

DAFTAR PUSTAKA

- Al-Dobaib, S.N. and H. Mousa. (2009). Benefits and risks of growth promoters in animal production. *J.Food, Agric. Environ.* 7: 202 - 208.
- Adiguna, P. 2014. *The Secret of Herbal*. CV. Solusi Distribusi. Yogyakarta.
- Alamsyah, A.T. 2004. Perubahan bilangan peroksida tepung tulang kaki ayam broiler selama penyimpanan dalam bahan pengemas yang berbeda. Skripsi, Program Studi Teknologi Hasil Ternak. Fakultas Peternakan, Institut Pertanian Bogor, Bogor.
- Agus, A. 2008. *Panduan Bahan Pakan Ternak Ruminansia. Bagian Nutrisi dan Makanan Ternak*. Fakultas Peternakan, Universitas Gadjah Mada, Yogyakarta.
- Amir, A.N. dan P.F. Lestari. 2013. Pengambilan oleoresin dari limbah ampas jahe industri jamu (PT. Sido Muncul) dengan metode ekstraksi. *Jurnal Teknologi Kimia dan Industri* 2(3): 88 - 95.
- Anggorodi, R. 1994. *Ilmu Makanan Ternak Umum*. PT Gramedia Pustaka Utama, Jakarta.
- Bata, M. 2008. Pengaruh molases pada amoniasi jerami padi menggunakan urea terhadap pencernaan bahan kering dan bahan organik *in vitro*. *Agripet* 8(2): 15 – 20.
- Bergman, E.N. (1990) Energy contributions of volatile fatty acids from the gastrointestinal tract in various species. *Physiol. Rev.* 70: 567 - 590.
- Bernhoft, A. 2010. A brief review. In: *Bioactive Compounds in Plants - Benefits and Risks for Man and Animals*. A. Bernhoft (ed.). Norwegian Acad. of Sci. and Letters. Oslo, Norway. pp. 11 – 17.
- Blummel, M. and E.R. Ørskov. 1993. Comparison of *in vitro* gas production and nylon bag degradability of roughages in predicting feed intake in cattle. *J.Anim. Feed Sci. Technol.* 40: 109 - 119.
- Bueno, I.C.S., D.M.S.S. Vitti, H. Louvandini, and A.L. Abdalla. 2008. A new approach for *in vitro* bioassay to measure tannin biological effects based on a gas production technique. *Anim. Feed Sci. Technol.* 141: 153 - 170.
- Busquet, M., S. Calsamiglia, A. Ferret, and C. Kamel. 2006. Plant extracts affect *in vitro* rumen microbial fermentation. *J. Dairy Sci.* 89: 761 - 771.
- Castro-Montoya J.M., Makkar, H.P.S., Becker, K. 2011. Chemical composition of rumen microbial fraction and fermentation parameters as affected by tannin and saponins using an *in vitro* rumen fermentation. *Can. J. Anim. Sci.* 91: 433 – 448.

- Danuarsa. 2006. Analisis proksimat dan asam lemak pada beberapa komoditas kacang-kacangan. *Buletin teknik pertanian* Vol. 11 No. 1.
- Defano. 2000 . Ilmu Makanan Ternak. Gajah Mada University Press Fakultas Peternakan Universitas Gajah Mada, Yogyakarta.
- Foulkes, D.T. 1986. Practical Feeding System for Ruminants Based on Sugar Cana and Its by Product. In : Dixon, R.M. (Ed). Ruminant Feeding System Zing Fibrous Agricultural Residus. International Development Program of Australian University and Collages Limited (IDP). Canberra.
- Garrido, A., A. Gomez-Cabrera, J.E. Guerrero, and J.M. van der Meer. 1991. Effects of treatment with polyvinylpyrrolidone and polyethylene glycol on Faba bean tannins. *Anim. Feed Sci. Technol.* 35: 199 - 203.
- Getachew, G., H.P.S. Makkar, and K. Becker. 2001. Method of polyethylene glycol application to tannin-containing browses to improve microbial fermentation and efficiency of microbial protein synthesis from tannin-containing browses. *Anim. Feed Sci. Technol.* 92: 51 - 57.
- Hadi, Rendi Fathoni, Kustantinah, dan Hari Hartadi. 2011. Kecernaan in Sacco Hijauan Leguminosa Dan Hijauan Non- Leguminosa Dalam Rumen Sapi Peranakan Ongole. *Buletin Peternakan* Vol 35(2): 79 – 85.
- Hafez, E.S.E. 2000. Metode Analisis Proksimat. Erlangga. Jakarta.
- Hagerman, A.E. 1992. Tanin-protein interaction. Phenolic eompounds in food and their effects on health I. American Chemical Society. Washington DC.
- Hagerman, A.E., M.E. Rice, and N.T. Richard. 1998. Mechanisms of protein precipitation for two tannins, pentagalloyl glucose and apicatechin16 (4-8) catechin (procyanidin). *J. Agric. Food Chem.*
- Harborne, J.B. 1984. *Phytochemical Methods: A Guide to Modern Technique of Plant Analysis.* (2nd edn). Chapman and Hall. London.
- Harfiah. 2005. Penentuan nilai indeks beberapa pakan hijauan ternak domba. *J. Sains dan Teknologi* 5 (3): 114 - 121.
- Hartadi, H., S. Reksohardiprodjo, dan A.D. Tillman. 2005. Tabel Komposisi Pakan Untuk Indonesia. Cetakan ke-5. Gadjah Mada University Press, Yogyakarta.
- Hardianto, R. dan N. Sunandar. 2009. Petunjuk Teknis Pembuatan Pakan Lengkap untuk Ternak Ruminansia. Balai Pengkajian Teknologi Pertanian. Jawa Barat.
- Haryanto, B. and A. Djajanegara. 1992. Estimates of energy and protein requirements of sheep and goats in the humid tropics. *Prosiding the International Biometeorology Conference.* Sept 3-7. Australia.

- Hungate, R.E. 1966. *The Rumen and Its Microbes*. Academic Press, New York and London.
- Jayanegara, A. dan A. Sofyan. 2008. Penentuan aktivitas biologis tanin beberapa hijauan secara *in vitro* menggunakan 'hohenheim gas test' dengan polietilen glikol sebagai determinan. *J.Anim.Sci.* 31: 44 – 52.
- Jayanegara A., A. Sofyan, H.P.S. Makkar, and K. Becker. 2009. Gas production kinetics, organic matter digestibility and methane production in *vitro in* hay and straw diets supplemented by tannin-containing forages. *Media Peternakan.* 32(2): 120 – 129.
- Kamra, D.N., M. Pawar, and B. Singh. 2012. Effect of plant secondary metabolites on rumen methanogens and methane emissions by ruminants. In: *Dietary Phytochemicals and Microbes*. Springer Netherlands. Pp. 351 - 370.
- Kisworo, A.N., A. Agus, Kustantinah, and B. Suwignyo. 2016. Physicochemical characteristics identification and secondary metabolite analysis of solid herbal waste as source of feed rich fiber and supplement for ruminants. *Animal production.* 18(2): 75 – 84.
- Kustantinah. 2008. Anti nutritional factor of cassava product. Proceeding the 13th Animal Science Congress of the Asian-Australian Association of Animal Production Societies (AAAP). Sept 22-26. Hanoi, Vietnam.
- Kustantinah-Adiwimarta. 2012. *Pengukuran Kualitas Pakan Sapi*. PT. Citra Aji Parama. Yogyakarta.
- Lu, S. and H. Chen. 1999. A thermotolerant and high acetic acid-producing *Bacteriana acetobacter* sp. II 4-2. *J. Applied Microbiol.* 86 (1): 55-62.
- Lu, H., Wen Xin Zou, Jun Cai Meng, Jun Hu, dan Ren Xian Tang. 2000. New bioactive metabolites produced by *Colletotrichum* sp., an endophytic fungus in *Artemisia annua*. *El Sevier.* Vol. 151 No1.
- Mahaputra, S., P. Kurniadhi, Rokhman, dan Kadiran. 2003. Analisis biaya pemeliharaan domba dengan *complete feed*. *Buletin Teknik Pertanian* 8: 47 - 50.
- Makkar, H.P.S., M. Blümmel, and K. Becker. 1995. Formation of complexes between polyvinyl pyrrolidone and polyethylene glycol with tannins and their implications in gas production and true digestibility in *in vitro* techniques. *Brit. J. Nutr.* 73: 897 - 913.
- Makkar, H.P.S. 2003. *Quantification of Tannins in Tree and Shrub Foliage. A Laboratory Manual*. Kluwer Academic Publishers.
- Makkar, H.P.S. 2005. Use of nuclear and related technique to develop simple tannin assays for predicting and improving the safety and efficiency of feeding ruminants on tanniniferous tree foliage:

- Achievements, result implications, and future research. *Anim. Feed Sci. Technol.* 122: 3 - 12.
- Mariyono dan E. Romjali. 2007. Petunjuk Teknis Teknologi Inovasi Pakan Murah untuk Usaha Pembibitan Sapi Potong. Pusat Penelitian dan Pengembangan Peternakan, Pasuruan. Jawa Barat.
- Martopo, S., R.B. Kasmidjo, dan Surjono. 1994. Karakterisasi limbah padar jamu untuk digali kemungkinan pemanfaatannya. Laporan Penelitian. Pusat Penelitian Lingkungan Hidup. Lembaga Penelitian UGM. Yogyakarta.
- Mathius, I.W. dan B. Soetrisno. 1994. Prosiding Seminar Nasional Sains dan Teknologi Peternakan. Pengolahan dan Komunikasi Hasil-Hasil Penelitian. Buku I. Ciawi, Bogor.
- Maynard, L.A., J.K. Loosly, H.F Hints, and R.G. Werner. 1979. *Animal Nutrition*. 7th ed. London Group Ltd. London.
- Menke, K.H., L. Raab, A. Salewski, H. Steingass, D. Fritz, and W. Scheneider. 1979. The estimation of the digestibility and metabolizable energy content of ruminant feedstuff from the gas production when they are incubated with rumen liquor. *J. Agric. Sci.* 93: 217 - 222.
- Min, B.R., T.N. Barry, G.T. Attwood, and W.C. McNabb. 2003. The Effect of condensed tannins on the nutrition and health of ruminants fed fresh temperate forages. *Anim. Feed Sci. Technol.* 106: 3 - 19.
- Min, B.R., W.E. Pinchak, J.D. Fulford, and R. Puchala, 2005. Wheat pasture bloat dynamics in-vitro ruminal gas production and potensial bloat mitigation with condensed tannins. *J. Anim. Sci.* 83: 1322 - 1331.
- Ørskov, E.R. and P. McDonald. 1979. The estimation of protein degradability in the rumen from incubation measurements weighed according to rate of passage. *J. Agric. Sci.* 92: 499 - 503.
- Pangestu, E. 2005. Evaluasi serat dan suplementasi zink dalam ransum berbahan hasil samping industri pertanian pada ternak ruminansia. Disertasi. Institut Pertanian Bogor, Bogor.
- Patra, A.K. and J. Saxena. 2010. A new perspective on the use of plant secondary metabolites to inhibit methanogenesis in the rumen. *Phytochemistry* 71: 1198 - 1222.
- Patra, A.K., B.R. Min, and J. Saxena. 2012. Dietary tanin on microbial ecology of the gastrointestinal tract in ruminants. In: *Dietary Phytochemicals and Microbes*. A.K. Patra (ed.). Springer Dordrecht Heidelberg, New York, London. pp. 237 - 262.
- Pond, W.G., D.C. Church, and K.R. Pond, 1995. *Basic Animal Nutrition and Feeding*. 4th ed. John Wiley and Sons. New York.

- Ranjhan, S.K and N.H Pathak. 1980. Management and Feeding of Bufaloes. Vicas Publishing House Put. Ltd, New Delhi.
- Smith, A.H., E. Zoetwdal, and R.I. Mackie. 2005. Bacterial mechanism to overcome inhibitory effect of dietary tannins. *Microbs. Ecol.* 50: 197 - 205.
- Suharti, S., D.N. Aliyah, dan Suryahadi. 2018. Karakteristik fermentasi rume *in vitro* dengan penambahan sabun kalsium minyak nabati pada *buffer* yang berbeda. *J. Ilmu Nutrisi dan Teknologi Pakan.* 16: 56 - 64.
- Tangendjaja, B., E. Wina, T. Ibrahim, dan B. Falmer. 1992. Kaliandra (*Calliandra calothyrsus*) dan pemanfaatannya. Balai Penelitian Ternak dan The Australian Centre for International Agriculture Research (ACIAR). pp. 13 – 42.
- Tillman, A.D., H. Hartadi., S. Reksohadiprojo., S. Prawirokusumo, dan S. Lebdosoekojo. 1998. Ilmu Makanan Ternak Dasar. Gadjah Mada University Press. Fakultas Peternakan UGM.
- Udo, H.M.J. and I.G.S. Budisatria. 2011. Fat tailed sheep in Indonesia: An essential resource for smallholders. *Trop. Anim. Health Prod.* 43(7): 1411 - 1418.
- Utomo, R. 2012. Evaluasi Pakan dengan Metode Noninvasif. (Edisi ke-1). PT Citra Aji Parama. Yogyakarta.
- Van Soest, P.J. 1994. Nutritional Ecology of the Ruminants. 2nd ed. Cornell University Press, Ithaca.
- Wodzicka-Tomaszewska, I.M. Mashka, A. Djajanegara, S. Gardiner, dan T.P. Wiradaya. 1993. Produksi Kambing dan Domba di Indonesia. Sebelas Maret University Press. Surakarta.
- Yusiati, L.M., M. Soejono, Z. Bachrudin, B.P. Widyobroto, dan S.P.S. Budhi. 1999. Model estimasi sintesis protein mikrobia rumen berdasarkan ekskresi hasil metabolisme basa purin, manfaatnya dalam evaluasi protein ruminansia indogenous Indonesia dan kualitas bahan pakan. Laporan penelitian hibah bersaing VII/DPPM/97?PHBVII/1/V/1998.
- Zhang, T.T., Z.B. Yang, W.R. Yang, S.Z. Jiang, and G.G. Zhang. 2011. Effects of dose and adaptation time of ginger root (*Zingiber officinale*) on rumen fermentation. *J. Anim. Feed Sci.* 20: 461 - 471.