

## DAFTAR PUSTAKA

- Abdurrahman, A. M., A. Astuti, Rusman, & Panjono. 2024. Feeding Behavior, Intake Pattern and Nutrient Sufficiency of Sheep Fed Sorghum Straw Silage and Concentrate. *J. Anim. Behav. Biometeorol.* 12(1): e2024003.
- Adamu, A. M., I. F. Adu, S. A. S. Olorunju, C. B. I. Alawa, and O. S. Lamidi. 1996. Effects of Urea - Ammoniation and Cotton Seed Cake Supplementation on The Utilization of Sorghum Stover by Sheep. *Niger. J. Anim. Prod.* 23(2): 147–152.
- Adeleke, R. A., C. B. I. Alawa, and S. M. Otaru. 2022. Performance of Yankasa Weaner Rams Fed Roughage and Concentrate Supplement at Different Sequences and Intervals. *Niger. J. Anim. Prod.* 49(4): 114–132.
- Al-Beiruty, R. Z. A., S. A. Cheyed, and M. H. Hashim. 2020. Hazard of Toxic Hydrocyanic Acid (HCN) in Sorghum and Ways to Control it: A Review. *Plant Arch.* 20: 2726–2731.
- Anésio, A. H.C., M. V. Santos, L. D. Da Silva, R. R. Silveira, T. G.S. Braz, and R. C. Pereira. 2017. Effects of Ensiling Density on Chemical and Microbiological Characteristics of Sorghum Silage. *J. Anim. Feed Sci.* 26(1): 65–69.
- Anggraeny, Y. N., H. Soetanto, Kusmartono, dan Hartutik. 2015. Sinkronisasi Suplai Protein dan Energi dalam Rumen untuk Meningkatkan Efisiensi Pakan Berkualitas Rendah. *Wartazoa*, 25(3): 107–116.
- AOAC. 2019. Official Methods of Analysis of AOAC International (G. W. J. Latimer (ed.); 21st ed. AOAC International, Rockville Maryland. USA.
- Aruwayo, H., R. A. Adeleke, and M. Sani. 2020. Effect of Interval of Feeding Roughage and Concentrate on The Haematological and Biochemical Parameters of Sokoto Red Buckling. *FUDMA Journal of Agriculture and Agricultural Technology* 8(1): 304-312.
- Astuti, A., Erwanto, dan E. P. Santosa. 2015. Pengaruh Cara Pemberian Konsentrat-Hijauan terhadap Respon Fisiologis dan Performa Sapi Peranakan Simmental. *Jurnal Ilmiah Peternakan Terpadu.* 3: 201–207.
- Atkinson, R. L., C. D. Toone, T. J. Robinson, D. L. Harmon, and P. A. Ludden. 2007. Effects of Supplemental Ruminally Degradable Protein Versus Increasing Amounts of Supplemental Ruminally Undegradable Protein on Nitrogen Retention, Apparent Digestibility, and Nutrient Flux Across Visceral Tissues in Lambs Fed Low-Quality Forage. *J. Anim. Sci.* 85(12): 3331-3339.
- Babu, J., N. N. Kumari, Y. R. Reddy, T. Raghunandan and K. Sridhar. 2015. Effect of Feeding Sweet Sorghum Stover-Based Complete Rations on The Growth Performance and Carcass Characteristics of Ram Lambs. *Trop. Anim. Health Prod.* 47(3): 623–626.

- Bai, C., G. Pan, R. Leng, W. Ni, J. Yang, J. Sun, Z. Yu, Z. Liu and Xue, Y. 2022. Effect of Ensiling Density and Storage Temperature on Fermentation Quality, Bacterial Community, and Nitrate Concentration of Sorghum-Sudangrass Silage. *Front. Microbiol.* 13: 1–10.
- Baldwin, R. L., and M. J. Allison. 1983. Rumen Metabolism. *J. Anim. Sci.* 57:461–77.
- Bean, B. W., R. L. Baumhardt, F. T. McCollum III, and K. C. Mccuistion. 2013. Field Crops Research Comparison of Sorghum Classes for Grain and Forage Yield and Forage Nutritive Value. *Field Crops Res.* 142: 20–26.
- Bertoni, G., P. Bani, M. G. Maianti, R. Lombardelli, and L. Sarti. 2007. Effect of a Different Concentrate-Forage Sequence on Digesta Passage Rate, Faeces Traits and Milk Features of Dairy Cows. *Ital. J. Anim. Sci.* 6(1):257–59.
- Bharanidharan, R., S. Arokiyaraj, E. B. Kim, C. H. Lee, Y. W. Woo, Y. Na, D. Kim, dan K. H. Kim. 2018. Ruminant Methane Emissions, Metabolic, And Microbial Profile of Holstein Steers Fed Forage and Concentrate, Separately or As a Total Mixed Ration. *PLoS ONE.* 13(8): 1–19.
- Bhasker, T. V., D. Nagalakshmi, D. Srinivasa Rao, and T. Raghunandan. 2013. Nutrient Utilization in Sheep Fed Sorghum Stover-Based Diets Supplemented with Cellulase and Xylanase. *Indian j. small ruminants.* 19(1): 45–49.
- Borreani, G., & E. Tabacco. 2008. Low Permeability to Oxygen of a New Barrier Film Prevents Butyric Acid Bacteria Spore Formation in Farm Corn Silage. *J. Dairy Sci.* 91(11): 4272–4281.
- Block, E. (2006). Rumen Microbial Protein Production: Are We Missing an Opportunity to Improve Dietary and Economic Efficiencies in Protein Nutrition of the High Producing Dairy Cow? *High Plains Dairy Conference*: 33–46
- BPS. 2021. Populasi Domba menurut Provinsi (Ekor), 2019-2021. <https://www.bps.go.id/indicator/24/473/1/populasi-domba-menurut-provinsi.html>. (Diakses tanggal 10 April 2022)
- Cabrita, A. R. J., Dewhurst, A. J. M. Abreu, and J. M. F. Fonseca. 2006. Evaluation of The Effects of Synchronising the Availability of N and Energy on Rumen Function and Production Responses of Dairy Cows - A Review. *Animal Research.* 55(1): 1–24.
- Cai, Y., Z. Du, S. Yamasaki, D. B. Jethro, and N. Man. 2020. Chemical Composition, Characteristics Concerned with Fermentative Quality and Microbial Population of Ensiled Pearl Millet and Sorghum Stover in Semi-Arid West Africa. *Anim. Sci. J.* 91(1): 1–9.
- Calsamiglia, S., P. W. Cardozo, A. Ferret, and A. Bach. 2008. Changes in Rumen Microbial Fermentation are Due to a Combined Effect of Type of Diet And pH. *J. Anim. Sci.* 86(3): 702–711

- Carrillo-muro, O., A. Rivera-villegas, P. Hernandez-Briano, A. Estrada-angulo, M. A. Lopez-Carlos, C. A. Medina-flores, and F. Mendez-llorente. 2022. Effect of Calcium Propionate Level on the Growth Performance, Carcass Characteristics, and Meat Quality of Feedlot Ram Lambs. *Small Rumin. Res.* 207 :1–9.
- Castillo C, J. Hernandez, J. Mendez, J. Llena, V. Pereira, M. Lopez Alonso, and J. Benedito. 2006. Influence of grain processing on acid-base balance in feedlot steers. *Vet Res Commun* 30:823–837
- Chaney, A. L. and E. P. Marbach. 1962. Modified Reagents for Determination of Urea and Ammonia. *Clin. Chem.* 8: 130–132.
- Chen, X. B., & M. J. Gomes. 1995. Estimation of microbial protein supply to sheep and cattle based on urinary excretion of purine derivatives -an overview of the technical details. *An Overview of The Technical Details*. International Feed Resources Unit. Rowett Research Institute, Bucksburn Aberdeen, UK.
- Cheng, K. J., J. P. Fay, R. E. Howarth, and J. W. Costerton. 1980. Sequence of Events in the Digestion of Fresh Legume Leaves by Rumen Bacteria. *Appl. Environ. Microbiol.* 40(3): 613–625.
- Cherian, G. 2020. A Guide to the Principles of Animal Nutrition. <https://open.oregonstate.edu/animalnutrition/chapter/chapter-18/>. (Diakses tanggal 10 Maret 2022).
- Chilliard, Y., A. Ferlay, L. Bernard, J. Rouel, M. Doreau. 2007. Diet, Rumen Biohydrogenation and Nutritional Quality of Cow and Goat Milk Fat. *Eur. J. Lipid Sci. Technol.* 109: 828–855.
- Chesworth, J., and H. Guerin, 1992. *Ruminant Nutrition. The Tropical Agriculturalist*. New York: MacMillan Press.
- Clark, J. H., T. H. Klusmeyer, and M. R. Cameron. 1992. Microbial Protein Synthesis and Flows of Nitrogen Fractions to the Duodenum of Dairy Cows. *J. Dairy Sci.* 75(8): 2304–2323.
- Clemmons, B. A., C. Martino, L. G. Schneider, J. Le, M. M. Embree, and P. R. Myer. 2019. Temporal Stability of the Ruminant Bacterial Communities in Beef Steers. *Sci. Rep.* 9(9522): 1–8.
- Colucci, P. E., G. K. Macleod, W. L. Grovum, I. McMillan, and D. J. Barney. 1990. Digesta Kinetics in Sheep and Cattle Fed Diets with Different Forage to Concentrate Ratios at High and Low Intakes. *J. Dairy Sci.* 73(8): 2143-2156.
- Damayanti, F. W., C. M. S. Lestari, E. Purbowari, dan R. Adiwinarti. 2020. Tingkah Laku Makan Domba Lokal Jantan Dengan Pakan Limbah Pertanian Sebagai Pengganti Rumput. *Prosiding Seminar Teknologi Dan Agribisnis Peternakan VII–Webinar: Prospek Peternakan Di Era Normal Baru Pasca Pandemi COVID-19*. Fakultas Peternakan Universitas Jendral Soedirman. Purwokerto Jawa Tengah. 391–397.

- Das, N., D.N. Maitra, G.S. Bisht, 1999. Genetic And Non-Genetic Factors Influencing Ingestif Behavior of Sheep Under Stall-Feeding Conditions. *Small Rumin. Res.* 32 (2): 129-136
- de Arruda Leite, P. M. B., R. M. L. Vêras, A. S. C. Vêras, A. Guim, E. J. O. de Souza, K. K. de Souza Silva, L. M. G. Barreto, J. de Lima Silva, and D. B. Cardoso. (2018). de Arruda Leite, P. M. B., R. M. L. Vêras, A. S. C. Vêras, A. Guim, E. J. O. de Souza, K. K. de Souza Silva, L. M. G. Barreto, J. de Lima Silva, and D. B. Cardoso. (2018). Different Roughage:Concentrate Ratios with and Without Liquid Residue of Cassava for Lambs. *Trop. Anim. Health Prod.* 50(8): 1807-1814. *Trop. Anim. Health Prod.* 50(8): 1807-1814.
- Driehuis, F., J. M. Wilkinson, Y. Jiang, I. Ogunade, and A. T. Adesogan. 2018. Silage Review: Animal and Human Health Risks from Silage. *J. Dairy Sci.*, 101(5): 4093–4110.
- Dwyer, C. 2008. Environment and the Sheep Breed Adaptations and Welfare Implications. In: Dwyer C., ed. *The Welfare of Sheep* Vol 6 pp. 41-80. Springer: Edinburgh, United Kingdom.
- Ekiz, B., O. Kocak, H. Yalcintan, and A. Yilmaz. 2016. Effects of Suckling Duration on Growth, Slaughtering and Carcass Quality Characteristics of Kivircik Lambs. *Trop. Anim. Health Prod.* 48(2): 395–401.
- Elferink, S. J. W. H. O., F. Driehuis, J. C. Gottschal, and S. F. Spoelstra. 2000. Silage Fermentation Processes and Their Manipulation. *FAO Plant Production and Protection Papers*.
- Eschenlauer, S.C.P., N. McKain, N.D. Walker, N.R. McEwan, C.J. Newbold, and R.J. Wallace. 2002. Ammonia Production by Ruminant Microorganisms and Enumeration, Isolation, And Characterization of Bacteria Capable of Growth on Peptides and Amino Acids from the Sheep Rumen. *Appl. Environ. Microbiol.* 68(10): 4925 – 4931.
- Faerber, C. W., L. G. Mcneal, R.L. Harding, K. L. Hill, J. D. Bobb, S. Horner and J. Merriam, 2004. *Small Ruminant Manual*, Animal Health Publication 3rd Edition. <http://infovets.com/books/smrm/>. (Diakses tanggal 4 Februari 2024)
- Fimbres, H., G. Hernández-Vidal, J. F. Picón-Rubio, J. R. Kawas, and C. D. Lu. 2002. Productive Performance and Carcass Characteristics of Lambs Fed Finishing Ration Containing Various Forage Levels. *Small Rumin Res.* 43(3): 283-288.
- Firkins, J. L., Z. Yu, and M. Morrison. 2007. Ruminant Nitrogen Metabolism: Perspectives for Integration of Microbiology and Nutrition for Dairy. *J. Dairy Sci.* 90: E1 – E16.
- Flores-Mar, J., R. A. Zinn, and J. Salinas-Chavira. 2017. Influence of Forage NDF Level and Source in Growing–Finishing Diets on Growth Performance of Feedlot Lambs. *Acta Agric. Scand. Anim. Sci.* 67(3–4): 134–138.

- Fruet, A. P. B., F. S. Stefanello, A. G. Rosado Júnior, A. N. M. de Souza, C. J. Tonetto, J. L. Nörnberg. 2016. Whole Grains in The Finishing of Culled Ewes in Pasture or Feedlot: Performance, Carcass Characteristics and Meat Quality. *Meat Sci.* 113: 97–103
- García-Segovia, P., A. Andrés-Bello, and J. Martínez-Monzó. 2007. Effect of Cooking Method on Mechanical Properties, Color and Structure of Beef Muscle (M. Pectoralis). *J. Food Eng.* 80(3): 813–821.
- Gerlach, K., F. Roß, K. Weiß, W. Büscher, and K. H. Südekum. 2013. Changes in Maize Silage Fermentation Products During Aerobic Deterioration and Effects on Dry Matter Intake by Goats. *Agric. Food Sci.* 22(1): 168–181.
- Getachew, G., D. H. Putnam, C. M. De Ben, and E. J. De Peters. 2016. Potential of Sorghum as an Alternative to Corn Forage. *American J. Plant Sci.* 7: 1106–1121.
- Getahun, D., T. Alemneh, D. Akebereg, M. Getabalew, and D. Zewdie. 2019. Urea metabolism and recycling in ruminants. *Biomed J Sci. Tech. Res.* 20(1): 14790–14796.
- Gill, W. 2022. *Applied Sheep Behavior*. <https://www.yumpu.com/en/document/read/4553051/applied-sheep-behavior-department-of-animal-science>. (Diakses tanggal 10 Maret 2022).
- Ginting, S. P. 2005. Sinkronisasi Degradasi Protein Dan Energi Dalam Rumen Untuk Memaksimalkan Produksi Protein Mikroba. *Wartazoa*, 15(1): 1-10.
- Goetsch, A. L., T. A. Gipson, A. R. Askar, and R. Puchala. 2010. Invited Review: Feeding Behavior of Goats. *J. Anim. Sci.* 88(1): 361-373.
- Görgülü, M., O. Güney, O. Torun, O. Özuyanik, and H. R. Kutlu. 2003. An Alternative Feeding System for Dairy Goats: Effects of Free-Choice Feeding on Milk Yield and Milk Composition of Lactating Suckling Damascus Goats. *J. Anim. Feed Sci.* 12(1): 33-44.
- Gougoulis, D. A., I. Kyriazakis, and G. C. Fthenakis. 2010. Diagnostic Significance of Behaviour Changes of Sheep: A Selected Review. *Small Rumin. Res.* 92(1–3): 52–56.
- Gurgeira, D. N., C. Crisostomo, L. V. C. Sartori, C. C. P. Paz, G. Delmilho, A. J. Chay-canul, H. J. N. Bedoya, W. H. O. Vega, M. S. Bueno, and R. L. D. Costa. 2022. Characteristics of Growth, Carcass and Meat Quality of Sheep with Different Feed Efficiency Phenotypes. *Meat Sci.* 194:108959.
- Haaland, G. L., and H. F. Tyrrell. 1982. Effects of Limestone and Sodium Bicarbonate Buffers on Rumen Measurements and Rate of Passage in Cattle. *Anim. Sci. J.* 55(4):935–42.
- Hall, M. B. 1998. Striking A Balance: Protein Feding and Performance. *Proceedings Florida Dairy Production 35<sup>th</sup> Conference*. University of Florida, Gainesville Florida. 15-21.

- Hall, M. B., and G. B. Huntington. 2008. Nutrient Synchrony: Sound in Theory, Elusive in Practice. *J. Anim. Sci.* 86(14): 287–292.
- Hermon, Suryahadi, K. G. Wiryawan, dan S. Hardjosoewignjo. 2008. Nisbah Sinkronisasi Suplai N-Protein dan Energi dalam Rumen Sebagai Basis Formulasi Ransum Ternak Ruminansia. *Media Peternakan.* 31(3): 186–194.
- Hersom, M. 2008. Can Nutrient Synchrony Affect Performance of Forage-Fed Cattle? *Florida Ruminant Nutrition 9<sup>th</sup> Symposium.* University of Florida, Gainesville Florida.
- Hopkins, D. L., P. G. Allingham, M. Colgrave, and R. J. Van De Ven. 2013. Interrelationship Between Measures of Collagen, Compression, Shear Force and Tenderness. *Meat Sci.* 95(2): 219–223.
- Huhtanen, P., and S. Jaakkola. 1993. The Effects of Forage Preservation Method and Proportion of Concentrate on Nitrogen Digestion and Rumen Fermentation in Cattle. *Grass and Forage Sci.* 48(2):146–154.
- Jaakkola, S. dan P. Huhtanen. 1993. The Effects of Forage Preservation Method and Proportion of Concentrate on Nitrogen Digestion and Rumen Fermentation in Cattle. *Grass and Forage Sci.* 48(2): 146–154.
- Jasmin, B. H., R. C. Boston, R. B. Modesto, and T. P. Schaer. 2011. Perioperative ruminal pH changes in domestic sheep (*Ovis aries*) housed in a biomedical research setting. *J. Am. Assoc. Lab. Anim. Sci.* 50(1): 27–32.
- Jayanegara, A. (2013). Ruminal Biohydrogenation Pattern of Poly-Unsaturated Fatty Acid as Influenced by Dietary Tannin. *Wartazoa* 23(1): 9–14.
- Jayanegara, A., M. Ridla, D. A. Astuti, K. G. Wiryawan, E. B. Laconi, and Nahrowi. 2017. Determination of Energy and Protein Requirements of Sheep in Indonesia Using a Meta-Analytical Approach. *Media Peternakan* 40(2):118–127.
- Jenkins T. C., R. J. Wallace, P. J. Moate and E. E. Mosley. 2008. Board-Invited Review: Recent Advances in Biohydrogenation of Unsaturated Fatty Acids Within the Rumen Microbial Ecosystem. *J. Anim. Sci.* 86(2): 397–412.
- Karamnejad, K., M. Sari, S. Salari, and M. Chaji. 2019. Effects of Nitrogen Source on The Performance and Feeding Behavior of Lambs Fed a High Concentrate Diet Containing Pomegranate Peel. *Small Rumin. Res.* 173: 9–16.
- Kementerian Koordinator Bidang Perekonomian. 2022. Dimulainya *Pilot Project* Pengembangan Sorgum Menandai Upaya Substitusi dan Diversifikasi dalam Penguatan Ketahanan Pangan. <https://www.ekon.go.id/publikasi/detail/4419/dimulainya-pilot-project-pengembangan-sorgum-menandai-upaya-substitusi-dan-diversifikasi-dalam-penguatan-ketahanan-pangan>. (Diakses tanggal 11 Desember 2024)



- Khalasi, S. S. Al, O. Mahgoub, I. T. Kadim, W. Al-marzouqi, and S. Al-rawahi. 2010. Health and Performance of Omani Sheep Fed Salt-Tolerant Sorghum (Sorghum Bicolor) Forage or Rhodes Grass (Chloris Gayana). *Small Rumin. Res.* 91(1): 93–102.
- Khotijah, L., T. Suryati, and M. Fandi 2019. Karakteristik dan Potongan Komersial Karkas Domba Muda Umur lima Bulan Dengan Ransum Komplit yang disuplementasi Minyak bunga matahari. *Jurnal Ilmu Nutrisi Dan Teknologi Pakan* 17(3): 78–82.
- Kiran, D., and T. Mutsvangwa, 2009. Nitrogen Utilization in Growing Lambs Fed Oscillating Dietary Protein Concentrations. *Anim. Feed Sci. Technol.* 152(1–2): 33–41.
- Kleen J.L., G. A. Hooijer, J. Rehage, J. P. Noordhuizen, 2003. Subacute ruminal acidosis (SARA): a review. *J Vet Med A Physiol Pathol Clin Med* 50:406–414.
- Krämer, M., P. Lund, and M. R. Weisbjerg. 2013. Rumen Passage Kinetics of Forage- and Concentrate-Derived Fiber in Dairy Cows. *J. Dairy Sci.* 96(5): 3163–3176.
- Kruger, A. M., Lima, P.M.T. Lima, A.L. Abdalla Filho, J.G. Moro, I.Q. de Carvalho, A.L. Abdalla and C.C. Jobim. 2020. Dry matter concentration and corn silage density: Effects on forage quality. *Trop. Grassl.* 8(1): 20–27.
- Kung, L., R. D. Shaver, R. J. Grant, and R. J. Schmidt. 2018. Silage review: Interpretation of chemical, microbial, and organoleptic components of silages. *J. Dairy Sci.* 101(5): 4020–4033.
- Kuswaryan, S., C. Firmansyah, H. Supratman, D. Ramdani, and A. R. Daud, 2020. Income over feed cost of fattening lambs at various market prices. *Jurnal Sosial Bisnis Peternakan* 1(1):31.
- Leite, H. M. de S., N. V. Batista, A. F. de Lima, S. S. Firmino, A. P. P. de Assis, M. V. F. G. de L. Miranda, V. L. de Melo, R. N. de Lima, and P. de. Lima. 2021. Effects of High-Grain Diet on the Quality of Meat and Carcass of Lambs and Economic Indices of Various Diets. *J. Sustain. Dev.* 14(1): 60.
- Li, F., Z. Wang, C. Dong, F. Li, W. Wang, Z. Yuan, and S. E. Denman. 2017. Rumen Bacteria Communities and Performances of Fattening Lambs with a Lower or Greater Subacute Ruminal Acidosis Risk. *Front. Microbiol.* 8(2506): 1–10.
- Li, F., Z. Zhang, X. Li, B. Zhu, L. Guo, F. Li, and X. Weng. 2020. Effect of duration of linseed diet supplementation before slaughter on the performances, meat fatty acid composition and rumen bacterial community of fattening lambs. *Anim. Feed Sci. Technol.* 263: 114457.
- Li, Y., P. Mao, W. Zhang, X. Wang, Y. You, H. Zhao, L. Zhai, and G. Liu. 2015. Field Crops Research Dynamic expression of the nutritive values in forage

sorghum populations associated with white, green and brown midrid genotypes. *Field Crops Res.* 184(1966): 112–122.

- Liu, B., H. Huan, H. Gu, N. Xu, Q. Shen, and C. Ding. 2019. Dynamics of a microbial community during ensiling and upon aerobic exposure in lactic acid bacteria inoculation-treated and untreated barley silages. *Bioresour. Technol.* 273(50): 212–219.
- Liu, Y. F., F.F. Sun, F. C. Wan, H. B. Zhao, X. M. Liu, W. You, H. J. Cheng, G. F. Liu, X. W. Tan, and E. L. Song, 2016. Effects of three feeding systems on production performance, rumen fermentation and rumen digesta particle structure of beef cattle. *Asian-australas. J. Anim. Sci.* 29(5): 659–665.
- Lu, Z., Z. Xu, Z. Shen, Y. Tian, and H. Shen. 2019. Dietary energy level promotes rumen microbial protein synthesis by improving the energy productivity of the ruminal microbiome. *Front. Microbiol.* 10: 847.
- Luthfi, N., C. M. S. Lestari, A. Purnomoadi. 2014. Ruminal Fermentation and Blood Glucose at Low- and High-Level Intake of Growing and Mature Kacang Goat. *J. Indonesian Trop. Anim. Agric.* 39(3): 152–158.
- Maekawa, M., K. A. Beauchemin, and D. A. Christensen. 2002. Effect of Concentrate Level and Feeding Management on Chewing Activities, Saliva Production, and Ruminal Ph of Lactating Dairy Cows. *J. Dairy Sci.* 85(5): 1165–1175.
- Mahfouz, H., A. Maher, M. Ali, E. A. Megawer and A. S. Mahmoud. 2015. Response of Growth Parameters, Forage Quality and Yield of Dual-Purpose Sorghum to Re-Growth and Different Levels of FYM and N Fertilizers in New Reclaimed Soil Original Research Article Response of Growth Parameters, Forage Quality and Yield of Dual-Pu. *Int.J.Curr.Microbiol.App.Sci.* 4(11): 762–782.
- Méndez-Ortíz, F. A., C. A. Sandoval-Castro, and J. F. J. Torres-Acosta. 2012. Short term consumption of *Havardia albicans* tannin rich fodder by sheep: Effects on feed intake, diet digestibility and excretion of *Haemonchus contortus* eggs. *Anim. Feed Sci. Technol.* 176(1–4): 185–191.
- Mickdam, E., R. Khiaosa-ard, and B. U. Metzler-zebeli. 2016. Rumen Microbial Abundance and Fermentation Pro Fi Le During Severe Subacute Ruminal Acidosis and Its Modulation by Plant Derived Alkaloids In Vitro. *Anaerobe* 39: 4–13.
- Mohammad, M., M. Gorgulu, S. Goncu. 2017. The Effects of Total Mixed Ration and Separate Feeding on Lactational Performance of Dairy Cows. *Asian J. Agric. Res.* 5(2): 1–7.
- Moran, J. 2005. *Tropical Dairy Farming: Feeding Management for Small Holder Dairy Farmers in The Humid Tropics*. Landlinks press.



- Moradi-Kor, N., & J.B Zadeh, J. B. (2013). Synchronization of energy and protein on supply synthesis microbial protein. *Int. J. Adv. Biol. Biomed. Res.* 6: 594-600
- Morey, A. and C. M. Owens. 2017. Methods for Measuring Meat Texture. In *Poultry Quality Evaluation: Quality Attributes and Consumer Values*. Elsevier Ltd.
- Morita, S., M. Hirano, and S. Nishino, 1991. Effects of Arrangement of Feeding Order of Diets on Probability of Eating Bout Continuing and Frequency of Eating Bout in Steers. *Japanese Journal of Livestock Management* 26(3): 75–81.
- Moyo, M., dan I. V. Nsahlai. 2018. Rate of Passage of Digesta in Ruminants; Are Goats Different?. In: S. Kukovics (Ed.). *Goat Science*. Intechopen.
- Nagalakshmi, D., and K. Dhanalakshmi. 2013. Effect of Processing of Sorghum Stover Based Diets on Performance, Values of Haematological and Biochemical Parameters and Immune Response in Growing Nellore Lamb. *Iran. J. Appl. Anim. Sci.* 3(4): 679–685.
- Nagaraja, T. G., and E. C. Titgemeyer. 2007. Ruminal Acidosis in Beef Cattle: The Current Microbiological. *J. Dairy Sci.* 90(07): E17–E38.
- Nawroth, C., J. Langbein, M. Coulon, V. Gabor, S. Oesterwind, J. Benz-Schwarzburg, and E. V. Borell. 2019. Farm Animal Cognition-Linking Behavior, Welfare and Ethics. *Front. vet. sci.* 6:1–16.
- NRC. 1985. *Nutrien Requirements of Sheep (sixth)*. National Academy Press: Washington D.C.
- Owens, F. N. and W. G. Bergen. 1983. Nitrogen Metabolism in Ruminant Animals, Historical Perspective, Current Understanding and Future Implications. *J. Anim. Sci.* 57: 498–518.
- Palka, K. and H. Daun. 1999. Changes in Texture, Cooking Losses, And Myofibrillar Structure of Bovine M. Semitendinosus During Heating. *Meat Sci.* 51(3): 237–243.
- Pathak, A. K. 2008. Various Factors Affecting Microbial Protein Synthesis in The Rumen. *Vet. World.* 1(6): 186–189.
- Pematilleke, N., M. Kaur, B. Adhikari, and P. J. Torley. 2022. Relationship Between Instrumental and Sensory Texture Profile of Beef Semitendinosus Muscles with Different Textures. *J. Texture Stud.* 53(2): 232–241.
- Piao, M. Y., H. J. Kim, J. K. Seo, T. S. Park, J. S. Yoon, K. H. Kim, and J. K. Ha. 2012. Effects of Synchronization of Carbohydrate and Protein Supply in Total Mixed Ration with Korean Rice Wine Residue on Ruminal Fermentation, Nitrogen Metabolism and Microbial Protein Synthesis in Holstein Steers. *Asian-Australas J. Anim. Sci.* 25(11):1568–1574.

- Plaizier, J. C., S. Li, H. M. Tun, and E. Khafipour. 2017. Nutritional Models of Experimentally-Induced Subacute Ruminant Acidosis (SARA) Differ in Their Impact on Rumen and Hindgut Bacterial Communities in Dairy Cows. *Front. Microbiol.* 7:2128.
- Plascencia, A., and R. Zinn. 2014. The Rumen Is Not A “Black Box”. Proceedings Conference Scientific Seminar Managing Ruminant Nutrition- Torn between High Performance and Welfare, Eltville Germany.
- Pontes, M. H., A. Sevostyanova, and E. A. Groisman. 2015. When Too Much ATP Is Bad for Protein Synthesis. *J. Mol. Biol.* 427(16): 2586–2594.
- Prache, S., N. Schreurs, and L. Guillier. 2022. Review: Factors Affecting Sheep Carcass and Meat Quality Attributes. *Animal* 16: 100330.
- Priolo, A., D. Micol, J. Agabriel, S. Prache, and E. Dransfield. 2002. Effect of Grass or Concentrate Feeding Systems on Lamb Carcass and Meat Quality. *Meat Sci.* 62(2): 179-185.
- Puastuti, W., D. Yulistiani, I. W. Mathius. 2012. Respon Fermentasi Rumen dan Retensi Nitrogen dari Domba yang Diberi Protein Tahan Degradasi dalam Rumen. *J. Ilmu Ternak dan Vet.* 17: 67-72.
- Putri, E. M., M. Zain, L. Warly, and Hermon. (2021). Effects of Rumen-Degradable-To-Undegradable Protein Ratio in Ruminant Diet on In Vitro Digestibility, Rumen Fermentation and Microbial Protein Synthesis. *Vet. World* 14(3): 640–648.
- Rai, P. 2023. Role of Essential Amino Acids in Protein Synthesis and Muscle Growth. *J. Biochem. Res.* 6(4): 92–96.
- Raju, J., J. Narasimha, N. N. Kumari, T. Raghunanadan, V. C. Preetam, A. A. Kumar, and P. R. K. Reddy. 2021. Feeding Value of Sorghum Stover Fed to Tropical Hair Sheep as Complete Rations in Chop, Mash, Pellet, and Block Forms. *Vet. World.* 14(8): 2273–2281.
- Raju, J., J. Narasimha, N. Nalini, T. Raghunandan, V. Chinni, A. Ashok, and P. R. Reddy. 2021. Effect of Complete Diets Containing Different Dual-Purpose Sorghum Stovers on Nutrient Utilization and Growth Performance in Sheep. *Small Rumin. Res.* 201: 106413.
- Ramos-Bruno, E., C. A. Sandoval-Castro, J. F. J. Torres-Acosta, L. A. Sarmiento-Franco, R. Torres-Fajardo, J. I. Chan-Pérez, and G. I. Ortiz-Ocampo. 2021. Nitrogen Retention in Hair Sheep Lambs with A Gradient of *Haemonchus Contortus* Infection. *Vet. Parasitol.* 296: 109488
- Ramos-Morales, E., A. Arco-Pérez, A. I. Martín-García, D. R. Yáñez-Ruiz, P. Frutos, and G. Hervás. 2014. Use of Stomach Tubing as An Alternative to Rumen Cannulation to Study Ruminant Fermentation and Microbiota in Sheep and Goats. *Anim. Feed Sci. Technol.* 198: 57–66.

- Rianto, E., D. Anggalina, S. Dartosukarno, dan A. Purnomoadi, 2006. Pengaruh Metode Pemberian Pakan Terhadap Produktivitas Domba Ekor Tipis. Prosiding Seminar Nasional Teknologi Peternakan Dan Veteriner 2006: 361–365
- Roldán, M., T. Antequera, A. Martín, A. I. Mayoral, and J. Ruiz. 2013. Effect of Different Temperature-Time Combinations on Physicochemical, Microbiological, Textural and Structural Features of Sous-Vide Cooked Lamb Loins. *Meat Sci.* 93(3): 572–578.
- Ruppel, K. A., R. E. Pitt, L. E. Chase, and D. M. Galton. 1995. Bunker Silo Management and Its Relationship to Forage Preservation on Dairy Farms. *J. Dairy Sci.* 78(1): 141–153.
- Salinas-Chavira, J., L. J. Almaguer, C. E. Aguilera-Aceves, R. A. Zinn, M. Mellado, and O. Ruiz-Barrera. 2013. Effect of Substitution of Sorghum Stover with Sugarcane Top Silage on Ruminant Dry Matter Degradability of Diets and Growth Performance of Feedlot Hair Lambs. *Small Rumin. Res.* 112(1–3): 73–77.
- Santos, A. C. P., E. M. Santos, G. G. P. Carvalho, L. F. B. Pinto, D. S. Pina, A. F. Perazzo, A. Fernandes, T. Vinicius, C. Nascimento, J. Silva, D. Oliveira, and G. Barreto. 2021. Productive and Metabolic Parameters, Carcass and Meat Characteristics of Lambs Fed Sorghum Silage Treated with Urea and *Lactobacillus Buchneri*. *Livest. Sci.* 251: 104603.
- Santoso, Budi, S. P. S. Budhi, B. P. Widyobroto, and M. Soejono. 1998. Ruminant Fermentation and Microbial Nitrogen Synthesis in Buffalo Fed Fibrous Feeds. *Bulletin of Animal Science (Supplement)*:204–211.
- Sastradipradja, D. (1998). Glucose in Ruminants: A Review. *Hayati J. Biosci.* 5(3): 59-65.
- Savage, R. M., M. L. Smith, E. B. Silva, and J. L. Kung. 2015. The Effects of Packing Density and Air Stress on Corn Silage Inoculated with *Lactobacillus Buchneri* 40788. *Proceedings of the 17th International Silage Conference July 2015*: 368–371.
- Seddik, H., L. Xu, Y. Wang, and S. Y. Mao. 2019. animal A rapid shift to high-grain diet results in dynamic changes in rumen epimural microbiome in sheep. *Animal.* 13(8): 1614–1622.
- Seephueak, W., W. Ngampongsai, and P. Chanjula. 2010. Effects of Palm Oil Sludge in Concentrate on Nutrient Utilization and Rumen Fermentation in Thai Native Cattle. *Khon Kaen Agr. J.* 38(supplement): 129–133.
- Singh, S., B. V. Bhat, G. P. Shukla, D. Gaharana, and U. Y. Anele. 2017. Nutritional Evaluation of Different Varieties of Sorghum Stovers in Sheep. *Anim. Feed Sci. Technol.* 227: 42–51.

- Sniffen, G.J., J. D. O'connor, P. J. Van Soest, D. G. Fox and J. B. Russel. 1992. A Net Carbohydrate and Protein System for Evaluating Cattle Diets It Carbohydrate and Protein Availability. *J. Anim. Sci.* 70: 3562-3577
- Soeparno. 2015. Ilmu dan Teknologi Daging. Cetakan keenam. Gadjah Mada University Press. Yogyakarta
- Sondakh, E. H. B., L. M. Yusiati, H. Hartadi, and E. Suryanto. 2012. The Effect of Methanogenic Inhibitor Feed on Propionic Acid and Lamb Meat Chemical Quality. *J. Indonesian Trop. Anim. Agric.* 37(3):183–188.
- Storm, E., E. R. Øskov, and R. Smart. 1984. The Nutritive Value of Rumen Micro-Organisms in Ruminants. *Br. J. Nutr.* 52(3): 613–620.
- Subhan, A., K. A. Kamil, dan D. Heriyadi, 2019. Pengaruh Rumpun Domba Terhadap Lama Waktu Makan dan Lama Ruminasi. *Jurnal Ilmu Ternak Universitas Padjadjaran* 19(1): 62.
- Sucu, E., H. Kalkan, O. Canbolat, and I. Filya. 2016. Effects of Ensiling Density on Nutritive Value of Maize and Sorghum Silages. *Rev. Bras. Zootec.* 45(10): 596–603.
- Sumarno, D. S. Damardjati, M. Syam, dan Hermanto. 2013. Sorgum Inovasi Teknologi dan Pengembangan. IAARD Press. Jakarta
- Sun, L., N. Na, X. Li, Z. Li, C. Wang, X. Wu, Y. Xiao, G. Yin, S. Liu, Z. Liu, Y. Xue, and F. Yang. 2021. Impact of Packing Density on The Bacterial Community, Fermentation and In Vitro Digestibility of Whole-Crop Barley Silage. *Agriculture* 11(7):672.
- Sunando, H., S. Rahayu, and M. Baihaqi. 2016. Tingkah Laku Domba Garut Jantan Muda Dengan Pemeliharaan Intensif Yang Diberi Ransum Limbah Tauge Pada Waktu Pemberian Yang Berbeda. *Jurnal Ilmu Produksi Dan Teknologi Hasil Peternakan* 4(1):218–226.
- Tabacco, E., F. Righi, A. Quarantelli, and G. Borreani. 2011. Dry Matter and Nutritional Losses During Aerobic Deterioration of Corn and Sorghum Silages as Influenced by Different Lactic Acid Bacteria Inocula. *J. Dairy Sci.* 94(3): 1409–1419.
- Tian, J., N. Xu, B. Liu, H. Huan, H. Gu, C. Dong, C. Ding. 2020. Interaction Effect of Silo Density and Additives on The Fermentation Quality, Microbial Counts, Chemical Composition and In Vitro Degradability of Rice Straw Silage. *Bioresour. Technol.* 297(50): 122412.
- Tokifuji, A., Y. Matsushima, K. Hachisuka, K. Yoshioka. 2013. Texture, Sensory and Swallowing Characteristics of High-Pressure-Heat-Treated Pork Meat Gel as a Dysphagia Diet. *Meat Sci.* 93(4): 843–848.
- Usman, Y., 2015. Perbedaan Laju Alir Partikel Pakan Berbagai Pakan Serat Dalam Sistem Rumen Sapi. *Jurnal Agripet* 15(2):123–128.

- Van Soest, P. J., J. B. Robertson, and B. A. Lewis. 1991. Methods for Dietary Fiber, Neutral Detergent Fiber, and Nonstarch Polysaccharides in Relation to Animal Nutrition. *J. Dairy Sci.* 74(10): 3583–3597.
- Villalba, J. J., A. Bach, and I. R. Ipharraguerre. 2011. Feeding Behavior and Performance of Lambs Are Influenced by Flavor Diversity. *J. Anim. Sci.* 89(8): 2571–2581.
- Villalba, J. J., S. Ates, and J. W. Macadam, 2021. Non-fiber Carbohydrates in Forages and Their Influence on Beef Production Systems. 5: 566338.
- Wahyono T, S. N. W. Hardani, D. Ansori, T. Handayani, D. Priyoatmojo, Sihono, Firsoni, W. T. Sasongko, I. Sugoro. 2018. Profil Kecernaan In Vitro Tanaman Sorgum Hasil Pemuliaan Dengan Mutasi Radiasi. Seminar Nasional APISORA, Jakarta (ID): Pusat Aplikasi Isotop dan Radiasi BATAN
- Wahyono, T., I. Sugoro, A. Jayanegara, K. G. Wiryawan, and D. A. Astuti. 2019. Nutrient Profile and In vitro Degradability of New Promising Mutant Lines Sorghum as Forage in Indonesia. *Adv. Anim. Vet. Sci.* 7(9): 810–818.
- Wang, K., B. Xiong, and X. Zhao. 2022. Could Propionate Formation Be Used to Reduce Enteric Methane Emission in Ruminants?" *Sci. Total Environ.* 855:158867.
- Warner, R. D., P. L. Greenwood, D. W. Pethick, D. M. Ferguson 2010. Genetic And Environmental Effects on Meat Quality. *Meat Sci.* 86(1): 171–183.
- Weston, A. R., R. W. Rogers, Pas, and T. G. Althen. 2002. The Role of Collagen in R Meat: Tenderness. *The Professional Animal Scientist* 18: 107–111.
- Widyobroto, B. P., S. P. S. Budhi, dan A. Agus. 2007. Pengaruh Aras Undegraded Protein Dan Energi Terhadap Kinetik Fermentasi Rumen Dan Sintesis Protein Mikroba Pada Sapi [ Effect of Undegraded Protein and Energy Level on Rumen Fermentation Parameters and Microbial Protein Synthesis in Cattle]. *J. Indon. Trop. Anim. Agric.* 32(3):194–200.
- Wina, E., & I. W. R. Susana. 2013. Manfaat Lemak Terproteksi Untuk Meningkatkan Produksi dan Reproduksi Ternak Ruminansia. *Wartazoa* 23(4):176–184
- Wu, H., P. Zhang, F. Zhang, M. S. R. Shishir, S. S. Chauhan, I. Rugoho, H. Suleria, G. Zhao, B. Cullen, and L. Cheng. 2022. Parameters, Nitrogen Excretion, and Behaviour of Sheep. *Animals* 12(225):1–12.
- Wulandari, S. A. Agus, M. Soejono, M. N. Cahyanto, and R. Utomo. 2014. Performa Produksi Domba Yang Diberi Complete Feed Fermentasi Berbasis Pod Kakao Serta Nilai Nutrien Tercernanya Secara in Vivo. *Buletin Peternakan* 38(1):42.
- Xiong, X., X. Liu, X. Zhu, Y. Tan, Z. Wang, and J. Xu. 2017. Genetics and Molecular Biology A Mutation in PHKG1 Causes High Drip Loss and Low Meat Quality in Chinese Ningdu Yellow Chickens. *Poult. Sci.* 101(1):101556.

- Yang, J. Y., J. Seo, H. J. Kim, S. Seo, and J. K. Ha. 2010. Nutrient Synchrony: Is it a Suitable Strategy to Improve Nitrogen Utilization and Animal Performance? *Asian Australas. J. Anim. Sci.* 23(7): 972–979.
- Zadeh, J. B., Z. Moradi Kor, and N. Moradi Kor, 2013. Synchronization of Energy and Protein on Supply Synthesis Microbial Protein. *Int. J. Adv. Biol. Biom. Res.* 1(6): 594-600
- Zhang, Y., X. Zhang, F. Li, C. Li, D. Zhang, X. Li, Y. Zhao, and W. Wang. 2021. Exploring the Ruminal Microbial Community Associated with Fat Deposition in Lambs. *Animals.* 11(12): 1–18.
- Zhang, Z., X. Niu, F. Li, F. Li, and L. Guo. 2020. Ruminal Cellulolytic Bacteria Abundance Leads to The Variation in Fatty Acids in The Rumen Digesta and Meat of Fattening Lambs. *J. Anim. Sci.* 98(7): 1–8.