

## DAFTAR PUSTAKA

- Ali, N., Sardjono, Yamashita, A., dan Yoshizawa, T. (1998). Natural co-occurrence of aflatoxins and *Fusarium* mycotoxins (fumonisins, deoxynivalenol, nivalenol and zearalenone) in corn from Indonesia. *Food Additives Contaminants* **15**:377-384.
- Aini Nur, (2013). *Teknologi Fermentasi pada Tepung Jagung*. Graha Ilmu. Yogyakarta
- Anonim. (2013). Deoxynivalenol in Food and Feed : Occurrence and Exposure. *EFSA Journal* 11:3379
- Anonim. (2015). *Outlook Komoditas Pertanian Tanaman Pangan Jagung*. Pusat Data dan Sistem Informasi Pertanian Kementerian Pertanian. Jakarta.
- Arora, D.K., dan Khacatourians, G.G. (2004). *Applied Mycology and Biotechnology : Fungal Genomics*. Elsevier BV. Netherlands.
- Awad, W.A., Ghrareebab, K., Bo'hma, J., dan Zenteko, J. (2010). Decontamination and Detoxification Strategies for the *Fusarium* Mycotoxin Deoxynivalenol in Animal Feed and the Effectiveness of Microbial Biodegradation. *Food Additives and Contaminants* **27**:510-520
- Berthiller, F., Dall'Asta, C., Schuhmacher, R., Lemmens, M., Adam, G., dan Krska, R. (2005). Masked mycotoxins: determination of a deoxynivalenol glucoside in artificially and naturally contaminated wheat by liquid chromatography– tandem mass spectrometry. *Journal of agricultural and food chemistry*, 53(9), 3421-3425.
- Bhargav, S., Panda, B.P., Ali, M., dan Javed S. (2008). Solid-State Fermentation : An Overview. *Chemical Biochemical Engineering* **22**(1):49-70.
- Binder, J., Horvath, E.M., Schatzmayr, G., Ellend, N., Danner, H., Krska, R. dan Braun, R. (1997a). Screening for deoxynivalenol-detoxifying anaerobic rumen microorganisms. *Cereal Res Commun* **25**:343–346.
- Binder, J., Horvath, E.M., Heidegger, J., Ellend, N., Danner, H., Krska, R. dan Braun, R. (1997b). A bioassay for comparison of the toxicity of trichothecene and their microbial metabolites. *Cereal Research Communications* **25**(3):489-491.
- Binder, J. (1999). A yeast bioassay for Trichothecenes. *Natural Toxins* **7**:401-406.

- Bin-Umer, M.A., McLaughlin, J.E., Basu, D., McCormick, S. dan Tumer, N.E. (2011). Trichothecene Mycotoxins Inhibit Mitochondrial Translation Implication for the Mechanism of Toxicity. *Toxins* **3**:1484-1501.
- Biselli, S., Hartig, L., Wegner, H., dan Hummert, C. (2005). Analysis of Fusarium Toxins Using LC-MS-MS : Application to Various Food and Feed Matrices. *LC GC Europe* **20**:20-32
- Borzekowski, A., Drewitz, T., Keller, J., Pfeifer, D., Kunte, H., Koch, M., Rohn, S. dan Maul, R. (2018). Biosynthesis and Characterization of Zearalenone-14-Sulfate, Zearalenone-14-Glucoside and Zearalenone-16-Glucoside Using Common Fungal Strains. *Toxins* **10**:1-15.
- BPOM. (2009). Penetapan Batas Maksimum Cemaran Mikroba dan Kimia dalam Makanan No. HK.00.06.1.52.4011. Badan Pengawas Obat dan Makanan. Jakarta.
- Brodehl, A., Moller, A., Kunte, H., Koch, M. dan Maul, R. (2014). Biotransformation of the mycotoxin zearalenone by fungi of the genera *Rhizopus* and *Aspergillus*. *FEMS Microbiol. Lett.* **359**:124-130.
- BSN. (2009). Batas maksimum kandungan mikotoksin dalam pangan. SNI No. 7385:2009. Badan Standarisasi Nasional. Jakarta.
- Chancharoonpong, C., Hsieh, P.C. dan Sheu, S.C. (2012). Enzyme production and growth of *Aspergillus oryzae* on soybean koji fermentation. *APCBEE Procedia* :1-5.
- Djunaidi, C.S., Setyabudi, F.M.C.S., dan Sardjono. (2017). The role of *Aspergillus oryzae* KKB4 in reducing and detoxifying aflatoxin B1 applied in moist-heated corn. *Malaysian Journal of Microbiology* **13(2)**:117-123.
- Fandohan, P., Hell, K., Marasas, W.F.O., dan Wingfield, M.J. (2003). Infection of Maize by *Fusarium* species and contamination with Fumonisin in Africa. *African Journal of Biotechnology* **2**:570-579
- FDA. (2002). Lipase enzyme preparation from *Aspergillus oryzae*. Food and Drug Administration. Washington.
- FDA. (2006). Lipase D Enzyme preparation from *Rhizopus oryzae*. Food and Drug Administration. Washington.

- Foroud, N. A., Shank, R. A., Kiss, D., Eudes, F., dan Hazendonk, P. (2016). Solvent and water mediated structural variations in deoxynivalenol and their potential implications on the disruption of ribosomal function. *Frontiers in microbiology*, 7, 1239.
- Fuchs, E., Binder, E.M., Heidler, D., dan Krska, R. (2002). Characterisation of Metabolite after the microbial degradation of A- and B-trichothecenes by BBSH 797. *Mycotoxin Research* 16 Suppl 1 (S1):66-69
- Garcia, C.L. (2012). Infrared Spectroscopy Applied to Identification and Detection of Microorganisms and their metabolite on cereals (Corn, Wheat and Barley). *Agricultural and Biological Sciences*. [www.intechopen.com](http://www.intechopen.com). Diakses pada tanggal 19 Oktober 2016
- Garda-Buffon, J., dan Badiale-Furlong, E. (2010). Kinetics of Deoxynivalenol by *Aspergillus oryzae* and *Rhizopus oryzae* in Submerged Fermentation. *Journal of The Brazilian Chemical Society* 21:710-714
- Garda-Buffon, J., Kupski, L. dan Badiale-Furlong, E. (2011). Deoxynivalenol (DON) degradation and peroxidase enzyme activity in submerged fermentation. *Cienc. Tecnol. Aliment., Campinas* 31(1): 198-203.
- Gowthaman, M.K., Khrisna, C. dan Moo-Young, M. (2001). Fungal solid state fermentation – an overview. In Khachatourians, G.G. and Arora, D.K. (editors). *Applied Mycology and Biotechnology* Volume 1 page 305-351. Elsevier Science B.V.
- Grenier, B., Loureiro-Bracarense, A. P., Leslie, J. F., dan Oswald, I. P. (2014). Physical and chemical methods for mycotoxin decontamination in maize. *Mycotoxin Reduct. Grain Chains*, 116-129.
- Groopman, J. D., Kensler, T. W., dan Wu, F. (2013). Food Safety: Mycotoxins—Occurrence and Toxic Effects. *Encyclopedia of Human Nutrition, Volume 2*, 337-341
- Gupta, V.K., Chattopadhyay, P., Kalita, M.C., Chaurasia, A.K., dan Kumar, H. (2010). Isolation and determination of deoxynivalenol by reversed phase high pressure liquid chromatography. *Pharmaceutical Methods* 2:25–29.
- Hackbart, H.C.S., Machado, A.R., Christ-Ribiero, A., Prietto, L., and Badiale-Furlong, E. (2014). Reduction of aflatoxin by *Rhizopus oryzae* and *Trichoderma reesei*. *Mycotoxin Research* 30:141-149.
- Halasz, A., Lasztity, R., Abonyi, T., dan Bata, A. (2009). Decontamination of Mycotoxin-Containing Food and Feed by Biodegradation. *Food Reviews International* 25:284-289

- He, J., Zhou, T., Younga, J.C., Boland G.J., dan Scott, P.M. (2010). Chemical and biological transformations for detoxification of trichothecene mycotoxins in human and animal food chains: a review. *Trends in Food Science & Technology* **21**:67-76.
- Hernandez, L.L., Ramirez-Toro, C., Ruiz, H.A., Ascacio-Valdes, J.A., Aguilar-Gonzalez, M.A., Rodriguez-Herrera, R. dan Aguilar, C.N. (2017). *Rhizopus oryzae* – Ancient microbial resource with importance in modern food industry. *International Journal of Food Microbiology* **257**:110-127.
- Ikasari, L. dan Mitchell, A. (1994). Protease production by *Rhizopus oligosporus* in solid state fermentation. *World Journal of Microbiology and Biotchnology* **10**:320-324.
- JECFA. (2002). Evaluation of certain mycotoxins in food. *WHO Technical Report Series 906*. Joint FAO/WHO Expert Committee on Food Additives. 56th Report. Geneva. Switzerland
- Ji, C., Fan, Y. dan Zhao, L. (2016). Review on biological degradation of mycotoxins. *Animal Nutrition* **2**:127-133.
- Kabak, B., Dobson, A.D.W., dan Var, I. (2006). Strategies to Prevent Mycotoxin Contamination of Food and Animal Feed : A Review. *Critical Reviews in Food Science and Nutrition* **49**:593-619.
- Karlovsky, P. (2011). Biological Detoxification of The Mycotoxin Deoxynivalenol and its use in genetically engineered crops and feed additives. *Applied Microbiology and Biotechnology* **91**:491-504.
- Klotzel, M., dan Lauber, U. (2017). New SPE Sorbent for Clean-up of Fusarium Toxin-contaminated Cereals & Cereal-based Foods, Bond Elut Mycotoxin. Application Note. [www.agilent.com/chem](http://www.agilent.com/chem) [August 21, 2017].
- Kos J., Hajnal E.J., Šarić B., Jovanov P., Nedeljković N., Milovanović I. dan Krulj, J. (2016). The influence of climate conditions on the occurrence of deoxynivalenol in maize harvested in Serbia during 2013–2015, *Food Control* **30**:734-740.
- Koswara, S. (2009). *Teknologi Pengolahan Jagung (Teori dan Praktek)*. eBook Pangan
- Kotal, F., dan Radova, Z. (2002). A Simple Method for determination of Deoxynivalenol in cereals and flours. *Czech Journal of Food Science* **20**:63-68.
- Krishna, C. (2005). Solid-State Fermentation Systems – An Overview. *Criticals Reviews in Biotechnology* **25**:1-30.

- Kusumaningtyas, E., Widiastuti, R. dan Maryam, R. (2006). Reduction of aflatoxin B1 in chicken feed by using *Saccharomyces cerevisiae*, *Rhizopus oligosporus* and their combination. *Mycopathologia* **162**:307-311.
- Lee, K.R., Yang, S.M., Cho, S.M., Kim, M., Hong, S. Chung, S.H. (2017). Aflatoxin B1 Detoxification by *Aspergillus oryzae* from Meju, a Traditional Koren Fermented Soybean Starter. *J.Microbiol.Biotechnol.* **27(1)**:57-66.
- Lindblad M., Gidlund A., Sulyok M., Börjesson T., Krska R., Olsen M., dan Fredlund E. (2013). Deoxynivalenol and other selected Fusarium toxins in Swedish wheat — Occurrence and correlation to specific Fusarium species. *International Journal of Food Microbiology* **167**:284–291.
- Madhyastha, M.S., Marquardt, R.R., Frohlich, A.A. dan Borsa, J. (1994). Optimization of Yeast Bioassay for Trichothecene Mycotoxins. *Journal of Food Protection* **57(6)**:490-495.
- Milani, J.M., 2013. Ecological conditions affecting mycotoxin production in cereals: a review. *Veterinarni Medicina* **58(8)**: 405–411.
- Moss, M.O dan Thrane, U. (2004). *Fusarium* taxonomy with relation to trichothecene formation. *Toxicology Letters* **153**:23-28.
- Ostry, V., Malir, F., Toman, J., dan Grosse, Y. (2017). Mycotoxins as human carcinogens—The IARC monographs classification. *Mycotoxin research*, 33(1), 65-73
- Payros, D., Alassane-Kpembi, I., Pierron, A., Loiseau, N., Pinton, P. Dan Oswald, I.P. (2016). Toxicology of deoxynivalenol and its acetylated and modified forms. *Arch. Toxicol.*:1-27.
- Peiris, K.H.S., Bockus, W.W. dan Dowell, F.E. (2012). Infrared Spectral Properties of Germ, Pericarp, and Endosperm Sections of Sound Wheat Kernels and Those Damaged by *Fusarium graminearum*. *Applied Spectroscopy* **66(9)**:1053-1060.
- Rahayu, E.S., Sardjono, dan Samson, R.A. (2014). *Jamur Benang (Mold) pada Bahan Pangan*. PT. Kanisius. Yogyakarta.
- Raimbault, M. (1998). General and microbiological aspects of solid substrate fermentation. *Electronic Journal of Biotechnology* **1**,1–15.
- Ranum, P., Pe~na-Rosas, J.P., dan Garcia-Casal, M.N. (2014). Global maize production, utilization, and consumption. *Annals of The New York Academy of Sciences* **1312**: 105–112.

- Reddy, K.R.N., Salleh, B., Saad, B., Abbas, H.K., Abel, C.A., and Shier, W.T. (2010). An overview of mycotoxin contamination in foods and its implications for human health. *Toxin Reviews* **29**:3–26.
- Rusono, N., Suanri, A., Candradijaya, A., Muharam, A., Martino, I., Tejaningsih, Hadi, P.U., Susilowati, S.H., dan Maulana, M. (2013). Rencana Pembangunan Jangka Menengah Nasional (RPJMN) Bidang Pangan dan Pertanian 2015-2019. Direktorat Pangan dan Pertanian Bappenas. Jakarta.
- Sardjono, Rahayu ES, Raharjo S, and Rahayu K. (2004a). Detoxification of Aflatoxin B<sub>1</sub> by Extracellular Enzymes of *Aspergillus oryzae* KKB4. *Indonesian Food and Nutrition Progress* **11**:30-34.
- Sardjono, Raharjo S, Rahayu ES, and Kuswanto KR. (2004b). The Role of Extacellular Enzymes Produced by *Aspergillus oryzae* KKB4 in Biodegradation of Aflatoxin B<sub>1</sub>. *Indonesian Food and Nutrition Progress* **11**:65-71.
- Sardjono. (2008). The Growth Kinetics of *Aspergillus oryzae* KKB4 on Solid State Culture System and the Activity of Crude Extracellular Enzyme on Reducing Afaltoxin B<sub>1</sub>. *Agritech* **28**:145-149.
- Sardjono. (2016). Detoksifikasi Mikotoksin dengan Fermentasi suatu Metode yang Aman dan Menjanjikan. *Pangan Indonesia yang Diimpikan* **2**:162-166.
- Setyabudi, F.M.C.S., Nuryono, N., Wedhastri, S., Mayer, H.K., dan Razzazi-Fazeli, E. (2012). Limited survey of deoxynivalenol occurence in maize kernels and maize-products collected from Indonesian retail market. *Food Control* **24**:123-127.
- Shantha, T. (1999). Fungal Degradation of Aflatoxin B<sub>1</sub>. *Natural Toxins* **7**:175-178.
- Shi, C., Yan, P., Li, J., Wu, H., Li, Q., dan Guan, S. (2014). Biocontrol of *Fusarium graminearum* Growth and Deoxynivalenol Production in Wheat Kernels with Bacterial Antagonists. *International Journal of Environmental Research and Public Health* **11**:1094-1105.
- Smits, J.P., Rinzema, A., Tramper, J., Schlosser, E.E. and Knol, W. (1996). Accurate Determination of Process Variables in a Solid-State Fermentation System. *Process Biochemistry* **31**:669-678.
- Smits, J.P. (1998). Solid-State Fermentation : Modelling Fungal Growth and Activity. Van de Landbouwniversiteit Wageningen.



- Sobrova P, Adam V, Vasatkova A, Beklova M, Zeman L, Kizek R. (2010). Deoxynivalenol and its Toxicity. *Interdisciplinary Toxicology* **3**:94-99
- Somantri, A.S., dan Miskiyah. (2012). Sistem Keamanan Pangan Berbahan Baku Jagung. Balai Besar Penelitian dan Pengembangan Pascapanen Pertanian Bogor
- Souza, M.M. de, Prietto, L., Ribeiro, A.C., Souza, T.D. de, dan Badiale-Furlong, E. (2011). Assessment of the antifungal activity of *Spirulina platensis* phenolic extract against *Aspergillus flavus*. *Lavras* **35**:1050-1058.
- Stoev, S.D. (2013). Food Safety and Increasing Hazard of Mycotoxin Occurrence in Foods and Feeds. *Critical Reviews in Food Science and Nutrition* **53**:9, 887-901
- Suarni, dan Widowati, S. (2007). Struktur, Komposisi dan Nutrisi Jagung. Balai Besar Penelitian dan Pengembangan Pascapanen Pertanian. Bogor .
- Terebiznik, M.R. dan Pilosof, A.M.R. (1999). Biomass estimation in solid state fermentation by modelling dry matter weight loss. *Biotechnology Technique* **13**:215-219.
- Thrane, U. (2014). *Fusarium*. The Elsevier Netherland.
- Tian, Y., Tan, Y., Liu, N., Liao, Y., Sun, C., Wang, S., dan Wu, A. (2016). Functional Agents to Biologically Control Deoxynivalenol Contamination in Cereal Grain. *Frontiers in Microbiology* **7**.
- Tran, S. T., dan Smith, T. K. (2014). Conjugation of deoxynivalenol by *Alternaria alternata* (54028 NRRL), *Rhizopus microsporus* var. *rhizopodiformis* (54029 NRRL) and *Aspergillus oryzae* (5509 NRRL). *Mycotoxin research*, 30(1), 47-53.
- Turner, N.W., Subrahmanyam, S., dan Piletsky, S.A. (2009). Analytical Methods for Determination of Mycotoxin : A Review. *Analytica Chimica Acta* **632**:168-180.
- Varga, J., Peteri, Z., Tabori, K., Teren, J. Dan Vagvolgyi, C. (2005). Degradation of ochratoxin A and other mycotoxins by *Rhizopus* isolates. *International Journal of Food Microbiology* **99**:321-328.
- van-Asselt, E.D., Booij, C.J.H. dan van der Fels-Klerx, H.J. (2012). Modelling mycotoxin formation by *Fusarium graminearum* in maize in The Netherlands. *Food Additives & Contaminants* **29**(10):1572-1580

- Van Egmond, H. P. (2002). Worldwide regulations for mycotoxins. In *Mycotoxins and food safety* (pp. 257-269). Springer, Boston, MA.
- Wang, Z., Wu, Q., Kuca, K., Dohmal, V., dan Tian, Z. (2014). Deoxynivalenol : signaling pathways and human exposure risk assessment – an update. *Archives of Toxicology* **88**:1915-1928.
- Westby, A., Reilly, A., dan Bainbridge, Z. (1997). Review of the effect fermentation on naturally occurring toxins. *Food Control* **8**:329-339.
- Zheng, W., Zhao, X., Xie, Q., Huang, Q., Zhang, C., Zhai, H., Xu, L., Lu, G., Shim, W.B dan Wang, Z. (2012). A Conserved Homeobox Transcription Factor Htf1 Is Required for Phialide Development and Conidiogenesis in *Fusarium* species. *J Academic PloS ONE* **7(9)**:1p