/fileadmin/Home/eng/Health_standards/tahm/2.04.07_BVD.pdf)
- Passler, T., and Walz, P. H. (2010). Bovine viral diarrhea virus infections in heterologous species. *Animal Health Research Reviews / Conference of Research Workers in Animal Diseases*, 11(2), 191–205. <http://doi.org/10.1017/S1466252309990065>.
- Paton, D. J., Brockman, S., and Wood, L. (1990). Insemination Of Susceptible And Preimmunized. *British Veterinary Journal*, 146, 1984–1987.
- Paton, D. J., Iбата, G., Edwards, S., and Wensvoort, G. (1991). An ELISA detecting antibody to conserved pestivirus epitopes. *Journal of Virological Methods*, 31, 315–324.
- Pellerin, C., Moir, S., Lecomte, J., and Tijssen, P. (1995). Comparison of the p125 coding region of bovine viral diarrhea viruses. *Veterinary Microbiology*, 45(1), 45–57. [http://doi.org/10.1016/0378-1135\(94\)00117-F](http://doi.org/10.1016/0378-1135(94)00117-F).
- Peterhans, E., Bachofen, C., Stalder, H., and Schweizer, M. (2010). Cytopathic bovine viral diarrhea viruses (BVDV): Emerging pestiviruses doomed to extinction. *Veterinary Research*, 41(6). <http://doi.org/10.1051/vetres/2010016>.

- Peterhans, E., Jungi, T. W., and Schweizer, M. (2003). BVDV and innate immunity, 31, 107–111. [http://doi.org/10.1016/S1045-1056\(03\)00024-1](http://doi.org/10.1016/S1045-1056(03)00024-1).
- Pillars, R. B., and Grooms, D. L. (2002). Serologic evaluation of five unvaccinated heifers to detect herds that have cattle persistently infected with bovine viral diarrhea virus, 63(4).
- Potgieter, L. N. D. (1995). Immunology Of Bovine Viral Diarrhea Virus. *Veterinary Clinics of North America: Food Animal Practice*, 11(3), 501–520. [http://doi.org/10.1016/S0749-0720\(15\)30464-3](http://doi.org/10.1016/S0749-0720(15)30464-3).
- Prastyowati, A. (2015). Deteksi dan identifikasi infeksi persisten bovine viral diarrhea virus dalam kelompok sapi perah. Tesis. Universitas Gadjah Mada. Yogyakarta.
- Pypers, A. R., Holm, D. E., and Williams, J. H. (2011). Fatal congenital anaplasmosis associated with bovine viral diarrhoea virus ( BVDV ) infection in a crossbred calf. *Journal of the South African Veterinary Association*, 82, 179–182.
- Qu, L. I. N., and Mullan, L. K. M. C. (2001). Isolation and Characterization of Noncytopathic Pestivirus Mutants Reveals a Role for Nonstructural Protein NS4B in Viral Cytopathogenicity. *Journal of Virology*, 75(22), 10651–10662. <http://doi.org/10.1128/JVI.75.22.10651>.
- Radostits, O., Gay, C., Hinchcliff, K., and Constable, P. (2006). *Veterinary Medicine A textbook of the diseases of cattle, horses, sheep, pigs and goats* (10th ed.). London: Saunders Elseiver.
- Rchambaulta, D. A., Éliveaua, C. B., Outureb, Y. C., and Armanc, S. C. (2000). Clinical response and immunomodulation following experimental challenge of calves with type 2 noncytopathogenic bovine viral diarrhea virus. *Vet Res*, 31, 215–227.
- Reed, K. E., Gorbalenya, A. E., and Rice, C. M. (1998). The NS5A / NS5 Proteins of Viruses from Three Genera of the Family Flaviviridae Are Phosphorylated by Associated Serine / Threonine Kinases. *Journal of Virology*, 72(7), 6199–6206.
- Renshaw, R. W., Ray, R., and Dubovi, E. J. (2000). Comparison of Virus Isolation and Reverse Transcription Polymerase Chain Reaction Assay for Detection of Bovine Viral Diarrhea Virus in Bulk Milk Tank Samples. *J Vet Diagn Invest*, 186, 184–186.
- Ridpath, J. F. (2003). BVDV genotypes and biotypes: Practical implications for diagnosis and control. *Biologicals*, 31(2), 127–131. [http://doi.org/10.1016/S1045-1056\(03\)00028-9](http://doi.org/10.1016/S1045-1056(03)00028-9).



- Robert, A., Beaudeau, F., Seegers, H., Joly, A., and Philipot, J. M. (2004). Large Scale assessment of the effect associated with bovine viral diarrhoea virus infection on fertility of dairy cows in 6149 dairy herds in Brittany ( Western France ), 61, 117–127. [http://doi.org/10.1016/S0093-691X\(03\)00182-1](http://doi.org/10.1016/S0093-691X(03)00182-1).
- Rüfenacht, J., Schaller, P., Audigé, L., Knutti, B., Küpfer, U., and Peterhans, E. (2001). The effect of infection with bovine viral diarrhoea virus on the fertility of Swiss dairy cattle. *Theriogenology*, 56(2), 199–210. [http://doi.org/10.1016/S0093-691X\(01\)00556-8](http://doi.org/10.1016/S0093-691X(01)00556-8).
- Rumenapf, T., Unger, G., and Strauss, J. H. (1993). Processing of the Envelope Glycoproteins of Pestiviruses, 67(6), 3288–3294.
- Rustamadji, B., Ahmadi, Kustono, Sutarno T. 2007. Kinerja usaha peternakan sapi perah rakyat sebagai tulang punggung pembangunan persusuan nasional. Paper. Disampaikan pada Lokakarya Persusuan Nasional Dies 28 Fapet UGM. Yogyakarta.
- Saa, L. R., Perea, A., García-bocanegra, I., Arenas, A. J., Jara, D. V., Ramos, R., and Carbonero, A. (2012). Seroprevalence and risk factors associated with bovine viral diarrhoea virus ( BVDV ) infection in non-vaccinated dairy and dual purpose cattle herds in Ecuador. *Tropical Animal Health Production*, 44, 645–649. <http://doi.org/10.1007/s11250-011-9948-4>
- Saino, H., Watanabe, H., and Ikehata, T. (1994). Immunoperoxidase Prosedures for Rapid Detection of Bovine Viral Diarrhea-Mucosal Disease Virus Antigen. *Journal Veterinary Medicine Science*, 56, 805–807.
- Saliki, J. T., and Dubovi, E. J. (2004). Laboratory diagnosis of bovine viral diarrhoea virus infections. *Vet. Clin. North Am. Food Anim. Pract.*, 20, 69–83. <http://doi.org/10.1016/j.cvfa.2003.11.005>.
- Saliki, J. T., Fulton, R. W., Hull, S. R., and Dubovi, E. J. (1997). Microtiter Virus Isolation and Enzyme Immunoassays for Detection of Bovine Viral Diarrhoea Virus in Cattle Serum. *Journal of Clinical Microbiology*, 35(4), 803–807.
- Salisbury, G. W. dan VanDemark. 2002. Fisiologi Reproduksi dan Inseminasi Buatan pada Sapi. Gadjahmada University Press, Yogyakarta.
- Sandvik, T. (1999). Laboratory diagnostic investigations for bovine viral diarrhoea virus infections in cattle. *Veterinary Journal*, 64(1), 123–134.
- Sandvik, T. (2005). Selection and use of laboratory diagnostic assays in BVD control programmes. *Preventive Veterinary Medicine*, 72, 3–16. <http://doi.org/10.1016/j.prevetmed.2005.08.015>.

- Santhia, K., Dibia, N., Purnatha, N., Sutami, N dan Ardana, I. (1992). Survei serologis antibodi bovine viral diarrhea pada ternakan sapi di provinsi Bali, NTB, NTT, dan Timor Timur. *Hemera Zoa*, 76(2), 10–17.
- Sentsui, H., Nishimori, T., Kirisawa, R., and Morooka, A. (2001). Mucosal disease induced in cattle persistently infected with bovine viral diarrhea virus by antigenically different cytopathic virus. *Archives of Virology*, 146(5), 993–1006. <http://doi.org/10.1007/s007050170131>.
- Schlafer, D.H., Gillespie, J.H., Foote, R.H., Quick, S., Pennow, N.N., Dougherty, E.P., Schiff, E.I., Allen, S.E., Powers, P.A., Hall, C.E., and Voss, H., (1990). Experimental transmission of bovine viral diseases by insemination with contaminated semen or during embryo transfer. *Dtsch. Tierarztl. Wochenschr.* 97, 68–72.
- Swasthikawati, Sri. (2015). Identifikasi dan Diferensiasi Infeksi Virus Bovine Viral Diarrhea Secara Serologis. Tesis. Universitas Gadjah Mada.
- Stokstad, M., and Loken, T. (2002). Pestivirus in Cattle : Experimentally Induced Persistent Infection in Calves. *J Vet Med*, 501, 494–501.
- Sudarisman. (2010). Infeksi Virus Bovine Viral Diarrhoea ( BVD ) Pada Sapi Di Lapangan. Prosiding Seminar Nasional Teknologi Peternakan Dan Veteriner 2010.
- Supriyadi, A. (2010). Bovine viral diarrhea virus pada sapi Bali (*Bos Sondaicus*) di Kabupaten Penajam Paser Utara Kalimantan Timur. Tesis. Universitas Gadjah Mada. Yogyakarta.
- Talafha, A., Hirche, S., Ababneh, M., and Al-Majali, A. (2009). Prevalence and risk factors associated with bovine viral diarrhea virus infection in dairy herds in Jordan. *Tropical Animal Health Production*, 41, 499–506. <http://doi.org/10.1007/s11250-008-9214-6>.
- Tarry, D.W., Bernal, L., Edwards, S., 1991. Transmission of bovine virus diarrhea virus by blood feeding flies. *Veterinary Record* 128, 82-84.
- Tellinghuisen, T. L., Paulson, M. S., and Rice, C. M. (2006). The NS5A Protein of Bovine Viral Diarrhea Virus Contains an Essential Zinc-Binding Site Similar to That of the Hepatitis C Virus NS5A Protein. *Journal of Virology*, 80(15), 7450–7458. <http://doi.org/10.1128/JVI.00358-06>.
- Thompson, J. A., Leite, R. dMH, Goncalves, V. S. P., Leite, R. C. eite, Bandeira, D. A., Herrmann, G. P., Moreira, E.C., Prado, P.E.F., Lobato, Z.I.P., de Brito, C.P.T., and Lage, A. P. (2006). Spatial hierarchical variances and age covariances for seroprevalence to *Leptospira interrogans* serovar hardjo , BoHV-1 and BVDV for cattle in the State of Paraiba, Brazil. *Preventive*

Veterinary Medicine, 76, 290–301.  
<http://doi.org/10.1016/j.prevetmed.2006.05.010>.

Thrusfield, M. (2005). *Veterinary Epidemiology* (Third Edit). Iowa, USA: Blackwell Publishing Professional.

Thurmond, M. (2005). *Virus Transmission*. In Goyal, SM ; Ridpath, JF. *Bovine Viral Diarrhea Virus Diagnosis, Management and Control* (First Edit). Iowa: Blackwell Publishing Professional.

Toelihere M. R. (1993) *Inseminasi Buatan pada Ternak*. Angkasa. Bandung

Traven, M., Alenius, S., Fossum, C., and Larsson, B. (1991). Primary Bovine Viral Diarrhoea Virus Infection in Calves Following Direct Contact with a Persistently Viraemic Calf. *Journal Veterinary Medicine*, 38, 453–462.

Tsuboi, T., Osawa, T., Kimura, K., Kubo, M., and Haritani, M. (2011). Experimental Infection Of Early Pregnant Cows With Bovine Viral Diarrhea Virus: Transmission Of Virus To The Reproductive Tract And Conceptus. *Research in Veterinary Science*, 90(1), 174–178.  
<http://doi.org/10.1016/j.rvsc.2010.04.024>.

Valle, P. S., Martin, S. W., Tremblay, R., and Bateman, K. (1999). Factors associated with being a bovine-virus diarrhoea ( BVD ) seropositive dairy herd in the Møre and Romsdal County of Norway. *Preventive Veterinary Medicine*, 40(1), 165–177.

Vilcek, S., Durkovic, B., and Kolesarova, M. (2005). Genetic diversity of BVDV : Consequences for classification and molecular epidemiology, 72, 31–35.  
<http://doi.org/10.1016/j.prevetmed.2005.08.004>.

Waage, S. (2000). Influence of new infection with bovine virus diarrhoea virus on udder health in Norwegian dairy cows, 43, 123–135.

Wang, F. I., Deng, M. C., Huang, Y. L., and Chang, C. Y. (2015). Structures and functions of pestivirus glycoproteins: Not simply surface matters. *Viruses*, 7(7), 3506–3529. <http://doi.org/10.3390/v7072783>.

Weersink, A., Vanleeuwen, J. A., Chi, J., and Keefe, G. P. (2002). Direct Production Losses and Treatment Costs due to Four Dairy Cattle Diseases, 14, 55–75.

Weinstock, D., Bhudevi, B., and Castro, A. E. (2001). Single-Tube Single-Enzyme Reverse Transcriptase PCR Assay for Detection of Bovine Viral Diarrhea Virus in Pooled Bovine Serum. *Journal of Clinical Microbiology*, 39(1), 343–346. <http://doi.org/10.1128/JCM.39.1.343>.

- Welsh, M. D., Adair, B. M., and Foster, J. C. (1995). Effect of BVD virus infection on alveolar macrophage functions. *Veterinary Immunology and Immunopathology*, 46, 195–210.
- Widiasih, D. A., and Budiharta, S. (2011). *Epidemiologi Zoonosis Di Indonesia*. Yogyakarta: Gadjah Mada University Press.
- Wiskerchen, M., Belzer, S. K., and Collett, M. S. (1991). Pestivirus Gene Expression : the First Protein Product of the Bovine Viral Diarrhea Virus Large Open Reading Frame , p20 , Possesses Proteolytic Activity \_ D. *Journal of Virology*, 65(8), 4508–4514.
- Wiyono, A., Ronohardjo, P., Graydon, R., and Daniels, P. (1989). Diare Ganas Sapi: I. Kejadian penyakit pada sapi Bali bibit asal Sulawesi Selatan yang baru tiba di Kaliamantan Barat. *Penyakit Hewan XXI*, XXI, 38.
- Zainudin, M., and Ihsan, M. N. (2013). Efisiensi reproduksi sapi perah PFH pada berbagai umur di CV . Milkindo Berka Abadi Desa Tegalsari Kecamatan Kepanjen, 24(3), 32–37.
- Zimmer, G. M., Maanen, C. Van, Goey, I. De, Brinkhof, J., and Wentink, G. H. (2004). The effect of maternal antibodies on the detection of bovine virus diarrhoea virus in peripheral blood samples, 100, 145–149. <http://doi.org/10.1016/j.vetmic.2004.03.008>.
- Zimmer, G., Schoustra, W., Graat, E. A. M., Service, A. H., Veterinary, Q., and Group, E. (2002). Predictive values of serum and bulk milk sampling for the presence of persistently infected BVDV carriers in dairy herds, 75–82. <http://doi.org/10.1053/rvsc.2001.0526>