

DAFTAR PUSTAKA

- Abang, F.B. and H.A. Shittu 2015. Effect of fermentation on the chemical composition of peeled taro cocoyam meal (*Colocasia esculenta*). Journal of Agriculture and Veterinary Science. 8 : 31 - 33.
- Abdel-Moemin, A.R. 2014. Oxalate content of Egyptian grown fruits and vegetables and daily common herbs. Journal of Food Research. 3 : 66 - 77.
- Abdulrashid, M. and L.N. Agwunobi. 2009. Taro cocoyam (*Colocasia esculenta*) meal as feed ingredient in poultry. Pakistan Journal of Nutrition. 5 : 666 - 673.
- Adebowale, O.J. and K. Maliki. 2011. Effect of fermentation period on the chemical composition and functional properties of pigeon pea (*Cajanus cajan*) seed flour. International Food Research Journal. 18 : 1329 - 1333.
- Adegbehingbe, K.T., F.C. Adetuyi, and F.A. Akinyosoye. 2014. Effect of fermentation on nutrient and anti-nutrient contents of ground-cooked lima bean (*Phaseolus lunatus*) seeds using *Bacillus subtilis* and *Bacillus pumilus*. British Microbiology Research Journal. 4 : 1285 - 1298.
- Adegbehingbe, K.T. 2014. Effect of fermentation on nutrient composition and antinutrient contents of ground lima bean seeds fermented with *Aspergillus fumigatus*, *Rhizopus stolonifer* and *Saccharomyces cerevisiae*. International Journal of Advanced Research. 2 : 1208 -1215.
- Adekunle, K.S.A., A.O. Fanimu, S. S. Abiola, and Y. A. Samsons. 2006. Potential of breadfruit meal as alternative energy source to maize in diet of broiler chickens. The Journal of Poultry Science. 43 : 242 – 249.
- Adeleke, B.S., B.J. Akinyele, O.O. Olaniyi, and Y.A. J. Agboola. 2017. Effect of fermentation on chemical composition of cassava peels. Asian Journal of Plant Science and Research. 7 :31 – 38.
- Ahmed, A., I. Zulkifli, A.S. Farjam, J.B. Liang, and E.A. Awad. 2014. Effect of solid state fermentation on nutrient content and ileal amino acids digestibility of canola meal in broiler chickens fermentation on nutrient content and ileal amino acids digestibility of canola meal in broiler chickens. Italian Journal of Animal Science. 13 : 3293 - 3298.
- Akande, K.E., U.D. Doma, H.O. Agu, and H.M. Adamu. 2010. Major antinutrients found in plant protein sources : their effect on nutrition. Pakistan Journal of Nutrition. 9 : 827 - 832.
- Allison, M.J., H.M. Cook, and K A. Dawson. 1981. Selection of oxalate degrading rumen bacteria in continuous cultures. Journal of Animal Science. 53 : 810 - 815.
- Al-Wahsh, I. A., Y. Wu, and M. Liebman. 2012. A comparison of two extraction methods for food oxalate assessment. Journal of Food Research. 1 : 233 - 239.

- Anand, R., P.C. Dorrestein, C. Kinsland, T.P. Begley, and S.E. Ealick. 2002. Structure of oxalate decarboxylase from *Bacillus subtilis* at 1.75 Å resolution. *Biochemistry Journal*. 41 : 7659 - 7669.
- Anbazzhagan, K., C.E Raja, and G.S Selvam. 2007. Oxalotrophic *Paracoccus alcaliphilus* isolated from *Amorphophallus* sp. rhizoplane. *World Microbiology and Biotechnology Journal*. 23 : 1529 - 1535.
- Anonimous. 2017. Statistik Peternakan dan Kesehatan Hewan. Direktorat Jenderal Peternakan dan Kesehatan Hewan. Kementerian Pertanian, Republik Indonesia, Jakarta. Tersedia pada : [http://ditjenpkh.pertanian.go.id/userfiles/File/Buku Statistik 2017\(ebook\).pdf?time=1505127443012](http://ditjenpkh.pertanian.go.id/userfiles/File/Buku%20Statistik%202017(ebook).pdf?time=1505127443012). Diakses pada : 9 Juni 2018.
- Anonimous. 2017. Impor Jagung. Kementerian Perindustrian, Republik Indonesia, Jakarta. Tersedia pada : <http://kemenperin.go.id/artikel/14044/Impor-Jagung,-Bulog-Kucurkan-Rp1,8-Triliun>. Diakses pada : 9 Juni 2018.
- AOAC. 2005. Official methods of analysis of the associate of official analytical Chemist. 18th Ed. AOAC International, Washington DC.
- Apata, D.F. 2011. Effect of *Terminalia catappa* fruit meal fermented by *Aspergillus niger* as replacement of maize on growth performance, nutrient digestibility, and serum biochemical profile of broiler chickens. *Biotechnology Research International*. 1 : 1 - 6.
- Applegate, T.J. and M.S. Lilburn. 2002. Growth of the femur and tibia of a commercial broiler line. *Poultry Science*. 81 : 1289 - 1294.
- Aremu, C.Y., M.A. Agiang, and J.O.I. Ayatse. 1995. Nutrient and antinutrient profiles of raw and fermented cocoa beans. *Plant Foods for Human Nutrition*. 48 : 210 – 223.
- Bachruddin, Z. 2014. Teknologi Fermentasi Pada Industri Peternakan. Cetakan pertama Gadjah Mada university Press. Yogyakarta.
- Banes, S. S., Kususiayah, dan Y. Fenita. 2017. Pengaruh ekstrak daun katuk (*Sauropus androgynus*) fermentasi terhadap kualitas karkas broiler. *Jurnal Sain Peternakan Indonesia*. 2 : 199 - 208.
- Bangun, G.D.D., L.D. Mahfudz, dan D. Sunarti. 2013. Effect of seaweed *Gracilaria verrucosa* meal utilization in broiler's diet on weight and size of tibia and tarsometatarsus. *Animal Agricultural Journal*. 2 : 489 - 496.
- Beheraa, S.S., and R.C. Ray. 2016. Konjac glucomannan, a promising polysaccharide of *Amorphophallus konjac* K. Koch in health care. *International Journal of Biological Macromolecules*. 92 : 942 – 956.
- Bisswanger, H. 2014. Enzyme assays. *Perspectives in Science*. 1 : 41 – 55.

- Bradbury, J.H. and R.W. Nixon. 1998. The acidity of raphides from the edible aroids. *Journal of The Science of Food and Agriculture*. 76 : 608 - 616.
- Bulus, E.D., E.A. Ibe, S.T. Yakubu, I. Samueland, and O.J. Makinde. 2014. Performance of broiler chickens fed two varieties of guinea corn and millets as replacement for maize. *Iranian Journal of Applied Animal Science*. 4 : 541 - 547.
- Burrell, M.R., V.J. Just, L. Bowater, S.A. Fairhurst, L. Requena, D.L. Lawson, and S. Bornemann. 2007. Oxalate decarboxylase and oxalate oxidase activities can be interchanged with a specificity switch of up to 282 000 by mutating an active site lid. *Biochemistry*. 9 : 947 - 959.
- Campieri, C., M. Campieri, V. Bertuzzi, E. Swenne. Matteuzzi, S. Stefoni, F. Pirovano, C. Centi, S. Ulisse, G. Famularo, and C. de-Simone. 2001. Reduction of oxaluria after an oral course of lactic acid bacteria at high concentration. *Kidney International*. 60 : 1097 - 1105.
- Canibe, N., and B. B. Jensen. 2003. Fermented and nonfermented liquid feed to growing pigs : effect on aspects of gastrointestinal ecology and growth performance. *Journal of Animal Science*. 81 : 2019 – 2031.
- Centeno, V., G.D. de-Barboza, A. Marchionatti, V. Rodriguez, and N.T. de-Talamoni. 2009. Molecular mechanisms triggered by low-calcium diets. *Nutrition Research Reviews*. 22 : 163 - 74.
- Chairiyah, N., N. Harijati, and R. Mastuti. 2013. Variation of calcium oxalate (CaOx) crystals in porang (*Amorphophallus muelleri* Blume). *American Journal of Plant Science*. 4 : 1765 - 1772.
- Chairiyah, N., N. Harijati, and R. Mastuti. 2016. Variation of calcium oxalate (CaOx) crystals in porang corms (*Amorphophallus muelleri* Blume) at different harvest time. *American Journal of Plant Sciences*. 7 : 306 - 315.
- Chattopadhyay, A., B. Saha, S. Pal, A. Bhattacharya, and H. Sen. 2010. Quantitative and qualitative aspects of elephant foot yam. *International Journal of Vegetable Science*. 16 : 73 - 84.
- Cheeke, P.R. and L.R. Shull. 1985. *Natural Toxicants in Feeds and Poisonous Plants*. AVI Publishing Company, INC. Westport, Connecticut.
- Cheeke, P.R. 1995. Endogenous toxins dan mycotoxins in forage grasses dan their effects on livestock. *Journal of Animal Science*. 73 : 909 - 918.
- Chen, L., A. Xie, R. Jia, Y. Shen, W. Tang, and L. Chuanhao. 2007. Influence of *Bacillus subtilis* on the growth of calcium oxalate. *Crystal Research and Technology*. 42 : 881 – 885.

- Chen, K., W. Kho, S. You, R. Yeh, S. Tang, C. Hsieh, and C.E.T. Al. 2009. Effects of *Bacillus subtilis* var. *natto* and *Saccharomyces cerevisiae* mixed fermented feed on the enhanced growth performance of broilers. *Poultry Science*. 88 : 309 - 315.
- Chen, W., X. Z. Zhu, J. P. Wang, Z. X. Wang, and Y. Q. Huang. 2013. Effects of *Bacillus subtilis* var. *natto* and *Saccharomyces cerevisiae* fermented liquid feed on growth performance, relative organ weight, intestinal microflora, and organ antioxidant status in Landes geese. *Journal of Animal Science*. 91 : 978 – 985.
- Chiang, G., W.Q. Lu, X.S. Piao, J.K. Hu, L.M. Gong, and P.A. Thacker. 2010. Effects of feeding solid-state fermented rapeseed meal on performance, nutrient digestibility, intestinal ecology and intestinal morphology of broiler chickens. *Asian-Australasian Journal of Animal Sciences*. 2 : 263 - 271.
- Choi, Y.J, S.R. Lee, and J.W. Oh. 2014. Effects of dietary fermented seaweed and seaweed fusiforme on growth performance, carcass parameters and immunoglobulin concentration in broiler chicks. *Asian -Australasian Journal of Animal Sciences*. 27 : 862 - 870.
- Cote, G.G and M. Gibernau. 2012. Distribution of calcium oksalat crystals in floral organs of araceae in relation to pollination strategy. *American Journal of Botany*. 7 : 1231 - 1242.
- Donkoh, A., C.C. Atuahene, Y.B. Poku-Prempeh, and I.G. Twum. 1999. The nutritive value of chaya leaf meal (*Cnidoscolus aconitifolius* (Mill.) Johnston) studies with broiler chickens. *Animal Feed Science and Technology*. 77 : 163 - 172.
- Driver, J.P., G. M. Pesti, R. I. Bakalli, and H. M. Edwards. 2006. The effect of feeding calcium- and phosphorus-deficient diets to broiler chickens during the starting and growing-finishing phases on carcass quality. *Poultry Science* 85 :1939 – 1946.
- Dutton, M.V., M. Kathiara, I.M. Gallagher, and C.S. Evans. 1994. Purification and characterization of oxalate decarboxylase from *Coriolus versicolor*. *FEMS Microbiology Letters*. 116 : 321 - 326.
- Eed, J. 2013. Factors affecting enzyme activity. *Essai*. 10 : 48 - 51.
- Eka, O.U. 1980. Effect of fermentation on the nutrient status of locust bean. *Food Chemistry*. 5 : 303 - 308.
- Eleyinmi, A.F., Y.A. Adebowale, I.B. Oluwalana, O.J. Ajisafe, and T.F. Akintomide. 2006. Effect of dietary inclusion of *Garcinia kola*, *Gongronema latifolium* and *Vernonia amygdalina* on the nutritional quality of a complementary diet. *Research Journal of Biological Science*. 1 : 43 - 49.

- Emiola, I. A., A. D. Ologhobo, and R. M. Gous. 2007. Performance and histological responses of internal organs of broiler chickens fed raw, dehulled, and aqueous and dry-heated kidney bean meals. *Poultry Science*. 86 : 1234 – 1240.
- Ermalia, A.A.U., O.Sjofian, and I.H.Djunaidi. 2016. Evaluation nutrients of rice bran second quality fermented using rumen fluid. *Bulletin of Animal Science*. 40 : 113 - 123.
- Fazhi, X., L. Lvmu, X. Jiaping, Q. Kun¹, Z. Zhide, and L. Zhangyi. 2011. Effects of fermented rapeseed meal on growth performance and serum parameters in ducks. *Asian-Australasian Journal of Animal Sciences*. 24 : 678 – 684.
- Fang, H. C., P.T. Lee, P.J. Lu, C.L. Chen, T.Y. Chang, C.Y. Hsu, H.M. Chung, and K.J. Chou. 2008. Mechanisms of star fruit-induced acute renal failure. *Food and Chemical Toxicology*. 46 : 1744 - 1752.
- Farida, D.N. 2005. Properties of suweg (*Amorphophallus campanulatus* B1) and its glisemic index. *Journal of Food Technology and Industry*. 3 : 254 - 259.
- Feng, J., X. Liu, Z.R. Xu, Y.P. Lu, and Y.Y. Liu. 2007. Effect of fermented soybean meal on intestinal morphology and digestive enzyme activities in weaned piglets. *Digestive Diseases and Sciences*. 52 : 1845 – 1850.
- Ferket, P.R. and A.G. Gernat. 2006. Factors that affect feed intake of meat birds : a review. *International Journal of Poultry Science*. 5 : 905 - 911.
- Franceschi, V.R. and P. A. Nakata. 2005. Calsium oxalate in plants formation and fuction. *Annual Review of Plant Biology*. 56 : 61 – 71.
- Fujiwara, K., M. Yamazaki, H. Abe, K. Nakashima, Y. Yakabe, M. Otsuka, Y. Ohbayashi, Y. Kato , K. Namai, A. Toyoda , Y. Miyaguchi, and Y. Nakamura. 2009. Effect of *Bacillus subtilis* var. natto fermented saybean on growth performance, microbial activity in the caeca and cytokine gene expression of domestic meat type chickens. *Japan Poultry Science*. 46 : 116 – 122.
- Gajare, S.M. 2014. *Amorphophallus campanulatus* : review of medicinal properties. *International Journal of Pharmaceutical Sciences*. 3 : 122 - 130.
- Gao, Z., H. Wu, L. Shi, X. Zhang, R. Sheng, F. Yin, and R. Gooneratne. 2017. Study of *Bacillus subtilis* on growth performance, nutrition metabolism and intestinal microflora of 1 to 42 d broiler chickens. *Animal Nutrition*. 3 : 109 – 113.
- Gasperz, V. 2006. Teknik Analisa dalam Penelitian Percobaan. Cetakan III. Tarsito. Bandung.
- Giardina, S., C. Scilironi, A. Michelotti, A. Samuele, F. Borella, M. Daglia, and F. Marzatico. 2014. *In vitro* anti-inflammatory activity of selected oxalate-degrading probiotic bacteria : potential applications in the prevention and treatment of hyperoxaluria. *Journal of Food Science*. 3 : 384 - 390.

- Gomathi, S., P. Sasikumar, K. Anbazhagan, S. Sasikumar, M. Kavitha, M. S. Selvi, and G.S. Selvam. 2014. Screening of indigenous oksalat degrading lactic acid bacteria from human faeces and south Indian fermented foods : assessment of probiotic potential. *Science World Journal*. 1 : 1 - 11.
- Han, J.C., H.X. Qu, J.G. Wang, Y.F. Yan, J.L. Zhang, L. Yang, M. Zhang, and Y.H. Cheng. 2015. Effects of fermentation products of *Cordyceps militaris* on growth performance and bone mineralization of broiler chicks. *Journal of Applied Animal Research*. 43 : 236 - 241.
- Hancock, R.D. and R. Viola. 2001. The use of micro-organisms for L-ascorbic acid production : current status and future perspectives. *Applied Microbiology and Biotechnology*. 56 : 567 - 576
- Hardini, D. 2010. The nutrient evaluation of fermented rice bran as poultry feed. *International Journal of poultry Science*. 9 : 152 – 154.
- Harijati, N., N. Chairiyah, S.D. Kartika, and R. Handayani. 2009. Morfologi kristal kalsium oksalat pada *Amorphophallus campanulatus*. Prosiding Keanekaragaman Hayati, Seminar Nasional Biologi XX dan Kongres PBI XIV UIN Maliki, Malang, 517 – 523.
- Harijati, N., S. Widyarti, and Azrianingsih. 2011. Effect of dietary *Amorphophallus* sp. from east java on LDL-C rats (*Rattus novergicus* wistar strain). *Journal of Tropical Life Science*. 2 : 50 - 54.
- Haryani, K. dan Hargono. 2008. Proses pengolahan iles-iles (*Amorphophallus* sp.) menjadi glukomannan sebagai gelling agent pengganti boraks. *Momentum*. 4 : 38 – 41.
- Hassan, S.A.J., I.H. Lokman, S.A. Naji, A.B.Z. Zuki, and A.B. Kassim. 2016. Effects of dietary supplementation of wet fermented feed with probiotic on the production performance of Akar Putra chicken. *Asian Journal of Poultry Science*. 10 : 72 - 77.
- Hidayat, I. 2005. The effect of pH on endo-1,4- β -glucanase activity from *Bacillus* sp. AR 009. *Journal of Biological Diversity*. 6 : 242 - 244.
- Hidayat, M.N.,R. Malaka, L. Agustina, and W. Pakiding. 2016. Abdominal fat percentage and carcass quality of broiler given probiotics *Bacillus* spp. *Scientific Research Journals*. 4 : 33 - 37.
- Hogg, S. 2005. *Essential Microbiology*. John Wiley & sons, Ltd. West Sussex.
- Horhoruw, W. M., Wihandoyo, and T. Yuwanta. 2009. The influence of seaweed *Gracilaria edulis* in the diets on the performance of pullet. *Bulletin of Animal Science*. 33 :8-16.

- Houshmand, M., K. Azhar, I. Zulkifli, M. H. Bejo, A. Meimdanipour, and A. Kamyab. 2011. Effects of non-antibiotic feed additives on performance, tibia dyschondroplasia incidence and tibia characteristics of broilers fed low-calcium diets. *Journal of Animal Physiology and Animal Nutrition* 95 : 351 - 358.
- Hu, J., W. Lu, C. Wang, R. Zhu, and J. Qiao. 2008. Characteristics of solid-state fermented feed and its effects on performance and nutrient digestibility in growing-finishing pigs. *Asian-Australasian Journal of Animal Sciences*. 21 : 1635 - 1641.
- Igbabul, B.D., J. Amove, and I. Twadue. 2014. Effect of fermentation on the proximat composition, antinutrition factor and fuctional properties of cocoyam (*Colocasia esculata*) flour. *African Journal of Food Science and Technology*. 5 : 67 - 74.
- Indarto, E. Jamhari, F. Zahra, Zuprizal, and Kustantina. 2011. The effect of using dried distillers grain with soluble with low energy diet on carcass, abdomen fat and liver of broiler. *Bulletin of Animal Science*. 35 : 71 - 78.
- Irlanslan, H., R.G. Palmer, J. Imsande, and H.T. Horner. 1997. Quantitative determination of calcium oxalate and oxalate in developing seeds of soybean (*Leguminosae*). *American Journal of Botany*. 9 : 1042 - 1046.
- Jazi, V., F. Boldaji, B. Dastar, S. R. Hashemi, and A. Ashayerizadeh. 2017. Effects of fermented cottonseed meal on the growth performance, gastrointestinal microflora population and small intestinal morphology in broiler chickens. *British Poultry Science*. 58 : 402 - 408.
- Jiang, Z.L., M.X. Zhao, and L.X. Liao. 1996. Catalytic spectrophotometric methods for determination of oxalic acid. *Analytica Chimica Acta*. 320 : 139 - 142.
- Jin, Z.X., C. Wang, W. Chen, X. Chen, and X. Li. 2007. Induction of oxalate decarboxylase by oxalate in newly isolated *Pandoraea* sp. OXJ-11 and its ability to protect against *Clerotinia sclerotiorum* infection. *Canadian Journal of Microbiology*. 53 : 1316 - 1322.
- Kanyinji, F. and M. Sichangwa. 2014. Performance of broilers fed finishing diets with fermented cotton seed meal as partial replacement for soybean meal. *Journal of Animal Science*. 7 : 931 - 938.
- Karunajeewa, H. 1976. Effect of some feed additives on the performance of broiler chicks fed diets containing high levels of meat and bone meal. *Australian Journal of Experimental Agriculture and Animal Husbandry*. 16 : 685 - 690.
- Kim, B.H and G.M. Gadd. 2008. *Bacterial Physiology and Metabolism*. Cambridge University Press. Cambridge.

- Kim, S.K., T.H. Kim, S. K. Lee, K.H. Chang, S.J. Cho, K.W. Lee, and B.K. An. 2016. The use of fermentes soybean meals during early phase affects subsequent growth and physiological response in broiler chicks. *Asian-Australasian Journal of Animal Sciences*. 29 : 1287 - 1293.
- Koni, T.N.I. 2013. Effect of fermented banana peel on broiler carcass. *Indonesian Journal of Animal and Veterinary Sciences*. 18 : 153 -157.
- Koni, T.N.I., A. Paga, R. Wea, and T.A.Y. Foenay. 2015. Nutritive value dan metabolizable energi of *Amorphophallus companulatus* fermented by *Rhizopus oligosporus* as poultry feed. *Pakistan Journal of Nutrition*. 6 : 322 - 324.
- Kwak, C., B.C. Jeong, J.H. Ku, H.H. Kim, J.J. Lee, C.S. Huh, Y.J. Baek, and S.E. Lee. 2006. Prevention of nephrolithiasis by *Lactobacillus* in stone forming rats. *Urological Research*. 34 : 265 - 270.
- Lambio, A.L. 2016. *Poultry Production in The Tropics*. 2nd ed. The University of the Philippines Press. Diliman Quezon.
- Lane, B.G. 1994. Oksalat, germin and the extracelluler matrix of higher plants. *The Fabase Journal*. 1 : 294 - 301.
- La-Ragione, R.M. and M.J. Woodward. 2003. Competitive exclusion by *Bacillus subtilis* spores of *Salmonella enterica* serotype enteritidis and *Clostridium perfringens* in young chickens. *Veterinary Microbiology*. 94 : 245 - 256.
- Lateef, A., J.K. Oloke, E.B. G. Kana. S.O. Oyeniyi, O.R. Onifade, A.O. Oyeleye, O.C. Oladosu, and A.O. Oyelami. 2008. Improving the quality of agro-wastes by solid-state fermentation : enhanced antioxidant activities and nutritional qualities. *World Journal Microbiology and Biotechnology*. 24 : 2369 – 2374.
- Lee, E., B.C. Jeong, Y.H. Park, and H.H. Kim. 2014. Expression of the gene encoding oxalate decarboxylase from *Bacillus subtilis* and characterization of the recombinant enzyme. *BMC Research Notes*. 7 : 598 - 602.
- Leeson, S. and J.D. Summers. 2005. *Commercial Poultry Nutrition*. 3rd ed. Nottingham University Press, Nottingham.
- Li, H., and Z.L. Dao. 2006. New Species of *Amorphophallus* (Araceae) from Yunnan, China. *Novon*. 16 : 240 - 243.
- Li, F., L. Feng Li , T. Zhao, G. Mao, Y. Zou, D. Zheng, M. Takase, W. Feng, X. Wu, and L. Yang. 2013. Solid-state fermentation of industrial solid wastes from the fruits of milk thistle *Silybum marianum* for feed quality improvement. *Applied Microbiology and Biotechnology*. 97 : 6725 - 6737.
- Lie, M., M. Najoan dan F.R. Wolayan. 2015. Peningkatan nilai nutrien (protein kasar dan serat kasar) limbah solid kelapa sawit terfermentasi dengan *Trichoderma reesei*. *Jurnal LPPM Bidang Sains dan Teknologi*. 2 : 34 - 43.

- Mahazar, N.H., N.F. Sufian, A.S. Meor-Hussin, H. Norhayati, M. Mathawan, and Y. Rukayadi. 2015. *Candida* sp. as a starter culture for cocoa (*Theobroma cacao* L) beans fermentation. *International Food Research Journal*. 22 : 1783 - 1787.
- Makkar, H.P., S.P. Siddhuraju, and K. Becker. 2007. *Plant Secondary Metabolites*. Human Press. New Jersey.
- Mathius, I.W. and A.P. Sinurat. 2001. Utilization of unconventional feedstuffs for animal production. *Indonesian Bulletin of Animal and Veterinary Science*. 11 : 20 - 31.
- Mitchell, D.A., M. Berovi, and N. Krieger. 2002. Overview of solid state bioprocessing. *Biotechnology Annual Review*. 8 : 3-123.
- Mogna, L. M. Pane, S. Nicola, and E. Raiteri. 2014. Sreening of different probiotic strain for their *in vitro* ability to metabolise oxalates. *Journal of Clinical Gastroenterology*. 48 : 91 - 95.
- Molnar, A.K., B. Podmaniczky, P. Kurti, I. Tenk, R. Glavits, G. Y. Virag and Z. S. Szabo. 2012. Effect of different concentrations of *Bacillus subtilis* on growth performance, carcasse quality, gut microflora and immune response of broiler chickens. *British Poultry Science*. 52 : 658 - 665.
- Montgomery, R.E.X., R.L. Dryer, T.W. Conway, and A.Spestor. 1993. *Biokimia*. Penerjemah M. Ismadi. Cetakan IV. Gadjah Mada University Press. Yogyakarta.
- Muntiha, M. 2001. Teknik pembuatan preparat histopatologi dari jaringan hewan dengan pewarnaan hematoksilin dan eosin. *Temu Teknis Fungsional Non Peneliti* : 126-131.
- Mutus, R., N. Kocabagli, M. Alp, N. Acar, M. Eren, and S.S. Gensens. 2006. The effect of dietary probiotic supplementation on tibia bone characteristics and strength in broiler. *Poultry Science*. 85 : 1621 - 1625.
- Naji, S.A., I. F. B. Al-Zamili, H. S. A. Jawad, and J. K. M. Al-Gharawi. 2016. The effects of fermented feed on broiler production and intestinal morphology. *Pertanika Journal of Tropical Agricultural Science*. 39 : 597 – 607.
- National Research Council. 1994. *Nutrient Requirements of Poultry*. 9th ed. National Academy Press. Washington, D.C.
- Ndyomugenyi, E. K., M. W. Okot, and D. Mutetikka. 2015. The nutritional value of soaked-boiled-fermented jackfruit (*Artocarpus heterophyllus*) seed meal for poultry. *Journal of Animal and Poultry Sciences*. 4 : 49 – 57.
- Noonan, S.C and G.P. Savage. 1999. Oxalate content of foods and its effect on humans. *Asia Pacific Journal of Clinical Nutrition*. 8 : 61 - 74.

- Nuraini, A. Djulardi and A. Trisna. 2016. Palm oil sludge fermented by using lignocellulolytic fungi as poultry diet. *International Journal of Poultry Science* 16 : 6 - 10.
- Nguyen, T.V., C. Bunchasak, and S. Chantsavang. 2010. Effects of dietary protein and energy on growth performance and carcass characteristics of betong chickens (*Gallus domesticus*) during growing period. *International Journal of Poultry Science*. 9 : 468 – 472.
- Oboh, G. A., A. Akindahunsi, and A. A. Oshadi. 2012. Nutrient and anti-nutrient content of *Aspergillus niger* fermented cassava product. *Journal of Food Composition and Analysis*. 15 : 617 - 622.
- Obun, C.O. 2008. Performance, digestibility and carcass and organ weights of finisher broiler chicks fed graded level of fermented locust bean (*Parkia biglobosa*) seed meal. *Asian Journal of Poultry Science*. 2 : 17 - 23.
- Ogbe, A.O. and G. A. L. George. 2012. Nutritional and antinutrient composition of melon husks : potential as feed ingredient in poultry diet. *Research Journal of Chemical Sciences*. 2 : 35 - 39.
- Ojokoh, A.O., M.K. Daramola, and O.J. Oluoti. 2013. Effect of fermentation on nutrient and anti-nutrient composition of breadfruit (*Treculia africana*) dan cowpea (*Vigna unguiculata*) blend flours. *African Journal of Agricultural Research*. 8 : 3566 - 3570.
- Oke O.L. 1969. Oxalic acid in plants and in nutrition. *World Review of Nutrition and Dietetics*. 10 : 262 – 303.
- Oke, M.O and I. F. Bolarinwa. 2012. Effect of fermentation on physicochemical properties and oxalate content of cocoyam (*Colocasia esculenta*) flour. *International Scholarly Research Network Agronomy*. 9 : 1-4.
- Okon, B.I.,M.B. Obi, and A.A. Ayuk. 2007. Performans of quails (*Coturnix coturnix japonica*) fed graded levels of boiled sun dried taro cocoyam (*Colocasia esculenta*) as a replacement for maize. *Agricultural Journal*. 2 : 654 0 657.
- Olagunju, A.I and B. O. T. Ifesan. 2013. Changes in nutrient and antinutritional contents of sesame seeds during fermentation. *Journal of Microbiology, Biotechnology and Food Sciences*. 2 : 2407 - 2410.
- Olajide, R., A.O. Akinsoyinu, O. J. Babayemi, A. B. Omojola, A. O. Abu, and K. D. Afolabi. 2011. Effect of processing on energy values, nutrient and anti-nutrient components of wild cocoyam (*Colocasia esculenta* (L.) Schott) corm. *Pakistan Journal of Nutrition*. 10 : 29 - 34.
- Ologhobo, A.D. and I.O. Adejumo. 2011. Effects of differently processed taro (*Colocasia esculenta* [(L.) Schott]) on growth performance and carcass

characteristics of broiler finishers. *International Journal of AgriScience*. 1 : 444 – 448.

Oluwaniyi, O. O. and I.O. Bazambo. 2016. Nutritional and amino acid analysis of raw, partially fermented and completely fermented locust bean (*Parkia biglobosa*) seeds. *African Journal of Food, Agriculture, Nutrition and Development*. 16 : 10870 – 10883.

Opaleye, O., R. Rose, M. M. Whittaker, E. Woo, J. W. Whittaker, and R. W. Pickersgill. 2006. Structural and spectroscopic studies shed light on the mechanism of oxalate oxidase. *Journal of Biology and Chemistry*. 10 : 6428 - 6433.

Osisiogu, I.U.W., J.O. Uzo and E.N. Ugochukwu. 1974. The irritant effects of cocoyams. *Planta medica*. 26 : 166 - 169.

Osei, S.A. and S. Duodu. 1988. Effect of fermented cassava peel meal on the performance of broilers. *British Poultry Science*. 29 : 671 – 675.

Palupi, R. dan A. Imsya. 2011. Pemanfaatan kapang *Trichoderma viridae* dalam proses fermentasi untuk meningkatkan kualitas dan daya cerna protein limbah udang sebagai pakan ternak unggas. *Prosiding Seminar Nasional Teknologi Peternakan dan Veteriner : Teknologi peternakan dan veteriner untuk peningkatan produksi dan antisipatif terhadap dampak perubahan iklim*. Bogor, 7 - 8 Juni 2011. 672-677.

Paul, V., S. Verma, S. Sushma dan A. Paul. 2012. Effect of cooking dan processing methods on oxalate content of green leafy vegetables and pulses. *Asian Journal of Food and Agro-Industry*. 4 : 311 - 314.

Paul, K.K., M.A Bari, S.M.S Islam, and S.C. Debnath. 2013. *In vitro* shoot regeneration in elephant foot yam (*Amorphophallus conopsea* Blume). *Plant Tissue Culture and Biotechnology*. 23 : 121 - 126.

Pelczar, M.J. and E.C.S. Chan. 1986. *Dasar-dasar Mikrobiologi*. Penerjemah : Hadioetomo, R.S., T.Imas, S.S. Tjitrosomo, S.L. Angka. Universitas Indonesia Press. Jakarta.

Plummer, D.T. 1987. *An introduction to Practical Biochemistry*. Mc.Graw Hill Publishing Co.Ltd. Bombay New Delhi.

Porres, J. M., p. Aranda, m. Loã pez-jurado, and G. Urbano. 2003. Effect of natural and controlled fermentation on chemical composition and nutrient dialyzability from beans (*Phaseolus vulgaris* L.). *Journal of Agricultural and Food Chemistry*. 51 : 5144 – 5149.

Prescott, L. M., J. P. Harley, and D. A. Klein. 2002. *Microbiology*. 5th ed. WCB McGraw-Hill. New York.

- Rahman, M.M., R.B. Abdullah, and W.E.W. Khadijah. 2013. A review of oxalate poisoning in domestic animals : tolerance and performance aspects. *Journal of Animal Physiology and Animal Nutrition*. 97 : 605 - 614.
- Rath, N.C., G. R. Huff, W. E. Huff, and J. M. Balog. 2000. Factors regulating bone maturity and strength in poultry. *Poultry Science* 79 :1024 – 1032.
- Ravi, V., C.S. Ravindran, and G. Suja. 2009. Growth and productivity of elephant foot yam (*Amorphophallus paeoniifolius* (Dennst) Nicolson). *Journal of Root Crops*. 35 : 131 - 142.
- Ravindran, V. and R. Blair. 1991. Feed resources for poultry production in Asia and the Pacific region energy sources. *World's Poultry Science Journal*. 47 : 219 - 230.
- Rayani, T.F., R. Mutia, and Sumiati. 2017. Supplementation of zinc and vitamin E on apparent digestibility of nutrient, carcass traits, and mineral availability in broiler chickens. *Journal of Animal Science and Technology*. 40 : 20 - 27.
- Reddy, N.R. and M.D. Pierson. 1994. Reduction in antinutritional and toxic components in plant foods by fermentation. *Food Research International*. 27 : 281 - 290.
- Ressang, A.A. 1984. *Patologi Khusus Veteriner*. Cetakan I. Institut Pertanian Bogor. Bogor.
- Robertson, E. I., M. Brin, and L.C. Norris. 1947. The use of dehydrated beet leaves in chick rations. *Poultry Science*. 26 : 582- 587.
- Rosyidah, A.,S. Widyarti and S. Rahayu. 2013. Accumulation of calcium crystal in rat kidney. *The Journal of Tropical Life Science*. 1 : 48 - 51.
- Riadi, L. 2007. *Teknologi Fermentasi*. Graha Ilmu Yogyakarta.
- Samarasinghe, K. and A.S.B. Rajaguru.1992. Raw and processed wild colocasia corm meal (*Colocasia esculenta* (L) Schott, var. *esculenta*) as an energy source for broilers. *Animal Feed Science and Technology*. 36 : 143 - 151
- Sarkar, P.K. and J. P. Tamang. 1995. Changes in the microbial profile and proximate composition during natural and controlled fermentations of soybeans to produce kinema. *Food Microbiology*.12 : 317 - 325.
- Sandi, S., R.Palupi dan Amyesti. 2012. Pengaruh penambahan ampas tahu dan dedak fermentasi terhadap karkas, usus dan lemak abdomen ayam broiler. *Agrinak*. 2 : 1-5
- Santosa, E., N. Sugiyama, M. A. Chozin, A. P. Lontoh,S. Sudiatso, S. Kawabata, S. Hikosaka, Sutoro, and A. Hidayat. 2002. Morphological and nutritional characterization of elephant foot yam in Indonesia. *Japanese Journal of Tropical Agriculture*. 46 : 265 - 271.

- Santoso , U. , K. Tanaka , S. Ohaniand, and M. Saksida. 2004. Effect of fermented product from *Bacillus subtilis* on feed efficiency, lipid accumulation and ammonia production in broiler chicks. *Asian-Australasian Journal of Animal Sciences*. 14 : 333 - 337 .
- Santosa, E., A.D. Susila, A.P. Lontoh, A. Noguchi, K. Takahata, and N. Sugiyama. 2015. NPK fertilizer for elephant foot yam (*Amorphophallus paeoniifolius* (Dennst) Nicolson) intercropped with coffee trees. *Indonesian Journal of Agronomy*. 43 : 257 - 263.
- Sasikumar, P., S. Gomathi, K. Anbazhagan, A. Abhishek, E. Paul, V. Vasudevan, S. Sasikumar, and G.S. Selvam. 2012. Recombinant *Lactobacillus plantarum* expressing and secreting heterologous oksalat dekarboksilase prevents renal calcium oksalat stone deposition in experimental rats. *BioMed Research International*. 21 : 86 - 90.
- Scane, C.G., G. Brant, and M.E. Ensminger. 2004. *Poultry Science*. 4th ed. Pearson Prentice Hall. New Jersey.
- Scot, M.L., M.C. Nesheim, and R.J. Young. 1982. *Nutrition of The Chicken*. 3rd ed. M.L. Scott & Associates. Ithaca, New York.
- Shafey, T.M. 1991. Effects of chelating agents on the performance of growing chickens fed high calcium diets. *Australian Journal of Experimental Agriculture*. 31 : 765 – 768.
- Shi, C., Y. Zhang, Z. Lu, and Y. Wang. 2017. Solid-state fermentation of corn-soybean meal mixed feed with *Bacillus subtilis* and *Enterococcus faecium* for degrading antinutritional factors and enhancing nutritional value. *Journal of Animal Science and Biotechnology*. 8 : 50 - 58.
- Sibarani, J., V.D. Yuniarto, and L. D. Mahfudz. 2014. Percentage of carcass and non-carcass and abdominal fat of broiler chickens were given acidifier citric acid in feed double step down. *Animal Agriculture Journal*. 3 : 273 - 280.
- Singh, A. and N. Wadhwa. A Review on Multiple Potential of Aroid : *Amorphophallus paeoniifolius*. *International Journal of Pharmaceutical Sciences Review and Research*. 24 : 55 - 60.
- Soeparno. 2009. *Ilmu dan Teknologi Daging*. Cetakan V. Gadjah Mada University Press. Yogyakarta.
- Soepraptini, J., S. F. Ridho, and S. P. Koesnoto. 2012. Histopathology of renal male rats of femoral fracture with *Cissus quadrangularis* plant extract and calcium carbonate therapy. *Veterinaria Medika*. 1 : 5 - 8.
- Stanbury, P.F., A. Whitaker, and S. J. Hall. 2003. *Principles of Fermentation Technology*. Butterworth Heinemann. Burlington.
- Stauffer, C.E. 1989. *Enzyme Assay for Food Scientists*. Van Nostrand Reinhold. New York.

- Steinkraus, K.H. 1994. Nutritional significance of fermented foods. *Food Research International*. 27 : 259 - 267.
- Sugiyono. 2015. *Statistika untuk Penelitian*. Cetakan ke-26. Alfabeta, Bandung.
- Sumiatia, Farhanuddina, W. Hermana, A.Sudarmana, N.Istichomaha, and A. Setiyono. 2011. Broiler performances fed diet contained *Jatropha curcas* L. meal fermented with *Rhizopus oligosporus*. *Journal of Animal Science and Technology*. 34 : 117 - 125.
- Suprpto, W., S. Kismiyati, and E. Suprijatna. 2012. The use of eggshell meal in the quails on tibia and tarsus bones. *Animal Agricultural Journal*. 1 : 75 – 90.
- Supriyati, T. Haryati, T. Susanti, and I.W.R. Susana. 2015. Nutritional value of rice bran fermented by *Bacillus amyloliquefaciens* and humic substances and its utilization as a feed ingredient for broiler chickens. *Asian- Australasian Journal of Animal Sciences*. 28 : 231 - 238.
- Suriya, M., R. Rajput, C. K. Reddy, S. Haripriya, and M. Bashi. 2017. Functional and physicochemical characteristics of cookies prepared from *Amorphophallus paeoniifolius* flour. *Food Science and Technology*. 54 : 2156 - 2165.
- Svedruzic, D.S., C.S. Jonsson, C.G. Toyota, L.A. Reinhardt, S. Ricagno, and G.J. Lindqvist. 2007. The enzymes of oxalate metabolism : unexpected structures and mechanisms. *Archives of Biochemistry and Biophysics*. 433 : 176 - 192.
- Tandrianto, J., D. K. Mintoko dan S. Gunawan. 2014. Pengaruh fermentasi pada pembuatan mocaf dengan menggunakan *Lactobacillus plantarum* terhadap kandungan protein. *Jurnal Teknik Pomits*. 3 : 2337 – 3539.
- Tang, J. W., H Sun, X. H. Yao, Y. F. Wu, X. Wang, and J. Feng. 2012. Effects of replacement of soybean meal by fermented cottonseed meal on growth performance, serum biochemical parameters and immune function of yellow-feathered broilers. *Asian-Australasian Journal of Animal Sciences*. 25 : 393 - 400.
- Tang, H. O., X. H. Gao, F. Ji, S. Tong, and X. J. Li. 2012. Effects of a thermostable phytase on the growthperformance and bone mineralization of broilers. *Journal of Applied Poultry Research*. 21 : 476 – 483
- Tanner, A. and S. Bornemann. 2000. *Bacillus subtilis* YVRK Is an acid-Induced oxalate decarboxylase. *Journal of Bacteriology*. 182 : 5271 - 5273.
- Turroni, S., B. Vitali, C. Bendazzoli, M. Cdanela, R. Gotti, F. Federici, F. Pirovano, and P. Brigidi. 2007. Oxalate consumption by lactobacilli : evaluation of oxalyl-CoA decarboxylase and formyl-CoA transferase activity in *Lactobacillus acidophilus*. *Journal of Applied Microbiology*. 103 : 1600 - 1609.
- Wadamori, Y. L. Vanhanen, and G.P. Savage. 2014. Effect of kimchi fermentation on oxalate levels in silver beet (*Beta vulgaris* var. cicla). *Foods* 3 : 269 – 278.

- Wahju, J. 2015. Ilmu Nutisi Unggas. Cetakan VI. Gadjah Mada University Press. Yogyakarta.
- Waleed, M., A.A. Faiza, and I. Nizar. 2015. Production optimization of pullulanase enzyme produced by *Bacillus cereus* isolated from Syrian sources. International Food Research Journal. 22 : 1824 - 1830.
- Wang, Y., X.T. Liu, H.L. Wang, D.F. Li, X.S. Piao, and W.Q. Lu. 2014. Optimization of processing conditions for solid-state fermented soybean meal and its effects on growth performance and nutrient digestibility of weanling pigs. Livestock Science 170 : 91 – 99.
- Widjanarko, S.B., A. Nugroho, and T. Estiasih. 2011. Functional interaction components of protein isolates and glucomannan in food bars by FTIR dan SEM. African Journal of Food Science. 1 : 12 - 21.
- Winedar, H., S. Listyawati dan Sutarno. 2006. Daya cerna protein pakan, kandungan protein daging, dan pertambahan berat badan ayam broiler setelah pemberian pakan yang difermentasi dengan Effective Microorganisms-4 (EM-4). Bioteknologi. 3 : 14 – 19.
- Wizna, H. Abbas, Y. Rizal, A. Dharma, and I.P. Kompiang. 2009. Improving the quality of tapioca by products (onggok) as poultry feed through fermentation by *Bacillus amyloliquefaciens*. Pakistan Journal of Nutrition. 8 : 1636 - 640.
- Wu. L.Y., R.B. Tan and K.J. Shi. 2008. Effect of a dried *Bacillus subtilis* culture on gosling growth performance. British Poultry Science. 49 : 418 – 422.
- Wu, B.Q, T. Zhang, L. Q. Guo, and J. F. Lin 2011. Effects of *Bacillus subtilis* KD1 on broiler intestinal flora. Poultry Science 90 : 2493 – 2499.
- Van Eunen, K. and B.M. Bakker. 2014. The importance and challenges of *in vivo* like enzyme kinetics. Perspectives in Science. 1 : 126 – 130.
- Yuliana, N. 2012. Kinetika pertumbuhan bakteri asam laktat isolat t5 yang berasal dari tempoyak. Jurnal Teknologi Industri dan Hasil Pertanian. 13 : 108 -115.
- Yuzammi. 2009. The genus *Amorphophallus* Blume ex decaisne (araceae – thomsonieae) in Java. Reinwardtia. 13 : 1 – 12.
- Zakaria, A.K. 2011. Anticipatory policy and farmers consolidating strategy to ward national corn self sufficiency. Agricultural Policy Analysis. 9 : 261 – 274.
- Zhang, Z. F., J. H. Cho, and I. H. Kim. 2013. Effects of *Bacillus subtilis* UBTMO2 on growth performance, relative immune organ weight, gas concentration in excreta, and intestinal microbial shedding in broiler chickens. Livestock Science. 155 : 343 – 347.

Zhu, C. X. and F. Hong. 2010. Induction of an oxalate decarboxylase in the filamentous fungus *Trametes versicolor* by addition of inorganic acids. *Applied Biochemistry and Biotechnology*. 160 : 655 – 664.