

DAFTAR PUSTAKA

- Agustina, D.K. 2011. Budidaya sapi sonok di Kecamatan Waru - Pamekasan. *Maduranch J. Ilmu Peternak*. 8: 41–51.
- Al-amin, A.F., H. Madi, dan S. Sri. 2017. Faktor-faktor yang memengaruhi calving interval sapi perah pada peternakan rakyat di beberapa kabupaten/kota Provinsi Lampung. *J. Ris. dan Inov. Peternak*. 1: 33–36.
- Almeida, S.E.M., E.A. Almeida, J.C.F. Moraes, dan T.A. Weimer. 2003. Molecular markers in the LEP gene and reproductive performance of beef cattle. *J. Anim. Breed. Genet*. 120: 106–113.
- Anugratama, L.E., dan T. Hartatik. 2020. Short communication: Identification of leptin gene in crossbred beef cattle. *Biodiversitas* 21: 226–230.
- Atabany, A., B.P. Purwanto, T. Toharmat, dan A. Anggraeni. 2011. Hubungan masa kosong dengan produktivitas pada Sapi Perah Friesian Holstein di Baturraden, Indonesia. *Media Peternak*. 34: 77–82.
- Biscarini, F., E.L. Nicolazzi, A. Stella, P.J. Boettcher, dan G. Gandini. 2015. Challenges and opportunities in genetic improvement of local livestock breeds. *Front. Genet*. 6: 1–7.
- Boer, I.J.M. de, dan E.A.M. Bokkers. 2013. *Systems Approach in Animal Sciences (SAAS, APS-20806)*. Wageningen University.
- BPS Kabupaten Pamekasan. 2018. *Kabupaten Pamekasan Dalam Angka (Pamekasan Regency in Figure) 2018*. BPS Kabupaten Pamekasan, Pamekasan.
- BSN. 2013. *Bibit sapi potong – Bagian 2 : Madura*. Badan Standardisasi Nasional, Jakarta.
- Buchanan, F.C., A.G. Van Kessel, Y.R. Boisclair, H.C. Block, dan J.J. McKinnon. 2007. The leptin arg25cys affects performance, carcass traits and serum leptin concentrations in beef cattle. *Can. J. Anim. Sci*. 87: 153–156.
- Budisatria, I.G.S., B. Guntoro, A.E.T. Sulfiar, A. Ibrahim, dan B.A. Atmoko. 2021. Reproductive management and performances of Bali cow kept by smallholder farmers level with different production systems in South Konawe Regency, Indonesia. *IOP Conf. Ser. Earth Environ. Sci*. 782: 022079.
- Budisatria, I.G.S., dan H.M.J. Udo. 2013. Goat-based aid programme in Central Java: An effective intervention for the poor and vulnerable? *Small Rumin. Res*. 109: 76–83.
- Carter, A.J.R., J. Hermisson, dan T.F. Hansen. 2005. The role of epistatic gene interactions in the response to selection and the evolution of evolvability. *Theory Popul. Biol*. 68: 179–196.

- Chebel, R.C., dan J.E.P. Santos. 2011. Association between leptin single nucleotide polymorphism and reproductive performance of lactating Holstein cows. *Anim. Reprod. Sci.* 127: 126–134.
- Chebel, R.C., F. Susca, dan J.E.P. Santos. 2008. Leptin genotype is associated with lactation performance and health of Holstein Cows. *J. Dairy Sci.* 91: 2893–2900.
- Chen, J.M., C.L. Stull, D.N. Ledgerwood, dan C.B. Tucker. 2017. Muddy conditions reduce hygiene and lying time in dairy cattle and increase time spent on concrete. *J. Dairy Sci.* 100: 2090–2103.
- Cherkoes, A.M., dan Z. Mekuria. 2018. Factor affecting calving interval of dairy cows in central highlands of Ethiopia. *J. Biol. Agric. Healthc.* 8: 71–76.
- Corva, P.M., G.V.F. Macedo, dan L.A. Soria. 2009. Effect of leptin gene polymorphisms on growth , slaughter and meat quality traits of grazing Brangus steers. *Genet. Mol. Res.* 8: 105–116.
- Csaki, C. 2009. Global, regional and local challenges in Hungarian Agriculture. *Soc. Econ.* 31: 45–70.
- D'Ambrosio, J., F. Phocas, P. Haffray, A. Bestin, S. Brard-Fudulea, C. Poncet, E. Quillet, N. Dechamp, C. Fraslin, M. Charles, dan M. Dupont-Nivet. 2019. Genome-wide estimates of genetic diversity, inbreeding and effective size of experimental and commercial rainbow trout lines undergoing selective breeding. *Genet. Sel. Evol.* 51: 1–15.
- Dar, M.R., M. Singh, S. Thakur, dan A. Verma. 2021. Exploring the relationship between polymorphisms of leptin and IGF - 1 genes with milk yield in indicine and taurine crossbred cows. *Trop. Anim. Health Prod.* 53: 413.
- Denver, R.J., M. Bonett, dan G.C. Boorse. 2011. Evolution of Leptin structure and function. *Neuroendocrinology* 94: 21–38.
- Dybus, A., W. Grzesiak, H. Kamieniecki, I. Szatkowska, Z. Sobek, B. Piotr, C.-P. Ewa, Z. Slawomir, dan M. Musynska. 2005. Association of genetic variants of bovine prolactin with milk production traits of Black-and-White and Jersey cattle. *Arch. Tierz.* 48: 149–156.
- Ewens, W.J. 2013. Genetic variation. in: Maloy, S., dan K. Hughes, ed. *Brenner's Encyclopedia of Genetics: Second Edition.* pp. 290–291 Academic Press.
- Fathoni, A., D. Maharani, R.N. Aji, R. Choiri, dan S. Sumadi. 2019. Polymorphism of the SNP g. 1180 C>T in leptin gene and its association with growth traits and linear body measurement in Kebumen Ongole Grade cattle. *J. Indones. Trop. Anim. Agric.* 44: 125–134.
- Francis, C., L. Salomonsson, G. Lieblein, dan J. Helenius. 2004. Serving multiple needs with rural landscapes and agricultural systems. in: Rickerl, D., dan C. Francis, ed. *Agroecosystems Analysis.* pp. 147–165 American Society of

Agronomy, Madison.

Friedman, J. 2014. 20 Years of Leptin. Leptin at 20 : an overview. *J. off Endocrinol.* 223: 1–8.

Giblin, L., S.T. Butler, B.M. Kearney, S.M. Waters, M.J. Callanan, dan D.P. Berry. 2010. Association of bovine leptin polymorphisms with energy output and energy storage traits in progeny tested Holstein-Friesian dairy cattle sires. *BMC Genet.* 11: 7–9.

Groeneveld, L.F., J.A. Lenstra, H. Eding, M.A. Toro, B. Scherf, D. Pilling, R. Negrini, E.K. Finlay, H. Jianlin, E. Groeneveld, dan S. Weigend. 2010. Genetic diversity in farm animals - A review. *Anim. Genet.* 41: 6–31.

Gumelar, A.P., dan R. Aryanto. 2011. Bobot badan dan ukuran tubuh sapi perah betina Fries Holland di wilayah kerja koperasi peternak Garut Selatan. *Buana Sains* 11: 163–170.

Haq, M.S., I.G.S. Budisatria, P. Panjono, dan D. Maharani. 2019. Measuring the sosial economic benefits of Jabres cattle keeping in Bantarkawung Sub-district, Brebes, Central Java, Indonesia. *J. Indones. Trop. Anim. Agric.* 44: 220–227.

Hartatik, T., D.A. Mahardika, T.S.M. Widi, dan E. Baliarti. 2009. Karakteristik dan kinerja induk sapi silangan Limousin-Madura dan Madura di Kabupaten Sumenep dan Pamekasan. *Bul. Peternak.* 33: 143–147.

Hartatik, T., D.A. Priyadi, P. Panjono, S. Bintara, I. Ismaya, I.G.S. Budisatria, B.P. Widyobroto, dan A. Agus. 2019. Association of IGFBP-3 gene polymorphism g. 3.930 G>A with birth size and birth weight in crossbred beef cattle. *J. Indones. Trop. Anim. Agric.* 44: 356–363.

Hartatik, T., T.S.M. Widi, D.T. Widayati, dan E. Baliarti. 2010. The exploration of genetic characteristics of Madura cattle. in: *International Seminar on Tropical Animal Production.* pp. 578–584

Hernández, N., J.C. Martínez-González, G.M. Parra-Bracamonte, A.M. Sifuentes-Rincón, N. López-Villalobos, S.T. Morris, F. Briones-Encinia, E. Ortega-Rivas, V.I. Pacheco-Contreras, dan L.A. Meza-García. 2016. Association of polymorphisms in growth hormone and leptin candidate genes with live weight traits of Brahman cattle. *Genet. Mol. Res.* 15.

Hilmia, N., R.R. Noor, C. Sumantri, R. Priyanto, dan E. Gurnadi. 2015. Hubungan keragaman gen Leptin dengan kualitas fisik daging sapi lokal di Ciamis. *J. Ilmu Ternak* 15: 53–60.

Hilmia, N., D. Rahmad, dan Dudi. 2019a. Association of Mutation on Exon 2 Leptin Gene With Birth Weight, Average Daily Gain And Weaning Weight of Baliness Cattle. *Ziraa'ah* 44: 91–97.

Hilmia, N., D. Rahmat, dan D. Dudi. 2018. Leptin gene polymorphism of Ongole

- Grade cattle based on single nucleotide polymorphism. *J. Indones. Trop. Anim. Agric.* 43: 309–314.
- Hilmia, N., D. Rahmat, Dudi, dan D.N. Hadi. 2019b. Single nucleotide polymorphism on exon 2 Leptin gene of Pasundan Cattle. *IOP Conf. Ser. Earth Environ. Sci.* 334: 1–6.
- Hirooka, H. 2010. Systems approaches to beef cattle production systems using modeling and simulation. *Anim. Sci. J.* 81: 411–424.
- Hollocher, H. 2016. Genetic Variation in Populations. in: Kliman, R.M., ed. *Encyclopedia of Evolutionary Biology*. pp. 144–150 Academic Press.
- Hultgren, J., dan C. Bergsten. 2001. Effects of a rubber-slatted flooring system on cleanliness and foot health in tied dairy cows. *Prev. Vet. Med.* 52: 75–89.
- Kamaliah. 2012. Polimorfisme Gen Leptin Dan Gen Miostatin pada Sapi Potong Aceh dan Madura. Institut Pertanian Bogor, Bogor.
- Kawaguchi, F., K. Okura, K. Oyama, H. Mannen, dan S. Sasazaki. 2016. Identification of leptin gene polymorphisms associated with carcass traits and fatty acid composition in Japanese Black cattle. *Anim. Sci. J.* 88: 433–438.
- Kaygisiz, A., C. Bengi, dan S. Cilek. 2011. Investigation of Leptin gene polymorphisms in East Anatolian Red Anatolian and Black Cattle and determination of genetic distance from Brown Swiss Cattle. *J. Anim. Plant Sci.* 21: 121–125.
- Kolenda, M., dan B. Sitkowska. 2021. The polymorphism in various milk protein genes in Polish holstein-friesian dairy cattle. *Animals* 11: 1–8.
- Komisarek, J. 2010. Impact of LEP and LEPR gene polymorphisms on functional traits in Polish Holstein-Friesian cattle. *Anim. Sci. Pap. Reports* 28: 133–141.
- Kong, H.S., J.D. Oh, S.G. Lee, Y.S. Hong, W.I. Song, S.J. Lee, H.C. Kim, B.H. Yoo, H.K. Lee, dan G.J. Jeon. 2006. Association of polymorphisms in the bovine leptin gene with ultrasound measurements for improving in Korean cattle. *Asian-Australasian J. Anim. Sci.* 19: 1691–1695.
- Kuehne, G. 2016. Eight issues to think about before interviewing farmers. *Forum Qual. Sozialforsch.* 17: Art. 20.
- Kuswati, K., A. Furqon, W.A. Septian, dan T. Susilawati. 2022. Polymorphism of leptin gene (single nucleotide polymorphisms c . 73T > C) and its association with body weight and body measurements in Madura cattle. *Vet. World* 15: 775–781.
- Kutsiyah, F. 2012. Analisis pembibitan sapi potong di pulau madura. *Wartazoa* 22: 113–126.
- Kutsiyah, F., Kusmartono, dan T. Susilawati. 2002. Studi komparatif produktivitas

antara Sapi Madura dan persilangannya dengan Limousin di Pulau Madura.
JITV 8: 98–106.

Kutsiyah, F., M. Zali, dan S. Nurlaila. 2017. Skenario pembibitan sapi Madura di Pulau Madura. *J. Ilmu Ternak* 17: 27–34.

Lachance, J. 2016. Hardy-Weinberg equilibrium and random mating. in: Kliman, R.M., ed. *Encyclopedia of Evolutionary Biology*. pp. 208–211 Academic Press.

Lagonigro, R., P. Wiener, F. Pilla, J.A. Woolliams, dan J.L. Williams. 2003. A new mutation in the coding region of the bovine leptin gene associated with feed intake. *Anim. Genet.* 34: 371–374.

Mappanganro, R., D.P. Rahardja, dan H. Sonjaya. 2014. Hubungan antara gen Leptin dengan skor kondisi tubuh induk Sapi Bali dan persilangannya. *J. Sains Teknol.* 14: 232–240.

Meirmans, P.G. 2018. Hardy-weinberg equilibrium. in: Fath, B., ed. *Encyclopedia of Ecology*. pp. 118–126 Elsevier Inc.

Menteri Pertanian. 2010. Keputusan Menteri Pertanian Nomor 3735/Kpts/HK.040/11/2010 Tentang Penetapan Rumpun Sapi Madura.

Mohamad, K., M. Olsson, H.T.A. Van Tol, S. Mikko, B.H. Vlamings, H. Rodri, B. Colenbrander, dan J.A. Lenstra. 2009. On the origin of Indonesian cattle. *PLoS One* 4: e5490.

Moussavi, A.H., M. Ahouei, M.R. Nassiry, dan A. Javadmanesh. 2006. Association of Leptin polymorphism with production, reproduction and plasma glucose level in Iranian Holstein Cows. *Asian-Australasian J. Anim. Sci.* 19: 627–631.

Nemecek, T., G. Gaillard, dan A. Reckenholtz-tänikon. 2010. Challenges in assessing the environmental impacts of crop production and horticulture. in: *Environmental assessment and management in the food industry*. pp. 98–116 Woodhead Publishing Limited.

Nkrumah, J.D., C. Li, J.B. Basarab, S. Guercio, Y. Meng, B. Murdoch, C. Hansen, dan S.S. Moore. 2004. Association of a single nucleotide polymorphism in the bovine leptin gene with feed intake, feed efficiency, growth, feeding behaviour, carcass quality and body composition. *Can. J. Anim. Sci.* 84: 211–219.

Nobari, K., S. Ghazanfari, M.R. Nassiry, M. Tahmoorespur, dan E. Jorjani. 2010. Relationship between leptin gene polymorphism with economical traits in Iranian Sistani and Brown Swiss Cows. *J. Anim. Vet. Adv.* 9: 2807–2810.

Nugroho, T., D. Maharani, dan T.S.M. Widi. 2019. Identifying the stakeholders and sustainability indicators for sonok breeding system. *IOP Conf. Ser. Earth Environ. Sci.* 387: 012133.

- Nurgiartiningih, V.M.A. 2011. Peta potensi genetik Sapi Madura murni di Empat Kabupaten di Madura. *J. Ternak Trop.* 12: 23–32.
- Nurlaila, S., B. Kurnadi, M. Zali, dan H. Nining. 2018. Status reproduksi dan potensi Sapi Sonok di Kabupaten Pamekasan. *J. Ilm. Peternak. Terpadu* 6: 147–154.
- Nuryadi, dan S. Wahjuningsih. 2011. Penampilan reproduksi sapi peranakan Ongole dan peranakan Limousin di Kabupaten Malang. *J. Ternak Trop.* 12: 76–81.
- Oldenbroek, K., dan L. Van Der Waaij. 2014. *Textbook Animal Breeding and Genetics for BSc Students*. Centre for Genetic Resources The Netherlands and Animal Breeding and Genomics Centre, Netherland.
- Onzima, R.B., S. Gizaw, D.R. Kugonza, J.A.M. van Arendonk, dan E. Kanis. 2018. Production system and participatory identification of breeding objective traits for indigenous goat breeds of Uganda. *Small Rumin. Res.* 163: 51–59.
- Oosting, S.J. 2002. System hierarchy and sustainable farming system development. in: Kyriazakis, I., dan G. Zervas, ed. *Organic meat and milk from ruminants*. pp. 107–110 Wageningen Academic Publishers, Athens.
- Oprzadek, J., K. Flisikowski, L. Zwierzchowski, dan E. Dymnicki. 2003. Polymorphisms at loci of leptin (LEP), Pit1 and STAT5A and their association with growth, feed conversion and carcass quality in Black-and-White bulls. *Anim. Sci. Pap. Reports* 21: 135–145.
- Orrù, L., G.F. Cifuni, E. Piasentier, M. Corazzin, S. Bovolenta, dan B. Moioli. 2011. Association analyses of single nucleotide polymorphisms in the LEP and SCD1 genes on the fatty acid profile of muscle fat in Simmental bulls. *Meat Sci.* 87: 344–348.
- Payne, W., dan D. Rollinson. 1976. Madura cattle. *Z. Timuchtg. Zuchtgsbiol.* 93: 89–100.
- Pitesky, M.E., K.R. Stackhouse, dan F.M. Mitloehner. 2009. Clearing the air: Livestock's contribution to climate change. *Adv. Agron.* 103: 1–40.
- Pohontu, A., A. Lomboan, J.F. Paath, dan S.C. Rimbing. 2018. Penampilan reproduksiternak sapi potong di Kecamatan Bintauna Kabupaten Bolaang Mongondow Utara. *Zootek J.* 38: 102–113.
- Putra, W.P.B., dan P.P. Agung. 2020. Novel Single Nucleotide Polymorphisms (SNPs) in intron 2 and exon 3 regions of Leptin gene in Sumba Ongole Cattle. *Iran. J. Appl. Anim. Sci.* 10: 241–247.
- Putra, W.P.B., P.P. Agung, dan A.S. Wulandari. 2017. Profil sekuen gen Leptin di bagian 3'flanking region pada Sapi Sumba Ongole (SO). *Bul. Peternak.* 41: 371.
- Putra, W.P.B., S. Anwar, S. Said, R.A.A. Indarto, dan P. Wulandari. 2019. Genetic

characterization of Thyroglobulin and Leptin genes in Pasundan Cattle at West Java. *Bul. Peternak*. 43: 1–7.

Putra, W.P.B., dan R. Indriastuti. 2017. Gen Leptin sebagai gen potensial untuk seleksi molekuler pada sapi di Indonesia. *Wartazoa* 27: 105–116.

Reswati, Jaswandi, dan E. Nurdin. 2014. Performa reproduksi sapi perah di Sumatera Barat. *J. Peternak. Indones*. 16: 157–165.

Rezaei, N., dan M. Hedayat. 2013. Allele frequency. in: Maloy, S., dan K. Hughes, ed. *Brenner's Encyclopedia of Genetics: Second Edition*. pp. 77–78 Elsevier Inc.

Riyanto, J., Lutojo, dan D.M. Barcelona. 2015. Kinerja reproduksi induk sapi potong pada usaha peternakan rakyat di Kecamatan Mojogedang. *Sains Peternak*. 13: 73–79.

Sari, J.M. 2019. Keragaman genetik Gen Leptin (LEP-Mspl) Ekson 3 Awal pada Sapi Pesisir dengan Menggunakan Metode PCR-RFLP. Padang.

Sari, E.M., M.A. Nashri, dan C. Hasnani. 2016. Estimasi nilai heritabilitas sifat kuantitatif Sapi Aceh. *Agripet* 16: 37–41.

Sarma, P.K., dan J.U. Ahmed. 2011. An economic study of small scale cattle fattening enterprise of Rajbari district. *J. Bangladesh Agric. Univ*. 9: 141–146.

Sharma, R., B. Kumar, R. Arora, S. Ahlawat, A.K. Mishra, dan M.S. Tania. 2016. Genetic diversity estimates point to immediate efforts for conserving the endangered Tibetan sheep of India. *Meta Gene* 8: 14–20.

Shin, S.C., dan E.R. Chung. 2007. Association of SNP marker in the Leptin gene with carcass and meat quality traits in Korean Cattle. *Asian Australas. J. Anim. Sci*. 20: 1–6.

Silver, L. 2001. Allele frequency. in: *Encyclopedia of Genetics*. pp. 37 Academic Press.

Smith, M.U., dan J.T. Baldwin. 2015. Making sense of Hardy-Weinberg Equilibrium. *Am. Biol. Teach*. 77: 577–582.

Sodiq, A., S. Suwarno, F.R. Fauziyah, Y.N. Wakhidati, dan P. Yuwono. 2017. Sistem produksi peternakan sapi potong di pedesaan dan strategi pengembangannya. *J. Agripet* 17: 60–66.

Steinfeld, H., T. Wassenaar, dan S. Jutzi. 2006. Livestock production systems in developing countries: Status, drivers, trends. *Rev. Sci. Tech*. 25: 505–516.

Suppadit, T., N. Phumkokrak, dan P. Pongsuk. 2006. The adoption of good agricultural practices for beef cattle farming of beef cattle – raising farmers in Tambon Hindard , Dan Khunthod district , Nakhon Ratchasima. *KMITL Sci. Technol. J*. 6: 67–73.

- Susilawati, T. 2017. Sapi Lokal Indonesia: Jawa Timur dan Bali. UB Press, Malang.
- Sutarno, dan A.D. Setyawan. 2015. Review : Genetic diversity of local and exotic cattle and their crossbreeding impact on the quality of Indonesian cattle. *Biodiversitas* 16: 327–354.
- Sutarno, dan A.D. Setyawan. 2016. Review : The diversity of local cattle in Indonesia and the efforts to develop superior indigenous cattle breeds. *Biodiversitas* 17: 275–295.
- Syamsu, J.A., M. Yusuf, dan A. Abdullah. 2014. Characteristics of feed mills at farmers group scale in supporting the development of beef cattle. *J. Adv. Agric. Technol.* Vol. 1: 24–27.
- Syarifulaya, N., S. Made, dan Maskur. 2015. Identifikasi keragaman gen Leptin pada Sapi Bali dan Kambing Kacang. *J. Ilmu dan Teknol. Peternak. Indones.* 1: 47–54.
- Tamou, C., I.J.M. de Boer, R. Ripoll-Bosch, dan S.J. Oosting. 2018. Understanding roles and functions of cattle breeds for pastoralists in Benin. *Livest. Sci.* 210: 129–136.
- Taniguchi, Y., T. Itoh, T. Yamada, dan Y. Sasaki. 2002. Genomic structure and promoter analysis of the Bovine Leptin gene. *IUBMB Life* 53: 131–135.
- Templeton, A.R. 2021. Modeling evolution and the Hardy–Weinberg Law. *Popul. Genet. Microevolutionary Theory*, Second Ed.: 17–44.
- Teufel, N., A. Markemann, B. Kaufmann, A. Valle Zárate, dan J. Otte. 2010. Livestock Production Systems in South Asia and the Greater Mekong Sub-Region. Food and Agriculture Organization, Rome.
- Tonbesi, T.T., N. Ngadiyono, dan Sumadi. 2011. Estimasi potensi dan kinerja sapi bali di kabupaten timor tengah utara, propinsi nusa tenggara timur. *Bul. Peternak.* 33: 30–39.
- Trakovická, A., N. Moravčíková, dan R. Kasarda. 2013. Genetic polymorphisms of leptin and leptin receptor genes in relation with production and reproduction traits in cattle. *Acta Biochim. Pol.* 60: 783–787.
- Traoré, S.A., A. Markemann, C. Reiber, H.P. Piepho, dan A. Valle Zárate. 2017. Production objectives, trait and breed preferences of farmers keeping N'Dama, Fulani Zebu and crossbred cattle and implications for breeding programs. *Animal* 11: 687–695.
- Wang, Y., D. Segelke, R. Emmerling, J. Bennewitz, dan R. Wellmann. 2017. Long-term impact of optimum contribution selection strategies on local livestock breeds with historical introgression using the example of German Angler Cattle. *G3 Genes, Genomes, Genet.* 7: 4009–4018.
- Widi, T.S.M. 2014. Mapping the impact of crossbreeding in smallholder cattle

systems in Indonesia. Netherland.

Widi, T.S.M., H.M.J. Udo, K. Oldenbroek, I.G.S. Budisatria, E. Baliarti, dan A.J. Van Der Zijpp. 2014. Unique cultural values of Madura cattle : is cross-breeding a threat? *Anim. Genet. Resour.* 54: 141–152.

Widi, T.S.M., H.M.J. Udo, K. Oldenbroek, I.G.S. Budisatria, E. Baliarti, A.J. Van Der Zijpp, dan S.M. Widi. 2015. Is crossbreeding of cattle beneficial for mixed farming systems in Central Java? *Anim. Genet. Resour.* 56: 127–144.

Widiati, R., dan T.S.M. Widi. 2016. Production systems and income generation from the smallholder beef cattle farming In Yogyakarta Province, Indonesia. *Anim. Prod.* 18: 51–58.

Widyas, N., S. Prastowo, R. Haryanto, T. Nugroho, dan T.S.M. Widi. 2019. Madura cattle stratification as a signature of traditional selection and diverse production systems. *IOP Conf. Ser. Earth Environ. Sci.* 387: 012120.

Wijono, D.B., dan B. Setiadi. 2004. Potensi dan keragaman sumberdaya genetik sapi Bali. *Wartazoa* 14: 107–115.

Woronuk, G.N., F.L. Marquess, S.T. James, J. Palmer, T. Berryere, H. Deobald, S. Howie, dan P.J. Kononoff. 2012. Association of leptin genotypes with beef cattle characteristics. *Anim. Genet.* 43: 608–610.

Wright, A.F. 2005. Genetic variation : Polymorphisms and mutations. in: *Encyclopedia Of Life Sciences*. pp. 0005005 John Wiley & Sons, Ltd.

Xia, X., dan C.R. Primmer. 2013. Genotypic frequency. in: *Brenner's Encyclopedia of Genetics: Second Edition*. pp. 319–320 Academic Press.

Yanez-Ruiz, D.R., dan A.I. Martin-Garcia. 2016. Non-cow milk production: The greenhouse-gas emissions and climate change. in: *Non-Bovine Milk and Milk Products*. pp. 15–38 Elsevier Inc.

Yang, D., H. Chen, X. Wang, Z. Tian, L. Tang, Z. Zhang, C. Lei, L. Zhang, dan Y. Wang. 2007. Association of polymorphisms of leptin gene with body weight and body sizes indexes in Chinese Indigenous cattle. *J. Genet. genomics* 34: 400–405.

Yoon, D.H., B.H. Cho, B.L. Park, Y.H. Choi, H.S. Cheong, H.K. Lee, E.R. Chung, I.C. Cheong, dan H.D. Shin. 2005. Highly polymorphic bovine leptin gene. *Asian-Australasian J. Anim. Sci.* 18: 1548–1551.

Yuliani, E., dan S. Prasetyo. 2016. Respon tingkah laku birahi, service per conception, non return rate, conception rate pada Sapi Bali Dara dan induk yang disinkronisasi birahi dengan hormon Progesteron. *Indones. J. Anim. Sci. Technol.* 2: 134–143.

Zainudin, M., M.N. Ihsan, dan Suyadi. 2013. Efisiensi reproduksi sapi perah PFH pada berbagai umur di CV . Milkindo Berka Abadi Desa Tegalsari Kecamatan

Kepanjen. J. Ilmu-Ilmu Peternak. 24: 32–37.

Zewdu, W., B.M. Thombre, dan D. V Bainwad. 2015. Studies on some non-genetic factors affecting reproductive performance of Holstein Friesian Deoni crossbred cows. African J. Agric. Res. 10: 1508–1516.