

## DAFTAR PUSTAKA

- Abdullah, R., N. S. Kamarozaman, S. S. Ab Dullah, M. Y. Aziz, and H. B. A. Aziza. 2025. Health risks evaluation of mycotoxins in plant-based supplements marketed in Malaysia. *Scientific Reports* 15:1244.
- Abrehome, S., V. R. Manoj, M. Hailu, Y. Y. Chen, Y. C. Lin, and Y. P. Chen. 2023. Aflatoxins: source, detection, clinical features, and prevention. *Processes* 11: 204.
- Abro, M. R., N. Rashid, R. N. Soomro, and Z. Siddique. 2024. Comparative assessment of thermal treatment for mycotoxins adsorption potential of indigenous clay from Balochistan, Pakistan. *Pakistan Journal of Analytical and Environmental Chemistry* 25:22–30.
- Afrin, R., S. Arumugam, A. Rahman, M. I. I. Wahed, V. Karuppagounder, M. Harima, H. Suzuki, S. Miyashita, K. Suzuki, H. Yoneyama, K. Ueno, and K. Watanabe. 2017. Curcumin ameliorates liver damage and progression of nonalcoholic steatohepatitis in a NASH-hepatocellular carcinoma mouse model possibly by modulating *HMGB1-NF-κB* translocation. *International Immunopharmacology* 44:174–182.
- Ahmed, N., S. M. El-Rayes, W. F. Khalil, A. Abdeen, A. Abdelkader, M. Youssef, Z. M. Maher, A. N. Ibrahim, S. M. Abdelrahman, S. F. Ibrahim, D. Abdelrahman, M. Alsieni, O. S. Elserafy, H. I. Ghamry, H. T. Emam, and O. Shanab. 2022. Arabic gum alleviates aflatoxin B<sub>1</sub>-provoked hepatic injury in rats: involvement of oxidative stress, inflammatory, and apoptotic pathways. *Toxins* 14:605.
- Al Anas, M., L. Mira Yusiati, C. Tri Noviandi, and A. Agus. 2022. Crude aflatoxin B<sub>1</sub> production using maize and rice substrates for animal research. *Proceedings of the 6th International Seminar of Animal Nutrition and Feed Science. (ISANFS 2021)*:4–8.
- Anisuzzaman, A. S. M., A. Haque, M. A. Rahman, D. Wang, J. R. Fuchs, S. Hurwitz, Y. Liu, G. Sica, F. R. Khuri, Z. (Georgia) Chen, D. M. Shin, and A. R. M. R. Amin. 2016. Preclinical *in vitro*, *in vivo*, and pharmacokinetic evaluations of FLLL12 for the prevention and treatment of head and neck cancers. *Cancer Prevention Research* 9:63–73.
- Appell, M., E. C. Wegener, B. K. Sharma, F. J. Eller, K. O. Evans, and D. L. Compton. 2023. *In vitro* evaluation of the adsorption efficacy of biochar materials on aflatoxin B<sub>1</sub>, ochratoxin A, and zearalenone. *Animals* 13:3311.
- Awuchi, C. G., E. N. Ondari, S. Nwozo, G. A. Odongo, I. J. Eseoghene, H. Twinomuhwezi, C. U. Ogbonna, A. K. Upadhyay, A. O. Adeleye, and C. O. R. Okpala. 2022. Mycotoxins' toxicological mechanisms involving humans, livestock, and their associated health concerns: a review. *Toxins* 14: 167.

- Ayo, E. M., A. Matemu, G. H. Laswai, and M. E. Kimanya. 2018. An *in vitro* evaluation of the capacity of local Tanzanian crude clay and ash-based materials in binding aflatoxins in solution. *Toxins*10:510.
- Azzouz, A., V. A. Arus, and N. Platon. 2024. Role of clay substrate molecular interactions in some dairy technology applications. *International Journal of Molecular Sciences* 25:808.
- Benkerroum, N. 2020. Chronic and acute toxicities of aflatoxins: mechanisms of action. *International Journal of Environmental Research and Public Health* 17:423.
- Benzer, F., F. M. Kandemir, S. Kucukler, S. Comaklı, and C. Caglayan. 2018. Chemoprotective effects of curcumin on doxorubicin-induced nephrotoxicity in Wistar rats by modulating inflammatory cytokines, apoptosis, oxidative stress, and oxidative DNA damage. *Archives of Physiology and Biochemistry* 124:448–457.
- Bettiol, P. S., M. A. P. Cechinel, C. M. Oliveira, K. Goulart, A. G. Dol-Bó, A. M. Bernardin, and M. Peterson. 2022. Adsorption of aflatoxin B<sub>1</sub> by raw and lyophilized bentonitic clay. *Advanced Powder Technology* 33:103682.
- Bimonte, S., A. Barbieri, G. Palma, A. Luciano, D. Rea, and C. Arra. 2013. Curcumin inhibits tumor growth and angiogenesis in an orthotopic mouse model of human pancreatic cancer. *BioMed Research International* 2013:1–8.
- Chen, T., J. Liu, Y. Li, and S. Wei. 2022. Burden of disease associated with dietary exposure to aflatoxins in China in 2020. *Nutrients* 14:1027.
- Dai, C., E. Tian, Z. Hao, S. Tang, Z. Wang, G. Sharma, H. Jiang, and J. Shen. 2022. Aflatoxin B<sub>1</sub> toxicity and protective effects of curcumin: molecular mechanisms and clinical implications. *Antioxidants* 11:2031.
- Das, P. P., R. Patra, J. G. R., D. Kumar, S. K. Panda, R. Sahoo, S. Meher, and S. Senapati. 2023. Concurrent dietary incorporation of bentonite clay reduces aflatoxin-induced health effects in white Pekin ducks. *Current Research in Vaccines and Vaccination* 2.
- Dos Anjos, F. R., D. R. Ledoux, G. E. Rottinghaus, and M. Chimonyo. 2015. Efficacy of adsorbents (bentonite and diatomaceous earth) and turmeric ( *Curcuma longa* ) in alleviating the toxic effects of aflatoxin in chicks. *Br Poult Sci* 56:459–469.
- El-Bahr, S. M. 2015. Effect of curcumin on hepatic antioxidant enzyme activities and gene expressions in rats intoxicated with aflatoxin B<sub>1</sub>. *Phytotherapy Research* 29:134–140.

- El-Sayed, R. A., A. B. Jebur, W. Kang, and F. M. El-Demerdash. 2022. An overview of the major mycotoxins in food products: characteristics, toxicity, and analysis. *Journal of Future Foods* 2:91–102.
- Farzaei, M. H., M. Zobeiri, F. Parvizi, F. F. El-Senduny, I. Marmouzi, E. Coy-Barrera, R. Naseri, S. M. Nabavi, R. Rahimi, and M. Abdollahi. 2018. Curcumin in liver diseases: a systematic review of the cellular mechanisms of oxidative stress and clinical perspectives. *Nutrients* 10:855.
- Feng, W., H. Wang, P. Zhang, C. Gao, J. Tao, Z. Ge, D. Zhu, and Y. Bi. 2017. Modulation of gut microbiota contributes to curcumin-mediated attenuation of hepatic steatosis in rats. *Biochimica et Biophysica Acta General Subjects* 1861:1801–1812.
- Gan, F., X. Hang, Q. Huang, and Y. Deng. 2019. Assessing and modifying Chinese bentonites for aflatoxin adsorption. *Applied Clay Science* 168:348–354.
- Ghofrani Tabari, D., H. Kermanshahi, A. Golian, and R. Majidzadeh Heravi. 2018. *In vitro* binding potentials of bentonite, yeast cell wall, and lactic acid bacteria for aflatoxin B<sub>1</sub> and ochratoxin A. *Iranian Journal of Toxicology* 12:7–13.
- Gilbert-Sandoval, I., S. Wesseling, and I. M. C. M. Rietjens. 2020. Predicting the acute liver toxicity of aflatoxin B<sub>1</sub> in rats and humans by an *in vitro*–*in silico* testing strategy. *Molecular Nutrition and Food Research* 64:e2000063.
- Gu, R., X. Yang, L. Cheng, Q. Zhang, P. Li, and J. Mao. 2024. Screening, identification, and application of *Bacillus velezensis* NWPZ-8 probiotics to aflatoxin detoxification in peanut meal. *ACS Food Science and Technology* 4:2155–2166.
- Hamad, G. M., H. S. A. El-Makarem, M. G. Allam, O. S. El Okle, M. I. El-Toukhy, T. Mehany, Y. El-Halmouch, M. M. F. Abushaala, M. S. Saad, S. A. Korma, S. A. Ibrahim, E. E. Hafez, A. Amer, and E. Ali. 2023. Evaluation of the adsorption efficacy of bentonite on aflatoxin M1 levels in contaminated milk. *Toxins* 15:107.
- Haque, M. A., Y. Wang, Z. Shen, X. Li, M. K. Saleemi, and C. He. 2020. Mycotoxin contamination and control strategies in humans, domestic animals, and poultry: a review. *Microbial Pathogenesis* 142:104095.
- Hebbar, R. S., A. M. Isloor, and A. F. Ismail. 2014. Preparation and evaluation of heavy metal rejection properties of polyetherimide/porous activated bentonite clay nanocomposite membrane. *RSC Advances* 4:47240–47248.
- Hojati, M., M. A. Norouzian, A. A. Alamouti, and A. Afzalzadeh. 2021. *In vitro* evaluation of binding capacity of different binders to adsorb aflatoxin. *Veterinary Research Forum* 12:211–215.

- Hu, L., Y. Jia, F. Niu, Z. Jia, X. Yang, and K. Jiao. 2012. Preparation and enhancement of oral bioavailability of curcumin using microemulsion vehicles. *Journal of Agricultural and Food Chemistry* 60:7137–7141.
- Iswarawanti, D. N., T. P. P. Masloman, and D. H. Drupadi H. S. 2024. Exposure and knowledge on peanut aflatoxin B<sub>1</sub> among urban consumers in Jakarta, Indonesia. *AcTion: Aceh Nutrition Journal* 9:562.
- Javed, A., M. B. Shahid, H. Naeem, A. H. Jam, A. Nawaz, and A. Nazeer. 2022. Aflatoxins poisoning. *Haya: The Saudi Journal of Life Sciences* 7:34–37.
- Jin, H., N. Lian, F. Zhang, L. Chen, Q. Chen, C. Lu, M. Bian, J. Shao, L. Wu, and S. Zheng. 2016. Activation of *PPAR* $\gamma$ /*P53* signaling is required for curcumin to induce hepatic stellate cell senescence. *Cell Death and Disease* 7:e2189.
- Jin, S., Q. Pang, R. Liu, H. Yang, F. Liu, M. Wang, Y. Wang, X. Feng, and A. Shan. 2020. Dietary curcumin decreased lipid oxidation and enhanced the myofibrillar protein structure of the duck (*Anas platyrhynchos*) breast muscle when subjected to storage. *LWT-Food Science and Technology* 133:109986.
- Jin, S., H. Yang, F. Liu, Q. Pang, A. Shan, and X. Feng. 2021. Effect of dietary curcumin supplementation on duck growth performance, antioxidant capacity, and breast meat quality. *Foods* 10:2981.
- Khansili, N., and P. Murali Krishna. 2021. Sensitive metal oxide-clay nanocomposite colorimetric sensor development for aflatoxin detection in foods: corn and almond. *ACS Omega* 6:14911–14925.
- Khatoon, A., and Z. Abidin. 2018. An extensive review of experimental ochratoxicosis in poultry: I. Growth and production parameters along with histopathological alterations. *World's Poultry Science Journal* 74:627–646.
- Kolawole, O., J. Meneely, B. Greer, O. Chevallier, D. S. Jones, L. Connolly, and C. Elliott. 2019. Comparative *in vitro* assessment of a range of commercial feed additives with multiple mycotoxin binding claims. *Toxins (Basel)* 11:659.
- Liew, W.-P. P., Z. Nurul-Adilah, L. T. L. Than, and S. Mohd-Redzwan. 2018. The binding efficiency and interaction of *Lactobacillus casei* Shirota toward aflatoxin B<sub>1</sub>. *Frontiers in Microbiology* 9:1503.
- de Lima Schlösser, L. M., C. T. Simões, J. A. Sarturi, C. R. da Silva, I. F. Laber, D. S. P. Franco, and C. A. Mallmann. 2024. Adsorption of aflatoxin B<sub>1</sub> by different antimycotoxin additives: bentonite, clinoptilolite, and beta-glucans extracted from yeast cell wall. *Mycotoxin Research* 40:111–121.

- Lopresti, A. L. 2018. The problem of curcumin and its bioavailability: could its gastrointestinal influence contribute to its overall health-enhancing effects? *Advances in Nutrition* 9:41–50.
- Ma, R., L. Zhang, M. Liu, Y.-T. Su, W.-M. Xie, N.-Y. Zhang, J.-F. Dai, Y. Wang, S. Rajput, D.-S. Qi, N. Karrow, and L.-H. Sun. 2018. Individual and combined occurrence of mycotoxins in feed ingredients and complete feeds in China. *Toxins* 10:113.
- Martínez, J., M. Hernández-Rodríguez, A. Méndez-Albores, G. Téllez-Isaías, E. Mera Jiménez, M. I. Nicolás-Vázquez, and R. Miranda Ruvalcaba. 2023. Computational studies of aflatoxin B<sub>1</sub>: a review. *Toxins* 15:135.
- Messner, D. J., C. Surrago, C. Fiordalisi, W. Y. Chung, and K. V. Kowdley. 2017. Isolation and characterization of iron chelators from turmeric (*Curcuma longa*): selective metal binding by curcuminoids. *BioMetals* 30:699–708.
- Mohajeri, M., B. Behnam, A. F. G. Cicero, and A. Sahebkar. 2018. Protective effects of curcumin against aflatoxicosis: a comprehensive review. *Journal of Cellular Physiology* 233:3552–3577.
- Monmeesil, P., W. Fungfuang, P. Tulayakul, and U. Pongchairerk. 2019. The effects of astaxanthin on liver histopathology and expression of superoxide dismutase in rat aflatoxicosis. *Journal of Veterinary Medical Science* 81:1162–1172.
- Muhammad, I., H. Wang, X. Sun, X. Wang, M. Han, Z. Lu, P. Cheng, M. A. Hussain, and X. Zhang. 2018. Dual role of dietary curcumin through attenuating AFB<sub>1</sub>-induced oxidative stress and liver injury via modulating liver phase-I and phase-II enzymes involved in AFB<sub>1</sub> bioactivation and detoxification. *Frontiers in Pharmacology* 9:554.
- Nones, J., J. Nones, H. G. Riella, N. C. Kuhn, and A. Trentin. 2015. Bentonite protects neural crest stem cells from death caused by aflatoxin B<sub>1</sub>. *Applied Clay Science* 104:119–127.
- Odenthal, J., B. W. H. van Heumen, H. M. J. Roelofs, R. H. M. te Morsche, B. Marian, F. M. Nagengast, and W. H. M. Peters. 2012. The influence of curcumin, quercetin, and eicosapentaenoic acid on the expression of phase II detoxification enzymes in intestinal cell lines HT-29, Caco-2, Hutu 80, and LT97. *Nutrition and Cancer* 64:856–863.
- Ofori-Attah, E., M. Hashimoto, M. Oki, and D. Kadowaki. 2024. Therapeutic effect of natural products and dietary supplements on aflatoxin-induced nephropathy. *International Journal of Molecular Sciences* 25:2849.
- Olokkaran, R., and S. Mathew. 2020. *In vitro* detoxification of aflatoxin B<sub>1</sub> by calcium bentonite clay supplementation in aflatoxigenic mold

- contaminated feeds for Nile tilapia, *Oreochromis niloticus* (Linnaeus, 1758). *Asian Journal of Fisheries and Aquatic Research* 10:1–18.
- Pappas, A. C., E. Tsiplakou, D. I. Tsitsigiannis, M. Georgiadou, M. K. Iliadi, K. Sotirakoglou, and G. Zervas. 2016. The role of bentonite binders in single or concomitant mycotoxin contamination of chicken diets. *British Poultry Science* 57:551–558.
- Pasha, T. N., M. U. Farooq, F. M. Khattak, M. A. Jabbar, and A. D. Khan. 2007. Effectiveness of sodium bentonite and two commercial products as aflatoxin absorbents in diets for broiler chickens. *Animal Feed Science and Technology* 132:103–110.
- Pauletto, M., M. Giantin, R. Tolosi, I. Bassan, A. Barbarossa, A. Zaghini, and M. Dacasto. 2020. Curcumin mitigates AFB<sub>1</sub>-induced hepatic toxicity by triggering cattle antioxidant and anti-inflammatory pathways: a whole transcriptomic *in vitro* study. *Antioxidants* 9:1059.
- Rahayu, W. P., D. Herawati, W. Broto, N. Indrotristanto, S. Ambarwati, and W. Adhi. 2020. Risk estimation of hepatocellular carcinoma due to exposure to aflatoxins in maize from Yogyakarta, Indonesia. *Journal of Food Quality and Hazards Control* 7:45-50.
- Rasouli, H., F. D. Nayeri, and R. Khodarahmi. 2022. May phytochemicals alleviate aflatoxins-induced health challenges? A holistic insight on current landscape and future prospects. *Frontiers in Nutrition* 9: 981984.
- Rawal, S., J. E. Kim, and R. Coulombe. 2010. Aflatoxin B<sub>1</sub> in poultry: toxicology, metabolism, and prevention. *Research in Veterinary Science* 89:325–331.
- Ren, X.-L., P. Han, and Y. Meng. 2020. Aflatoxin B<sub>1</sub>-induced COX-2 expression promotes mitophagy and contributes to lipid accumulation in hepatocytes *in vitro* and *in vivo*. *International Journal of Toxicology* 39:594–604.
- Rudayni, H. A., M. H. Shemy, M. Aladwani, L. M. Alneghery, G. M. Abu-Taweel, A. A. Allam, M. R. Abukhadra, and S. Bellucci. 2023. Synthesis and biological activity evaluations of green ZnO-decorated acid-activated bentonite-mediated curcumin extract (ZnO@CU/BE) as antioxidant and antidiabetic agents. *Journal of Functional Biomaterials* 14:198.
- Rushing, B. R., and M. I. Selim. 2019. Aflatoxin B<sub>1</sub>: a review on metabolism, toxicity, occurrence in food, occupational exposure, and detoxification methods. *Food and Chemical Toxicology* 124:81–100.
- Schrader, C., C. Schiborr, J. Frank, and G. Rimbach. 2011. Curcumin induces *paraoxonase 1* in cultured hepatocytes *in vitro* but not in mouse liver *in vivo*. *British Journal of Nutrition* 105:167–173.

- Seifert, L. E., J. P. Davis, J. W. Dorner, W. F. Jaynes, R. E. Zartman, and T. H. Sanders. 2010. Value-added processing of peanut meal: aflatoxin sequestration during protein extraction. *Journal of Agricultural and Food Chemistry* 58:5625–5632.
- Shen, L., L. Liu, and H.-F. Ji. 2017. Regulative effects of curcumin spice administration on gut microbiota and its pharmacological implications. *Food and Nutrition Research* 61:1361780.
- Sumantri, I., F. Purwanti, N. Nuryono, and A. Agus. 2019. Estimation of aflatoxin M<sub>1</sub> exposure through consumption of various dairy milk products in Yogyakarta, Indonesia. *Jurnal Veteriner* 20:58.
- Sun, X.-D., X.-E. Liu, and D.-S. Huang. 2012. Curcumin induces apoptosis of triple-negative breast cancer cells by inhibition of epidermal growth factor receptor expression. *Molecular Medicine Reports* 6:1267–1270.
- Tebetyo, Z., P. Bogere, M. M. Nabulime, A. N. Kaaya, B. Gnonlonfin, M. Ntale, and J. Nakavuma. 2020. The *in vitro* efficacy of two microbial strains and physicochemical effects on their aflatoxin decontamination in poultry feeds. *Academic Journals* 19: 644-652.
- Wang, M., S. E. Hearon, and T. D. Phillips. 2020a. A high capacity bentonite clay for the sorption of aflatoxins. *Food Additives & Contaminants: Part A* 37:332–341.
- Wang, Y., F. Liu, X. Zhou, M. Liu, H. Zang, X. Liu, A. Shan, and X. Feng. 2022. Alleviation of oral exposure to aflatoxin B<sub>1</sub>-induced renal dysfunction, oxidative stress, and cell apoptosis in mice kidney by curcumin. *Antioxidants* 11:1082.
- Wang, Y., M. Wang, A. Shan, and X. Feng. 2020b. Avian host defense cathelicidins: structure, expression, biological functions, and potential therapeutic applications. *Poultry Science* 99:6434–6445.
- Xie, Z., B. Wu, G. Shen, X. Li, and Q. Wu. 2017. Curcumin alleviates liver oxidative stress in type 1 diabetic rats. *Molecular Medicine Reports* 17: 103-108
- Xu, R., E. G. Kiarie, A. Yiannikouris, L. Sun, and N. A. Karrow. 2022. Nutritional impact of mycotoxins in food animal production and strategies for mitigation. *J Anim Sci Biotechnol* 13:69.
- Zhai, K., A. Brockmüller, P. Kubatka, M. Shakibaei, and D. Büsselberg. 2020. Curcumin's beneficial effects on neuroblastoma: mechanisms, challenges, and potential solutions. *Biomolecules* 10:1–28.
- Zhang, N.-Y., M. Qi, L. Zhao, M.-K. Zhu, J. Guo, J. Liu, C.-Q. Gu, S. Rajput, C. Krumm, D.-S. Qi, and L.-H. Sun. 2016. Curcumin prevents aflatoxin B<sub>1</sub> hepatotoxicity by inhibition of cytochrome P450 isozymes in chick (*Gallus gallus domesticus*) liver. *Toxins* 8:327.