BAB 6. KESIMPULAN DAN SARAN

6.1 Kesimpulan

Berdasarkan hasil penelitian yang didapatkan sampai dengan Tahun II dapat disimpulkan bahwa :

1. Serbuk daun seligi yang digunakan sebagai suplemen pakan dapat meningkatkan kandungan nutrisi dan senyawa metabolik sekunder pakan komersial puyuh.
2. Serbuk daun seligi yang digunakan sebagai suplemen pakan dapat mempengaruhi kondisi serologi dan hematologi pada puyuh. Secara umum pemberian serbuk daun seligi meningkatkan respon antibody, terbukti terjadinya peningkatan haemagglutinasi titer (HA/HI titer), terjadi penurunan AST dan ALT pada puyuh. Demikian pula setelah ternak diinfeksi dengan virus ND 10^6 ml velogenik (*chellence test*) selama 2 minggu tidak menyebabkan kematian pada ternak puyuh yang diberi serbuk daun seligi.
3. Secara umum pemberian 8% suplemen serbuk daun seligi dapat meningkatkan respon antibody. Pemberian 4 dan 6% serbuk menurunkan AST (SGOT) dan ALT (SGPT), tidak menyebabkan infeksi, kondisi hematologi dan hitung jenis leukosit (DLC) serta jumlah leukosit (TLC) puyuh relatif tetap.
4. Serbuk daun seligi yang digunakan sebagai suplemen pakan juga dapat meningkatkan berat badan dan konsumsi pakan, tetapi sedikit menurunkan produksi telur.

7.2 Saran

Berdasarkan hasil penelitian yang telah dilakukan, maka disarankan untuk menggunakan serbuk daun seligi sebagai *feed supplement* alami dengan takaran 4-6% pada pakan, karena tidak mempengaruhi kesehatan dan pencernaan puyuh, bahkan dapat meningkatkan nilai nutrisi pakan komersial puyuh dan respon antibody pada puyuh yang diinfeksi virus ND velogenik.

DAFTAR PUSTAKA

Adeneye, A.A., O.O Amole, A.K. Adeneye. 2006. The hypoglycemic and Hypocholesterolemic activities of the aqueous leaf and seed extract of *Phyllanthus amarus* in mice. *J. Fitoterapia*. 77:511-514.

Ahmed, R., S.J. Moushumi, H. Ahmed, M. Ali, H. Reza, W.M. Haq, R. Jahan, and M. Rahmatullah, 2010. A study of serum total cholesterol and triglyceride lowering activities of *P. Emblica* L. (*Euphorbiaceae*) fruits in rats. Advances in Natural and Applied Sci. 4(2): 168-170.

Alan, W.H., J.E. Lancaster and B. Toth. 1978. Newcastle Disease Vaccines. Food and Agriculture Organization of the United Nations. Rome, Italy.

Aldous, E.W. and D.J. Alexander. 2001. Technical review : Detection and differentiation of Newcastle disease virus (Avian paramyxovirus type I). Avian Pathol. 30: 117-128.

Alexander, D.J. 2001. Newcastle disease-The Gordon Memorial Lecture. Br. Poult. Sci. 42:5-22.

Association of Offical Analytical Chemists (AOAC). 2000. Official Method of Analysis of The Association of Analytical Chemists. 17th Rev. Ed. Association of Official Analytical Chemists. Washington DC.

Bankole, H.A., O.A. Magbagbeola, O.B. Adu, A.A. Fatai and B.A. James, 2011. Biochemical effect of ethanolic extract of *Phyllanthus amarus* (*Euphorbiaceae*) on plasma nitric oxide and penile cyclic guanosine monophosphate (cGMP) in mature male guinea pigs. *Asian J. of Biochemistry*. 6 (3) : 291-299.

Close, W. and K.H. Menke. 1986. *Manual Selected Tropics in Animal Nutrition*. 2nd Ed. The Institute of Animal Nutrition. Universitas of Hohenhelm.

Dalimarta, S. 2007. Atlas Tumbuhan Obat Indonesia.Trubus Agriwidya. Jakarta.

Daniells, S. 2007. Antioxidants may stop fat cells formation, say study.

Ensminger, M.E. 1980. Poultry Science. Printers and Publisher Inc. Danville. Illinois.

Fauziah, O., A.R. Omar, I. Patimah and I. Aini. 2001. Microscopic evaluating of Newcastle disease virus (NDV) a killer in chicken but a possible live saver in human. J. Elect Micro Soc Thailand. 16 : 272-275.

Harborne. JB. 1996. Metode Fitokimia: Penuntun Cara Moderen Menganalisis Tumbuhan. Cetakan D. Penerjemah K. Padmawinata dan I. Soediro. ITB. Bandung.

Hashmi, K. 1999. Effect of Bio-immune on immunity against Newcastle disease and biochemical parameters of broiler chickens. Nuclear Institute for Agriculture & Biologi (NIAB). Falsalabad.

James, D.B., N. Elebo, A.M. Sanusi and L. Odoemene, 2010. Some biochemical effect of intraperitoneal administration of *P. amarus* aqueous extracts on normaglycemic albino rats. *Asian J. of Med. Sci*. 2(1):7-10.

Jayaram, S. and S.P. Thyagarajan. 1996. Inhibition of HbsAg secretion from Alexander cell line by *P. amarus*. Indian J. Pathol Microbiol. 39 (3) : 211-215.

Jeffrey, D. 2003.Pigeons and Exotic Newcastle disease. http://animalscience.ucdavis.edu/Avian/cplbackkissues.htm.

Ji XH, Qin JZ, Wang WY, Zhu ZY, Liu XT. 1993. Effect of extracts from *Phyllanthus urinaria* on HBsAg production in OLC/PRF/5 cell line (Human hepatoma cell line). Chung-Kao-Chung-Yao-Tsa-chih. 18(8):496-498.

Liu, KC, Lin MT, Lee SS, Chiou JF, Ren S, and Lien EJ. 1999. Antiviral tannins Two Phyllanthus species. Planta med. 65(1):43-46.

Maat, S. 1997. Phyllanthus ninuri L sebagai imunostimulator pada mencit.

Disertasi. Program Pascasarjana Universitas Airlangga.
Malhortra, S and AP. Singh. 2006. Hepatoprotective use of Phyllanthus ninuri. J. Research Ayurveda. 4: 124-127.
Marin, MCP Villegas, J. Bennet and Seal. 1996. Virus characterization and Sequance of fusion protein gene cleavage site of recent Newcastle disease virus field isolates. Avian dis. 40 : 382-390.
Morais, S.A.L., E.A. Nascimento, C.R.A.A. Queiroz, D. Pilo-Veloso and M.G. Drumond, 1999. Studies on polyphenols and lignin of *Astronium urundeuva* wood. J. Braz. Chem. Soc. 10 : 447-452.
Notka, F, GR. Meier, and R Wagner. 2003. Inhibition of wild-type hman Immunodeficiency virus and reverse transcriptase inhibitor-resistant variants By Phyllanthus amarus. Antiviral res. 58(2):175-186.
Obianime, A.W., F.I. Uche. 2008. The phytochemical screening and the effects of methanolic extract of Phyllanthus amarus leaf on the Biochemical parameters of Male guinea pigs. *J. Appl Sci. Environ. Manage*. 12(4)73-77.
Odetola,A.A., S.M. Akkojenu. 2000. Antidiarrhoeal and gastrointestinal potentials of the aqueous extracts of *Phyllanthus amarus* (Euphorbiaceae). *Afri. J. Med. Sci.* 29:119-122.
Ogata, T, Higuchi H, Mochida S, Matsumoto H, Kato A, Endo T, Kaji A, and Kaji H. 1992. HIV-1 reverse transcriptase inhibitor from Phyllanthus ninuri. AIDS Res Hum Retroviruses. 8(11):1937-1944.
Omar, A.R.A. A. Ideris, A. M. Ali F. Othman, K. Yussof, J.M. Abdullah, H.S. M Wali, M. Zawawi and N. Mayyappan. 2003. An overview on the development of Newcastle disease virus as an anti-cancer therapy. Malasian J. of Madical Sci. 10 (1) :4-12.
Ott, M, Thyagarajan SP and Gupta S. 1997. Phyllanthus amarus suppreses hepatitis-B virus by interrupting interactions between HBV enhancer-1 and cellular transcription factors. Eur J. Clin Invest. 27(11):908-915.
Pedersen, J.C., D.A. Senne, P.R. Woolcock, H. Kinde, D.J. King, M.G. Wise, B. Panigrahy and B.S. Seal. 2004. Phylogenic relationship among virulent Newcastle disease virus isolates from the 2002-2003 outbreak in California and other recent outbreak in North America. J. Clin Microbiol. 42 (5) : 2329-2334.
Pettit, GR, DchaulfelbergerDE, Nieman RA, Difresne C, and Saenz-Renauld JA.1990. Antineoplastic agents. 177. Isolation and structure of phyllanthostatin6. J. Nat Prod. 53(6):1406-1413.
Qureshi, S.A., W. Asad and V. Sultana, 2009. The effect of *Phyllanthus emblica* Linn on type-II diabetes, triglycerides and liver-specific enzyme. Pak. J. Nutr., 8: 125-128.
Roth, J.D.,B.L. Roland, R.L. Cole, J.L. Trevaskis, C. Weyer, J.E. Kode, C.M. Anderson, D.G Parkes, and A.D Baron. 2008. Leptin responsiveness restored by amylin agonism in diet-induced obesity: evidence from nonclinical and clinical studies. *Proc. Natl. Acad. Sci*. USA. 105 (20): 7257-7262.
Sainis, K.B., P.F. Sumariwalla, A. Goel, G.J. Chintalwar, A.T. Sipahimalani, dan A. Banarji. 1997. Immunomodulatory properties of stem extract of Tinospora cordifolia: cell targets and active principles, in Immuno-modulation (Uphadayay SN, Ed). Narosa Publishing House. New Delhi, India.
Saputra, K., Soeprapto M., Soedoko R. 2000. Terapi biologi untuk kanker. Airlangga Univ. Pres. Surabaya.
Schunack, W.K., K. Mayer, dan M. Haake. 1990. *Senyawa Obat*. Gadjah Mada Univ. Press. Yogyakarta.

Seal, B.S.D., D.J. King, D.P. Locke, D.A. Senne and M.W. Jackwood. 1998. Phylogenetic relationship among highly virulent Newcastle disease virus Isolates obtained from exotic birds and poultry from 1989 to 1996. J. Clin. Microbial. 36 : 1141-1145.

Shen, B., J. Yu, S. Wang, E.S. Chu, V.W. Wong, X. Zhou, G. Lin, J.J. Sung, and H.L. Chan. 2008. Phyllanthus urinaria ameliorates the severity of nutritional steatohepatitis both in vitro and in vivo. *J. Hepatology*. 47(2):473-83

Sopandi, T . 2005. Pengaruh ekstraks etanol dari Daun Seligi Terhadap gambaran darah Kelinci. LPPM. UPB. Surabaya.

Steel RGD dan J.H. Torrie. 1996. Prinsip dan Prosedur Statistika, suatu pendekatan biometric, PT.Gramedia Pustaka Utama.Jakarta.

Sudaryani. 2003. Konsep Beternak Burung Puyuh. http://health.kompas.com read/2011/06/03/13385556/Telur.Puyuh.Si.Mungil.

Suthienkul O, Miyasaki O, Chulisiri M, Kositanont U, dan Oishi K. 1993. Retriviral reverse transcriptase inhibitory activity in Thai herbs and spices:screening with Maloney murine leukemia viral enzim. Southeast Asian J. Trop Med Public Health. 24)4):751-755.

Umbare, R.P., G.S. Mate, D.V. Jawalkar, S.M. Patil, dan S.S. Dongare. 2009. Quality evaluation of *Phyllanthus amarus* (Schumach) leaves extract for its hypolipidemic activity. *J. Biology and Medicine*. Vol. 1 (4) : 28-33.

Wardah, T. Sopandi, dan Wurlina. 2007. Identifikasi Senyawa Aktif Ekstrak Etanol Daun Seligi dan Pengaruhnya terhadap Gambaran Serologi dan Hematologi Ayam Broiler yang Diinfeksi oleh Virus Newcastle. *J. Obat Bahan Alam*. Vol. 6 (2) : 88-95.

Wardah. 2011. Kapasitasi Serbuk Daun Seligi (*P. buxifolius*) sebagai Imunostimulan Herbal Penurun Kolesterol Daging Ayam Broiler. Laporan Hasil Penelitian Fundamental. Untag. Surabaya.

Wardah, T. Sopandi, E.B. Aksono H., and Kusriningrum. 2012. Reduction of Intracellular Lipid Accumulation, Serum Leptin and Cholesterol Levels in Broiler Fed Diet Supplemented with Powder Leaves of *P. buxifolius*. *Asian Journal of Agric. Res.* 6 (3) : 106-117.

Wardah, T. Sopandi dan J. Rahmahani. 2015. Penggunaan Pakan Fungsional Immunostimulan dan Penurun Kolesterol Telur Berbasis Serbuk Daun Seligi Guna Mengatasi Kendala Ketersediaan Pakan dan Tingginya Mortalitas pada Puyuh. Laporan Hasil Penelitian Strategis Nasional Tahun I. Untag. Surabaya.

Wirahadikusumah, M. 1985. Biokimia. Metabolisme energi, Karbohidrat dan Lipid. Penerbit ITB. Bandung.

Zhang, LZ, Guo, YJ., Tu, GZ, Guo WB and Miao, F. 2000. Studies on chemical Constituents of *Phyllanthus urinaria* L. Zhongguo Zhong Yao Za Zhi. 25 (10) : 615-617.