Review Form 3

Journal Name:	**Journal of Advances in Biology & Biotechnology**
Manuscript Number:	**Ms_JABB_125955**
Title of the Manuscript:	**RECENT ADVANCES IN MYCOTOXIN DETECTION**
Type of the Article	**Review Article**

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PART 1: Review Comments

Compulsory REVISION comments	**Reviewer's comment**	**Author's Feedback** *(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
Please write a few sentences regarding the importance of this manuscript for the scientific community. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.	The article presents a detailed review of various methods for detecting mycotoxins in food and feed, focusing on both traditional and recent advances. It discusses chromatographic techniques, biosensors, spectroscopic methods, and smartphone-based detection systems. The paper highlights challenges related to mycotoxin contamination and the need for rapid, affordable detection systems to ensure food safety. The article provides valuable insights into mycotoxin detection but needs minor revisions to improve clarity, eliminate redundancy, and ensure consistency in language and formatting.	
Is the title of the article suitable? **(If not please suggest an alternative title)**	**yes**	
Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.	**yes**	
Are subsections and structure of the manuscript appropriate?	The numbering and sectioning of different parts of the article need to be corrected. For example, this title: "2. Spectroscopic Techniques" has number 2, and number one is unknown.	
Please write a few sentences regarding the scientific correctness of this manuscript. Why do you think that this manuscript is scientifically robust and technically sound? A minimum of 3-4 sentences may be required for this part.	The article does a good job of covering a broad range of detection technologies, including chromatographic techniques (HPLC, GC-MS), immunoassays (ELISA, lateral flow), and newer approaches like smartphone-based immune microspheres and aggregation-induced emission (AIE) systems. This breadth provides readers with insight into both established and emerging technologies. However, the article promises insights into mycotoxin detection, but a significant portion focuses on general descriptions of biosensor technologies and devices, such as molecularly imprinted polymers and piezoelectric sensors, without directly linking these to mycotoxin detection applications. It lacks of original analysis. The article fails to compare detection methods in terms of sensitivity, specificity, cost, or speed. Readers would benefit from side-by-side comparisons of techniques like HPLC vs. ELISA vs. lateral flow assays, highlighting their advantages and limitations for detecting specific mycotoxins. It is recommended to provide a comparison table summarizing the efficiency of different methods under real-world conditions.	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form. **-**	1- Many parts missed the references: i. After: An indirect ELISA detection technique with an immunoaffinity column sample preparation using the same antibody was found to be extremely sensitive at 0.02 µg/L. ii. After: The aptamers are considered to be a better alternative to antibodies in many biological applications. iii. After: Potentiometric sensors have been successfully tested for AFB1 in corn powder, for OTA in grape	

	juice and red wine, for PAT in juice and for ZEN in maize. iv. After: While the signal off refers to diminish in signal due to the formation of target-aptamer complex. v. After: Finally the conformational change is directly translated into a measurable signal. vi. After: Both mechanisms cause changes on the surface electrode by generating a signal that can be translated by different detection methodologies. vii. After: This change in charge resistance is proportional to the amount of the target in the sample. viii. After: This sensor holds promise for safeguarding consumer health, as it offers the advantages of affordability, speed, ease of use, making it suitable for applications at milk collection points or within milk processing lines. ix. After: The entire measurement process, including sample pretreatment (approximately 20 minutes), QCM measurement (5 minutes), and regeneration (5 minutes), could be completed within 30 minutes. x. After: Furthermore, the construction and operating principles of this QCM immunochip can be adapted for analyzing other target substances in various fields. xi. After: AIE dye based aptasensor successfully developed for OTA detection in wine and coffee and AFE in peanut oil and broad bean sauce. xii. After: This study demonstrates the feasibility of using AIEMBs as signal probes to enhance the sensitiv of competitive LFIA and presents a versatile approach for quickly and accurately screening small molecules such as mycotoxins, pesticide residues, and other chemical hazards. xiii. After: The recovery rates for both mycotoxins fall within the range of 76.72% to 122.05%. 2- In some places, the reference is given in an unusual manner and in the rest of the text, the reference is referred to in an unprincipled way, which should be corrected: - Development of flexible Dispense-Printed Electrochemical immunosensor for Aflatoxin M1 detection in milk (Abera et al., 2019) - A Portable, Label-Free, Reproducible Quartz Crystal Microbalance Immunochip for the Detection of Zearalenone in Food Samples (Liu et al., 2021) - Ultrasensitive Lateral Flow Immunoassay for Fumonisin B1 Detection Using Highly Luminescent Aggregation-Induced Emission Microbeads (Xu et al., 2023) - Rapid, simultaneous detection of mycotoxins with smartphone recognition-based immune microsphere (Zhang et al., 2021)	

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Minor REVISION comments **Is the language/English quality of the article suitable for scholarly communications?**	Yes, except some corrections. 1- Errors like “vey” instead of “very” and inconsistent citation styles reduce the professionalism of the article. Please conduct a thorough proofreading to eliminate such issues before submission. 2- It is not known what the letter **P** refers to in: When the analyte molecule concentration is low, most of the tracer molecules bind to the antibody so that P becomes high. On the other hand, when the analyte concentration is high, most of the analyte molecules bind to the antibody so that the free tracer molecules are still present and P becomes low. 3- 2. Aptasensors: B. Label Free Immunosensors” should be: 2. Aptasensors: B. Label Free Aptasensors”	
Optional/General comments	The article missed opportunity for practical examples. The real-world examples of mycotoxin detection (e.g detecting aflatoxins in maize or fumonisins in corn) would greatly enhance the article’s practical value. F example in: “A. Labelled Immunosensors” it is expected to write more details when it comes to mycotoxin us Also “1. Immunosensors: B. Label Free Immunosensors”, “2. Aptasensors: A. Labelled Aptasensors” and “ Aptasensors: B. Label Free Immunosensors” lack any attention to mycotoxins. “The significance of detecting mycotoxins in food and animal feeds cannot be overstated..." appears more than once across the introduction and abstract.	

PART 2:

	Reviewer’s comment	**Author’s comment** *(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
Are there ethical issues in this manuscript?	*(If yes, Kindly please write down the ethical issues here in details)*	

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