

## DAFTAR PUSTAKA

- Agha, S.H., Pilla, F., Galal, S., Shaat, I., Andrea, M.D., Reale, S., Abdelsalam, A.Z.A., Li, M.H., 2008. Genetic diversity in Egyptian and Italian goat *breeds* measured with microsatellite polymorphism. *J. Anim. Breed. Genet.* 125, 194–200.
- Alados, C. L. 1985. An analysis of vigilance in the Spanish ibex (*Capra pyrenaica*). *Zeitschrift für Tierpsychologie*, 68(1), 58-64.
- Ausubel, F.M., 1995. Short Protocols in Molecular Biology. Wiley, Chichester.
- Aziz, M.A., 2010. Present status of the world goat populations and their productivity. *Lohmann Inform.*, 45: 42-52.
- Badaoui, B., M. D'Andrea, F. Pilla, J. Capote and A. Zidi et al., 2011. Polymorphism of the goat agouti signaling protein gene and its relationship with coat color in Italian and Spanish *breeds*. *Biochem. Genet.*, 49: 523-532.
- Barker, J.S.F., S.G. Tan, S.S. Moore, T.K. Mukherjee, J.L. Matheson and O.S. Selvaraj. 2001. Genetic variation within and relationship among population of Asian goats (*Capra hircus*). *J. Anim. Breed. Genet.* 118: 213-233.
- Batari Sangti (Ompu Buntulan Simanjuntak). 1978. Sejarah Batak. Karl Sianipar Company. Balige. Sumatera Utara.
- Batubara, A. 2007. Tujuh Plasma Nutfah Kambing Lokal Indonesia. *Artikel. Sinar Tani Edisi*, 25.
- Batubara, A., 2011. [Phenotypic and genetic diversity study of some sub-populations of local goat Indonesia and sustainable use strategy]. Ph.D. Thesis, Bogor Agricultural University, Indonesia, (In Indonesian).
- Batubara, A., R.R. Noor, A. Farajallah and B. Tiesnamurti, 2013. Keragaman genetik DNA Y-kromosom pada enam rumpun kambing lokal Indonesia. Proceedings of the Seminar Nasional Teknologi Peternakan dan Veteriner, September 3-5, 2013, IAARD Press, Pasarminggu, Jakarta, pp: 316-325.
- Benirschke, K., H. Soma and T. Ito, 1972. The chromosomes of the Japanese serow, *Capricornis crispus* (Temminck). *Proc. Jpn. Acad.*, 48: 608-612.
- Birungi, J. and P. Arctander, 2001. Molecular systematics and phylogeny of The reduncini (Artiodactyla: Bovidae) inferred from the analysis of mitochondrial cytochrome b gene sequences. *J. Mammal. Evol.*, 8: 125-147.

- Blott, S., Kim, J. J., Moision, S., Schmidt-Küntzel, A., Cornet, A., Berzi, P., and Coppieters, W. 2003. Molecular dissection of a quantitative trait locus: a phenylalanine-to-tyrosine substitution in the transmembrane domain of the bovine growth hormone receptor is associated with a major effect on milk yield and composition. *Genetics*, 163(1), 253-266.
- Bowling, A.T., A. del Valle and M. Bowling, 2000. A pedigree-based study of mitochondrial D-loop DNA sequence variation among Arabian horses. *Anim. Genet.*, 31: 1-7.
- Brinkman, F. S., & Leipe, D. D. (2001). Phylogenetic analysis. *Bioinformatics: a practical guide to the analysis of genes and proteins*, 2, 349.
- Brown, G.G., G. Gadaleta, G. Pepe. C. Saccone and E. Sbisà, 1986. Structural conservation and variation in the D-loop-containing region of vertebrate mitochondrial DNA. *J. Mol. Biol.*, 192: 503-511.
- Bruford, M. W., & Wayne, R. K. 1993. Microsatellites and their application to population genetic studies. *Current opinion in genetics & development*, 3(6), 939-943.
- Budisatria, I.G.S. 2006. Dynamics of Small Ruminant Development in Central Java, Indonesia. Phd. Thesis. Wageningen University, The Netherlands.
- Budisatria, I.G.S., H.M.J. Udo, A.J. van der Zijpp, E. Baliarti and T.W. Murti, 2008. Religious festivities and marketing of small ruminants in central Java-Indonesia. *Asian J. Agric. Dev.*, 5: 57-73.
- Bulut, Z., Kurar, E., Ozsensoy, Y., Altunok, V., & Nizamlioglu, M. (2016). Genetic Diversity of eight domestic goat populations raised in Turkey. *BioMed research international*, 2016.
- Canon, J., D. Garcia, M.A. Garcia-Atance, G. Obexerruff, J.A Lenstra, P. Ajmone-Marsam And S. Dunner. 2006. Geographical partitioning of goat diversity I Europe and the Middle East. *Anim. Genet.* 37: 327-334.
- Cardellino, R. A. 2006. Status of the world's livestock genetic resources: preparation of the first report on the state of the world's animal genetic resources. *The role of biotechnology in exploring and protecting agricultural genetic resources*.
- Chen, S. Y., Su, Y. H., Wu, S. F., Sha, T., & Zhang, Y. P. 2005. Mitochondrial diversity and phylogeographic structure of Chinese domestic goats. *Molecular phylogenetics and evolution*, 37(3), 804-814.

- Chen, S., B. Fan, B. Liu, M. Yu and S. Zhao et al., 2006. Genetic variations of 13 indigenous Chinese goat *breeds* based on cytochrome B gene sequences. *Biochem. Genet.*, 44: 87-97.
- Chen, S.Y., Y.H. Su, S.F. Wu, T. Sha and Y.P. Zhang, 2005. Mitochondrial diversity and phylogeographic structure of Chinese domestic goats. *Mol. Phylogenet. Evol.*, 37: 804-814.
- Chenyambuga, S.W., 2002. Genetic characterization of indigenous goat populations of sub-Saharan Africa using microsatellite DNA markers. Ph.D. Thesis, Department of Animal Science and Production, Sokoine University of Agriculture, Sokoine, Tanzania.
- Chenyambuga, S.W., Hanotte, O., Hirbo, J., Watts, P.C., Kemp, S.J., Kifaro, G.C., Gwakisa, P.S., Petersen, P.H., Rege, J.E.O., 2004. Genetic characterization of indigenous goats of Sub-saharan Africa using microsatellite DNA markers. *Asian-Aust. J. Anim. Sci.* 17, 445–452.
- Clutton-Brock J. 1981. *Domestic Animals from Early Times*. Heinemann and British Museum of Natural History, London.
- Corbet, G. B. 1978. *mammals of the Palaearctic Region*. Cornell University Press.
- Crawford, A. M., Dodds, K. G., Ede, A. J., Pierson, C. A., Montgomery, G. W., Garmonsway, H. G., ... & Kappes, S. W. (1995). An autosomal genetic linkage map of the sheep genome. *Genetics*, 140(2), 703-724.
- Damshik, M. (2001). Produktivitas Kambing Kacang yang Mendapat Ransum Penggemukan dengan Kandungan Protein yang Berbeda Disertasi. *Bogor: Sekolah Pascasarjana, Institut Pertanian Bogor. Blacksburg Virginia. Diakses dari: <http://scholar.lib.vt.edu/theses/available/etd-02212002-113821/unres-tricted/Dissertation.pdf>. [27-8-2005]*.
- Dekkers, J.C.M., 2004. Commercial application of marker- and geneassisted selection in livestock: strategies and lessons. *J. Anim. Sci.* 82 (E Suppl.), E313–328.
- Devendra, C., & Burns, M. 1983. Goat production in the tropics. Commonwealth Agricultural Bureaux. *Farnham Royal Bucks England*, 51-57.
- Devendra, C., & Burns, M. 1994. Produksi kambing di daerah tropis. *Penerbit Institut Teknologi Bandung, Bandung*.
- Devendra, C., & McLeroy, G. B. 1982. *Goat and sheep production in the tropics*. Longman.
- Dickie, M.M., 1969. Mutations at the agouti locus in the mouse. *J. Heredity*, 60:20 -25.

Adalsteinsson, S., D.P. Sponenberg, S. Alexieva and A.J.F. Russel, 1994. Inheritance of goat coat colors. *J. Heredity*, 85: 267-272.

Direktorat Jenderal Peternakan dan Kesehatan Hewan, 2011. Pedoman intensifikasi kawin alam. Kementerian Pertanian RI., Jakarta.

Direktorat Jenderal Peternakan. 2013. *Statistik Peternakan 2013*. Direktorat Jenderal Peternakan Departemen Pertanian Republik Indonesia. Jakarta.

Dixit, S. P., Verma, N. K., Aggarwal, R. A. K., Vyas, M. K., Rana, J., & Sharma, A. (2012). Genetic diversity and relationship among Indian goat *breeds* based on microsatellite markers. *Small Ruminant Research*, 105(1), 38-45.

Doloksaribu, M, A. Batubara Dan S. Elieser. 2006. Karakteristik morfologik kambing spesifik lokal di Kabupaten Samosir Sumatera Utara. Prosiding Semnas Teknologi Peternakan dan Veteriner, 5-6 September 2006. Pusat Penelitian dan Pengembangan Peternakan, Bogor. hal 544- 549

Doloksaribu, M., Gatenby, R. M., & Bradford, G. E. 2000. Comparison of Sumatra sheep and hair sheep crossbreds. III. Reproductive performance of F<sub>2</sub> ewes and weights of lambs. *Small Ruminant Research*, 38(2), 115-121.

Drogemuller, C., A. Giese, F. Martins-Wess, S. Wiedemann and L. Andersson. 2006. The mutation causing the black-and-tan pigmentation phenotype of Mangalitza pigs maps to the porcine ASIP locus but does not affect its coding sequence. *Mamm. Genome*, 17: 58-66.

Eizirik, E., N. Yuhki, W.E. Johnson, M. Menotti-Raymond, S.S. Hannah and S.J. O'Brien, 2003. Molecular genetics and evolution of melanism in the cat family. *Curr. Biol.*, 13: 448-453.

Ellerman, J. R., & Morrison-Scott, T. C. S. 1966. *Checklist of Palaearctic and Indian mammals, 1758 to 1946* (p. 810). London: British Museum (Natural History).

Elrod, S., & Stansfield, W. 2007. Genetika. *Damaring Tyas W. Pentji*. Jakarta: Erlangga.

Epstein H.E. 1971. *The origin of the domestic animals of Africa*. Volume I. Africana Publishing Corporation, New York, USA. 573 pp.

Epstein, H. and I.L. Mason, 1971. *The Origin of the Domestic Animals of Africa*. Africana Publishing Corporation, New York, USA., ISBN-13: 9780841900660, Pages: 573.

- Felsenstein, J., 1985. Confidence limits on phylogenies: An approach using the bootstrap. *Evolution*, 39: 783-791.
- Fontanesi, L., F. Beretti, V. Riggio, E. Gomez Gonzalez and S. Dall'Olio et al., 2009. Copy number variation and missense mutations of the agouti signaling protein (ASIP) gene in goat *breeds* with different coat colors. *Cytogenetic Genome Res.*, 126: 333-347.
- Fontanesi, L., F. Beretti, V. Riggio, S. Dall'Olio and E.G. Gonzalez et al., 2009. Missense and nonsense mutations in melanocortin 1 receptor (MC1R) gene of different goat *breeds*: Association with red and black coat colour phenotypes but with unexpected evidences. *BMC Genet.*, Vol. 10. 10.1186/1471-2156-10-47.
- Frankham, R. 1995. Conservation genetics. *Annual review of genetics*, 29(1), 305-327.
- Gall, C. 1981. *Goat production*. Academic Press Inc.(London) Ltd..
- Georges, M., Dietz, A. B., Mishra, A., Nielsen, D., Sargeant, L. S., Sorensen, A., ... & Womack, J. E. 1993. Microsatellite mapping of the gene causing weaver disease in cattle will allow the study of an associated quantitative trait locus. *Proceedings of the National Academy of Sciences*, 90(3), 1058-1062.
- Gillespie, J. R., & Flanders, F. B. 1989. *Modern livestock & poultry production*. Cengage Learning.
- Girardot, M., J. Martin, S. Guibert, H. Leveziel, R. Julien and A. Oulmouden, 2005. Widespread expression of the bovine Agouti gene results from at least three alternative promoters. *Pigm. Cell Res.*, 18: 34-41.
- Giuffra, E., J.M.H. Kijas, V. Amarger, O. Carlborg, J.T. Jeon and L. Andersson, 2000. The origin of the domestic pig: independent domestication and subsequent introgression. *Genetics*, 154: 1785-1791.
- Glick, B.R. and J.J. Pasternak, 1994. *Molecular Biotechnology: Principles and Applications of Recombinant DNA*. ASM Press, Washington, DC., pp: 64-67.
- Greenwood, P. L. 1997. *Prenatal and postnatal effects of nutrition on growth and development of sheep*. Cornell University, Aug..
- Hall, S. J., & Bradley, D. G. 1995. Conserving livestock *breed* biodiversity. *Trends in ecology & evolution*, 10(7), 267-270.

- Hammond, K. 1994. Conservation of domestic animal diversity: Global overview. In *Proceedings of the World Congress on Genetics Applied to Livestock Production* (Vol. 21, p. 610).
- Harris D.R. 1961. The distribution and ancestry of the domestic goat. *The Journal of Linnean Society of London* 173, 79–91.
- Hauswirth, W.W., M.J. van de Walle, P.D. Olivo and P.J. Laipis, 1984. Heterogeneous mitochondrial DNA D-loop sequences in bovine tissue. *Cell*, 37: 1001-1007.
- Henrik Berg Rasmussen. 2012. Restriction Fragment Length Polymorphism Analysis of PCR-Amplified Fragments (PCR-RFLP) and Gel Electrophoresis - Valuable Tool for Genotyping and Genetic Fingerprinting, Gel Electrophoresis - Principles and Basics, Dr. Sameh Magdeldin (Ed.), ISBN: 978-953-51-0458-2, InTech
- Hida, T., K. Wakamatsu, E.V. Sviderskaya, A.J. Donkin and L. Montoliu et al., 2009. Agouti protein, mahogunin and attractin in pheomelanogenesis and melanoblast like alteration of melanocytes: A cAMP-independent pathway. *Pigment Cell Melanoma Res.*, 22: 623-634.
- Hiendleder, S., H. Lewalski, R. Wassmuth and A. Janke, 1998. The complete mitochondrial DNA sequence of the domestic sheep (*Ovis aries*) and comparison with the other major ovine haplotype. *J. Mol. Evol.*, 47: 441-448.
- Hoelzel, A.R., 1998. *Molecular Genetic Analysis of Populations: A Practical Approach*. 2nd Edn., Oxford University Press, Oxford, UK., ISBN-13: 978-0199636358, Pages: 468.
- Hole, F. 1996. The context of caprine domestication in the Zagros region. *The Origins and Spread of Agriculture and Pastoralism in Eurasia*, Smithsonian Institution Press, Washington, DC, 263-281.
- Indrawan, M., Primack, Richard B. dan Supriatna Jatna. 2007. *Biologi Konservasi*. Jakarta: Yayasan Obor Indonesia.
- ISAG/FAO. 2004. Measurement of Domestic Animal Diversity (MoDAD) Recommended Microsatellites Markers. Secondary Guidelines, For development of National Farm Animal Genetic Resources Management Plans. New Microsatellite Marker Set-recommendations of Joint ISAG/FAO Standing Committee. Rome, Italy.

- Ishida, N., T. Hasegawa, K. Takeda, M. Sakagami and A. Onishi et al., 1994. Polymorphic sequence in the D-loop region of equine mitochondrial DNA. *Anim. Genet.*, 25: 215-221.
- IUCN., 1973. IUCN Red Data Book: Mammal III. International Union for Conservation of Nature and Natural Resources, Switzerland.
- Jeon, J.T., Lee, J.H., Kim, K.S., Park, C.K., Oh, S.J., 2006. Application of DNA markers in animal industries. *Aust. J. Exp. Agric.* 46, 173–182.
- Joshi, M. B., Rout, P. K., Mandal, A. K., Tyler-Smith, C., Singh, L., & Thangaraj, K. 2004. Phylogeography and origin of Indian domestic goats. *Molecular Biology and Evolution*, 21(3), 454-462.
- Kanetsky, P.A., J. Swoyer, S. Panossian, R. Holmes, D. Guerry and T.R. Rebbeck, 2002. A polymorphism in the agouti signaling protein gene is associated with human pigmentation. *Am. J. Hum. Genet.*, 70: 770-775.
- Kang, J.F., X.L. Li, R.Y. Zhou, L.H. Li, G.R. Zheng and H.Y. Zhao, 2011. Genetic diversity and differentiation of four goat lineages based on analysis of complete mtDNA d-loop. *Fron. Agric. China*, 5: 87-93.
- Kappes, S. M., Keele, J. W., Stone, R. T., McGraw, R. A., Sonstegard, T. S., Smith, T. P., ... & Beattie, C. W. 1997. A second-generation linkage map of the bovine genome. *Genome Research*, 7(3), 235-249.
- Kimura, M., 1980. A simple method for estimating evolutionary rates of base substitutions through comparative studies of nucleotide sequences. *J. Mol. Evol.*, 16: 111-120.
- Kocher, T. D., Thomas, W. K., Meyer, A., Edwards, S. V., Pääbo, S., Villablanca, F. X., & Wilson, A. C. 1989. Dynamics of mitochondrial DNA evolution in animals: amplification and sequencing with conserved primers. *Proceedings of the National Academy of Sciences*, 86(16), 6196-6200.
- Kumar, S., K. Tamura, I.B. Jakobsen and M. Nei, 2001. MEGA2: Molecular evolutionary genetics analysis software. *Bioinformatics*, 17: 1244-1245.
- Kuramoto, T., T. Nomoto, T. Sugimura and T. Ushijima, 2001. Cloning of the rat agouti gene and identification of the rat nonagouti mutation. *Mammalian Genome*, 12: 469-471.
- Lekagul, B. and J.A. McNeely, 1977. *Mammals of Thailand*. 1st Edn., Kurusapha Ladprao Press, Bangkok, Thailand, Pages: 758.

- Lewin, B. 1994. Chromatin and gene expression: constant questions, but changing answers. *Cell*, 79(3), 397-406.
- Li, J.Y., H. Chen, X.L. Lan, X.J. Kong and L.J. Min. 2008. Genetic diversity of five Chinese goat *breeds* assessed by microsatellite markers. *Czech J. Anim. Sci.* 53: 315- 319.
- Li, X.L. and A. Valentini. 2004. Genetic diversity of Chinese indigenous goat *breed* based on microsatellite markers. *J. Anim. Breed. Genet.* 121: 350-355.
- Liu, R.Y., G.S. Yang and C.Z. Lei, 2006. The genetic diversity of mtDNA D-loop and the origin of chinese goats. *Acta Genet. Sin.*, 33: 420-422.
- Luikart, G., England, P. R., Tallmon, D., Jordan, S., & Taberlet, P. 2003. The power and promise of population genomics: from genotyping to genome typing. *Nature Reviews Genetics*, 4(12), 981-994.
- Luikart, G., L. Gielly, L. Excoffier, J.D. Vigne, J. Bouvet and P. Taberlet, 2001. Multiple maternal origins and weak phylogeographic structure in domestic goats. *Proc. Natl. Acad. Sci. USA.*, 98: 5927-5932.
- Machado, M.A., I. Schuster, M.L. Martinez and A.L. Campos. 2003. Genetic diversity of four cattle *breeds* using microsatellite markers. *Rev. Bras. Zool.* 32: 93-98.
- MacHugh, D.E. and D.G. Bradley, 2001. Livestock genetic origins: Goats buck The trend. *Proc. Natl. Acad. Sci. USA.*, 98: 5382-5384.
- Mahmilia, F, S.P.Ginting, A. Batubara, J. Sianipar Dan A. Tarigan. 2004. Karakteristik Morfologi dan Performans Kambing Gembrong dan Kambing Kosta. Laporan Hasil Penelitian TA. 2004. Loka Penelitian Kambing Potong Sungei Putih, Sumatera Utara.
- Mahmoudi B, Babayev M Sh, Hayeri Khiyavi F, Pourhosein A and Daliri M. 2011. *Breed* characteristics in Iranian native goat populations. *Journal of Cell and Animal Biology.* 5: 129-134.
- Mannen, H., Nagata, Y., and Tsuji, S. 2001. Mitochondrial DNA reveal that domestic goat (*Capra hircus*) are genetically affected by two subspecies of bezoar (*Capra aegagrus*). *Biochem. Genet.* **39**:145–154.
- Mannen, H., Y. Nagata and S. Tsuji, 2001. Mitochondrial DNA reveal that domestic Goat (*Capra hircus*) are genetically affected by two subspecies of bezoar (*Capra aegagurus*). *Biochem. Genet.*, 39: 145-154.

- Mason, I.L., 1981. *Breeds*. In: Goat Production, Gall, C. (Ed.). Academic Press, London, UK.
- Mason, I.L., 1984. Evolution of Domesticated Animals. Prentice Hall Press, New York, USA., ISBN-13: 978-0582460461, Pages: 468.
- Meester, J., & Setzer, H. W. 1971. *The mammals of Africa. An identification manual*. Smithsonian Institution Press, 1111 North Capitol Street, Washington, DC 20560, USA.
- Meirina, E.D., 2006. Karakteristik habitat kambing hutan Sumatera, *Capricornis sumatraensis* Bachstein, 1799 di kawasan Danau Gunung Tujuh, Taman Nasional Kerinci Barat. IPB-University, Bogor.
- Mileski, A., & Myers, P. 2004. *Capra hircus*. *Online*), *Animal Diversity Web*. Accessed December, 3, 2009.
- Min, M.S., H. Okumura, D.J. Jo, J.H. An and K.S. Kim et al., 2004. Molecular phylogenetic status of the Korean goral and Japanese serow based on partial sequences of the mitochondrial cytochrome b gene. *Mol. Cells*, 17: 365-372.
- Minarovič, T., Trakovická, A., Rafayová, A., & Lieskovská, Z. 2010. Animal Species Identification by PCR–RFLP of Cytochrome b. *Scientific Papers Animal Science and Biotechnologies*, 43(1), 296-299.
- Ministry of Forestry, 2014. Statistics Ministry of Forestry in 2013. Ministry of Forestry, Jakarta, ISBN: 979-606-073-6, Pages: 301.
- Moioli, B, F. Napolitano and G. Catillo. 2004. Genetic diversity between Piedmontese, Maremmana, and Podolica cattle *breeds*. *J. Hered.* 95: 250-256.
- Morin, P. A., Chambers, K. E., Boesch, C., & Vigilant, L. 2001. Quantitative polymerase chain reaction analysis of DNA from noninvasive samples for accurate microsatellite genotyping of wild chimpanzees (*Pan troglodytes verus*). *Molecular ecology*, 10(7), 1835-1844.
- Mount, D. W. (2001). Phylogenetic prediction. *Bioinformatics. Sequence and genome analysis*, Cold Spring Harbor laboratory. New York Press pp. 237-280.
- Muharizal, 1999. Habitat dan makanan kambing hutan (*Capricornis sumatraensis*) di kawasan hutan talang babungo kecamatan lembah gumanti kabupaten solok. Tesis, Program Pasca Sarjana. Universitas Andalas, Indonesia, (In Indonesian).

- Muladno. 2006. Aplikasi Teknologi Molekuler dalam Upaya Peningkatan Produktivitas Hewan. Pelatihan Teknik Diagnostik Molekuler untuk Peningkatan Produksi Peternakan dan Perikanan di Kawasan Timur Indonesia. Bogor: Kerjasama Pusat Studi Ilmu Hayati, Lembaga Penelitian dan Pemberdayaan Masyarakat Institut Pertanian Bogor dan Direktorat Jenderal Pendidikan Tinggi Depdiknas.
- Mulyono S. 2004. *Teknik Pembibitan Kambing dan Domba*. Penebar Swadaya Jakarta.
- Mulyono, S. and B. Sarwono, 2007. *Penggemukan Kambing Potong*. Penebar Swadaya, Jakarta.
- Murtidjo, B. A. 1993. *Memelihara Kambing sebagai ternak potong dan Perah*. Penerbit Kanisius. Yogyakarta.
- Naderi, S., H.R. Rezaei, P. Taberlet, S. Zundel and S.A. Rafat *et al.*, 2007. Large-scale mitochondrial DNA analysis of the domestic goat reveals six haplogroups with high diversity. *Plos One*, Vol. 2. 10.1371/journal.pone.0001012
- Nei, M. 1987. *Molecular Evolutionary Genetics*. Columbia University Press, New York, USA.
- Nei, M., & Kumar, S. 2000. *Molecular evolution and phylogenetics*. Oxford University Press.
- Norris, B.J. and V.A. Whan, 2008. A gene duplication affecting expression of The ovine ASIP gene is responsible for white and black sheep. *Genome Res.*, 18: 1282-1293.
- Notter, D. R., A. da S. Mariante, and Z. Sheng. 1994. Modern approaches to active conservation of domestic animal diversity. *Proc. 5th World Congr. Genet. Appl. Livest. Prod.* 21:509-516
- Nougoue, A.R., 2012. DNA barcoding as a tool for the identification of illegally traded wildlife products. M.Sc. Thesis, Concordia University, Quebec, Canada.
- Oka, I. G. L., SayangYupardhi, W., Mantra, I. B., Suyasa, N., & Dewi, A. A. S. (2011). Genetic relationship between gembrong goat, kacang goat and kacang x etawah crossbred (PE) based on their mitochondrial DNA. *Jurnal Veteriner*, 12(3), 180-184.
- Pakpahan, S., W.T. Artama, R. Widayanti and I.G. Suparta, 2015. Genetic variations and The origin of native Indonesian goat *breeds* based on mtDNA D-loop sequences. *Asian J. Anim. Sci.*, 9: 341-350.

- Pakpahan, S., W.T. Artama, R. Widayanti and I.G. Suparta, 2016. Genetic characteristics and relationship in different goat populations of Indonesia based on cytochrome B gene sequences. *Asian J. Anim. Sci.*, 10: 29-38.
- Pakpahan, S., W.T. Artama, R. Widayanti and I.G. Suparta, 2016. Molecular phylogenetic of hutan sumatera goat (Sumatran Serow) and domestic goat (*Capra hircus*) in Indonesia based on analysis mitochondrial cytochrome b gene. *Asian J. Anim. Vet. Adv.*, 11: 331-340.
- Pamungkas, F. A., A. Batubara, M. Doloksaribu & E. Sihite. 2009. Potensi beberapa plasma nutfah kambing lokal Indonesia. Pusat Penelitian dan Pengembangan Peternakan, Badan Penelitian dan Pengembangan Pertanian, Departemen Pertanian. <http://lolitkambing.litbang.deptan>
- Pardeshi VC, Sainani MN, Maddox JF, Ghalsasi PM, Nimbkar C, Gupta VS. 2005. Assessing the role of *FecB* mutation in productivity of Indian sheep. *Current sci* 89: 887-890.
- Peacock, C., 2005. Goats: Unlocking their potential for Africa's farmers. Proceeding of the 7th Conference of Ministers Responsible for Animal Resources, Farm-Africa Working Papers Series No. 2, October 31- November 4, 2005, Kigali, Rwanda.
- Primack, R. B. 1993. *Essentials of conservation biology* (Vol. 23). Sunderland, Massachusetts: Sinauer Associates.
- Produksi, D. P. D. J. B. Peternakan. 2003. *Pengembangan Industri Benih dan Bibit Peternakan di Indonesia*. Direktorat Pembibitan.
- Queller, D. C., Strassmann, J. E., & Hughes, C. R. 1993. Microsatellites and kinship. *Trends in Ecology & Evolution*, 8(8), 285-288.
- Ratnayani, K., Wirajana, I. N., & Laksmiwati, A. A. I. A. M. 2007. Analisis Variasi Nukleotida Daerah D-loop DNA Mitokondria pada Satu Individu Suku Bali Normal. *Journal of Chemistry*, 1(1). reaction. *Am.J. Hum. Genet.* 44: 388-396.
- Richards, R. I., & Sutherland, G. R. 1994. Simple repeat DNA is not replicated simply. *Nature genetics*, 6(2), 114-116.
- Ricordeau, G., J.J. Lauvergne and P. Guillimin, 1971. Determinisme hereditaire de la couleur blanche de la chevre Saanen. *Annales de Genetique et de Selection Animale*, 3: 425-432.
- Rieder, S., S. Taourit, D. Mariat, B. Langlois and G. Guerin, 2001. Mutations in the agouti (ASIP), the extension (MC1R) and the brown (TYRP1) loci and their

association to coat color phenotypes in horses (*Equus caballus*). *Mamm. Genome*, 12: 450-455.

Robbins, L.S., J.H. Nadeau, K.R. Johnson, M.A. Kelly and L. Roselli-Reh fuss et al., 1993. Pigmentation phenotypes of variant Extension locus alleles result from point mutations that alter MSH receptor function. *Cell*, 72: 827-834.

Roesjdi, I., 1989. Studi perilaku kambing hutan Sumatera (*Capricornis sumatraensis* Bachstein, 1799) di maninjau, Sumatera Barat dan di kebun binatang ragunan, Jakarta. Skripsi, Jurusan Konservasi Sumber Daya Hutan. Fakultas Kehutanan. Institut Pertanian Bogor, Bogor, Indonesia, (In Indonesian).

Ruane, P., Lang, J., DeJesus, E., Berger, D. S., Dretler, R., Rodriguez, A., ... & Shafer, M. S. 2006. Pilot study of once-daily simplification therapy with abacavir/lamivudine/zidovudine and efavirenz for treatment of HIV-1 infection. *HIV clinical trials*, 7(5), 229-236.

Saitbekova, N., C. Gaillard, G.O. Ruff and G. Dolf. 1999. Genetic diversity in Swiss goat breeds based on microsatellite analysis. *Anim. Genet.* 30: 36-41.

Saitou, N. and M. Nei, 1987. The neighbor-joining method: A new method for reconstructing phylogenetic trees. *Mol. Biol. Evol.*, 4: 406-425.

Saitou, N., & Imanishi, T. (1989). Relative efficiencies of the Fitch-Margoliash, maximum-parsimony, maximum-likelihood, minimum-evolution, and neighbor-joining methods of phylogenetic tree construction in obtaining the correct tree. *Mol. Biol. Evol.*, 6(5), 514-525.

Sarangarajan, R. and R.E. Boissy, 2001. *Typr1* and oculocutaneous albinism type 3. *Pigment Cell Res.*, 14: 437-444.

Sardina, M.T., M. Ballester, J. Marmi, R. Finocchiaro, J.B.C.H.M. van Kaam, B. Portolano and J.M. Folch, 2006. Phylogenetic analysis of Sicilian goats reveals a new mtDNA lineage. *Anim. Genet.*, 37: 376-378.

Sarwono, B., & Mulyono, S. 2007. Penggemukan Kambing Potong. *Penebar Swadaya, Jakarta*.

Schmutz, S.M., T.G. Berryere, J.L. Barta, K.D. Reddick and J.K. Schmutz, 2007. Agouti sequence polymorphisms in coyotes, wolves and dogs suggest hybridization. *J. Heredity*, 98: 351-355.

Searle, A.G., 1968. Comparative Genetics of Coat Colour in Mammals. Academic Press Inc., USA., ISBN-13: 978-0126334500, Pages: 308.

- Setiadi, B., D. Priyanto dan M. Martawijaya. 1997. Komparatif Morfologik Kambing. Laporan Hasil Penelitian APBN 1996/1997. Balai Penelitian Ternak Ciawi, Bogor.
- Simm, G. 1998. *Genetic improvement of cattle and sheep*. Farming Press.
- Siregar, S. B. 1994. Ransum Ternak Ruminansia. *Penebar Swadaya*. Jakarta.
- Soma, H., H. Kada and K. Matayoshi, 1987. Evolutionary Pathways of Karyotypes of the Tribe Rupicaprini. In: *The Biology and Management of Capricornis and Related Mountain Antelopes*, Soma, H. (Ed.). Chapter 4, Springer, Netherlands, ISBN: 978-94-011-8032-0, pp: 62-71.
- Soma, H., H. Kada, K. Matayoshi, M.T. Tsai and T. Kiyokawa et al., 1981. Cytogenetic similarities between the formosan serow (*Capricornis swinhoi*) and the Japanese serow (*Capricornis crispus*). *Proc. Jpn. Acad. Ser. B: Phys. Biol. Sci.*, 57: 254-259.
- Sosroamidjojo, M. S. 1985. Ternak Potong dan Kerja. CV Yasaguna, Jakarta.
- Sponenberg, D.P., L. Piper and A. Ruvinsky, 1997. Genetics of Colour and Hair Texture. In: *The Genetics of Sheep*, Piper, L. and A. Ruvinsky (Eds.). CAB International, Wallingford, UK., pp: 51-86.
- Sponenberg, D.P., S. Alexieva and S. Adalsteinsson, 1998. Inheritance of color in Angora goats. *Genet. Sel. Evol.*, 30: 385-395.
- Stalling, R.L., Ford, A.F., Nelson, D., Torney, D.C., Hildebrand, C.E. and Mayzis, R.K. 1991. Evolution and distribution of (GT)<sub>n</sub> repetitive sequences in mammalian genomes. *Genomics*, 10,807-815.
- Subandriyo, Setiadi B. 2003. Pengelolaan Plasma Nutfah Hewani sebagai Aset dalam Pemenuhan Kebutuhan Manusia. Makalah disampaikan dalam Lokakarya Pemantapan Pengelolaan Database dan Pengenalan Jejaring Kerja Plasma Nutfah Pertanian. Bogor, 21-28 Juli 2003. Bogor: Komisi Nasional Plasma Nutfah.
- Sugama, K., T. Wardoyo, K. Matsuda and S. Kumagai. 1998. Present Status of Grouper (*Cromileptes altivelis*) Seed Production in Indonesia. Fifth Asian Fisheries Forum Chiang Mai. Thailand.
- SulabdaN.,SusariN.N.W.,HeryaniN.L.G.S.&Pujai.K.(2012)Genetic diversity of Gembrong Goat based on DNA microsatellite markers. *Indonesian Journal of Animal and Veterinary Science* 17, 25–35.
- Sultana, S., Mannen, H., & Tsuji, S. 2003. Mitochondrial DNA diversity of Pakistani goats. *Animal genetics*, 34(6), 417-421.

- Suryanto, D. 2003. Melihat keanekaragaman organisme melalui beberapa teknik genetika molekuler. *USU Digital Library*.
- Takada, T., Kikkawa, Y., Yonekawa, H., Kawakami, S., & Amano, T. 1997. Bezoar (*Capra aegagrus*) is a matriarchal candidate for ancestor of domestic goat (*Capra hircus*): evidence from the mitochondrial DNA diversity. *Biochemical genetics*, 35(9-10), 315-326.
- Takezaki, N. and M. Nei. 1996. Genetic distances and reconstruction of phylogenetic trees from microsatellite DNA. *Genetic* 144: 389-399.
- Tamura, K., G. Stecher, D. Peterson, A. Filipski and S. Kumar, 2013. MEGA 7: Molecular evolutionary genetics analysis version 6.0. *Mol. Biol. Evol.*, 30: 2725-2729.
- Tang G, Li X, Plastow G, Moore SS, Wang Z . 2011. Developing marker-assisted models for evaluating growth traits in Canadian beef cattle genetic improvement. *Livest Sci* 138(1-3):62-68
- Tang, C.J., R.Y. Zhou, X.L. Li, J.W. Zhao and L.H. Li et al., 2008. Variation of 423G>T in the agouti gene exon 4 in indigenous Chinese goat *breeds*. *Biochem. Genet.*, 46: 770-780.
- Tapio, M. and I. Grigaliunaite, 2003. Use of mitochondrial DNA as a genetic marker in domesticated mammals. *Ekologija*, 1: 31-33.
- Tarigan, H., 1999. Populasi kambing hutan sumatera (*Capricornis sumatrensis*) dan karakteristik habitatnya di kawasan taman nasional kerinci seblat. Pusat Penelitian Lingkungan. Universitas Bengkulu, Bengkulu-Indonesia, (In Indonesian).
- Toro, M.A., J. Fernandez and A. Caballero, 2009. Molecular characterization of *breeds* and its use in conservation. *Livest. Sci.*, 120: 174-195.
- Tu, Y.R., 1989. *Sheep breeds in China*. Shanghai Scientific and Technical Publishing House, Shanghai, China.
- Tucho, T. A. 2004. Genetic Characterization of Indigenous Goat Populations of Ethiopia Using Microsatellite DNA Markers. *National Dairy Research Institute*. India.
- Uerpmann, H. P. 1996. Animal domestication-accident or intention. *The origins and spread of agriculture and pastoralism in Eurasia*, 227-237.
- USAID., 2015. Perdagangan satwa liar, kejahatan terhadap satwa liar dan perlindungan spesies di Indonesia: Konteks kebijakan dan hukum. Proyek

Changes For Justice (C4j), Indonesia, (In Indonesian).  
[http://pdf.usaid.gov/pdf\\_docs/PA00KH51.pdf](http://pdf.usaid.gov/pdf_docs/PA00KH51.pdf).

Vage, D.I., D. Lu, H. Klungland, S. Lien, S. Adalsteinsson and R.D. Cone, 1997.  
A non-epistatic interaction of agouti and extension in the fox, *Vulpes vulpes*. *Nat. Genet.*,15: 311-315.

Van der Werf, J.H.J., 2007. Marker assisted selection in sheep and goats. In: Guimarães, E., Ruane, J., Scherf, B., Sonnino, A., Dargie (Eds.), *Marker Assisted Selection: Current Status and Future Perspectives in Crops, Livestock, Forestry and Fish*. J. FAO, Rome, Italy, pp. 230–247.

Vignal, A., Milan, D., SanCristobal, M., & Eggen, A. (2002). A review on SNP and other types of molecular markers and their use in animal genetics. *Genetics Selection Evolution*, 34(3), 275-306.

Wang, J., Y.L. Chen, X.L. Wang and Z.X. Yang, 2008. The genetic diversity of seven indigenous Chinese goat *breeds*. *Small Ruminant Res.*, 74: 231-237.

Weberj., L., and P. E. May, 1989 Abundant class of human DNA polymorphism which can be typed using the polymerase chain

Widayanti, R., Agustianti, T. Suprayogi, R.M. Kunda and S. Pakpahan, 2016. Phylogenetic relationship of cuscuses (Marsupialia: Phalangeridae) from Papua and Maluku based on mitochondrial sequences of NADH dehydrogenase sub-unit 1 gene. *Biotechnology*, (In Press).10.3923/biotech.2016.

Wu XX, Yang ZP, Shi XK, Li JY, Ji DJ, Mao YJ, Chang LL, Gao HJ. 2012. Association of SCD1 and DGAT1 SNPs with the intramuscular fat traits in Chinese Simmental cattle and their distribution in eight Chinese cattle *breeds*. *Mol Biol Rep* 39:1065–1071

Xie, C.X., 1985. History of raising cattle, sheep and goat in China. Shanghai Scientific and Technical Publishing House, Shanghai, China.

Yu, F., 1991. Technique of raising goats in ancient China. *Ancient Mod. Agric.*, 3: 54-59.

Yuwono, T. 2006. Teori dan Aplikasi PCR. *Yogyakarta: Penerbit Andi*.

Zein, M.S.A., S. Sulandari, Muladno, Subandriyo Dan Riwantoro. 2012. Diversitas genetik dan hubungan kekerabatan kambing lokal Indonesia menggunakan marker DNA mikrosatelit. *JITV* 17(1): 25-35.

Zhao, Y., J. Zhang, E. Zhao, X. Zhang, X. Liu and N. Zhang, 2011. Mitochondrial DNA diversity and origins of domestic goats in Southwest China (excluding Tibet). *Small Rumin. Res.*, 95: 40-47.