

Review Form 3

Journal Name:	Journal of Experimental Agriculture International
Manuscript Number:	Ms_JEAI_125231
Title of the Manuscript:	Advances in Triticale (X Triticosecale) Improvement: Chromosome Manipulation and Biotechnological Approaches.
Type of the Article	

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PART 1: Review Comments

Compulsory REVISION comments	Reviewer's comment	Author's Feedback <i>(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
<p>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.</p>	<p>The study was found to be appropriate in terms of methodology and theory. This manuscript is important for the scientific community because it addresses a crucial topic in agricultural biotechnology—improving triticale through chromosome manipulation and biotechnological methods. Triticale holds significant potential for enhancing food security, especially in regions with challenging growing conditions, making research on its genetic stability and breeding highly relevant. Also, appreciate the manuscript for its comprehensive coverage of both conventional and modern breeding techniques, offering a clear overview of advancements in triticale improvement. However, it could be improved by providing more in-depth analysis of the challenges and practical applications of these techniques, which would make it even more valuable to researchers and plant breeders alike.</p>	
<p>Is the title of the article suitable? (If not please suggest an alternative title)</p>	<p>Yes</p>	
<p>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.</p>	<p>The abstract of the paper is well-written. However, while it is informative, it could be more concise. The sentence "Meanwhile certain genetic instabilities arising from the merging of the rye and wheat genomes have impeded the advancement of triticale chromosome engineering advancements along with biotechnological approaches might potentially unleash the full potential of triticale" is dense. Consider breaking it into simpler sentences to improve readability. Furthermore, the abstract also lacks a clear articulation of the findings or major contributions of the paper. Strengthen the conclusion part of the abstract with specific outcomes or key insights from the review.</p>	
<p>Are subsections and structure of the manuscript appropriate?</p>	<p>yes</p>	
<p>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.</p>	<p>The manuscript is scientifically robust and technically sound, as it provides a comprehensive review of the advances in triticale breeding, particularly focusing on chromosome manipulation and biotechnological approaches. It accurately describes key methodologies like chromosomal doubling, translocations, and molecular breeding techniques, all of which are well-documented in the literature. The discussion of challenges, such as genetic instability in triticale due to its hybrid nature, is scientifically valid and reflects current understanding in crop breeding. Moreover, the use of multiple references, both recent and foundational, supports the credibility and relevance of the information presented, ensuring that the manuscript aligns with modern scientific standards in plant genetics and breeding.</p>	
<p>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.</p>	<p>yes</p>	

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<p>Minor REVISION comments</p> <p>Is the language/English quality of the article suitable for scholarly communications?</p>	<p>yes</p>	
<p>Optional/General comments</p>	<p>1. In the introduction part of the manuscript, the background on triticale's development and classification is well presented, but there is a need for a more focused statement of the manuscript's objectives. Consider including a paragraph that clearly outlines the purpose of the paper, such as identifying specific gaps or opportunities in triticale breeding research.</p> <p>2. In the Chromosome Manipulation Strategies section: This section lists various chromosome engineering methods but lacks in-depth discussion on how these methods are practically applied. Expanding on real-world examples, as well as the limitations of each method (e.g., success rate, potential drawbacks), would greatly enhance the quality of this section.</p> <p>3. In the Biotechnology in Triticale Breeding section: The biotechnology section provides good insights but needs more clarity. For example, the sentence "Microspore and another culture are the most broadly adopted methods in triticale breeding programs" is unclear—expand on how these methods contribute to triticale's improvement. Including specific case studies or experiments where biotechnology significantly advanced triticale traits would support the theoretical discussion</p> <p>4. More attention should be given to the challenges of chromosome manipulation in triticale, including unintended side effects like reduced fertility, which may be common in synthetic crops. The manuscript would benefit from a discussion of the balance between enhancing desirable traits and maintaining stability.</p> <p>5. The conclusion does a good job summarizing the potential of chromosomal engineering in triticale breeding but lacks a forward-looking perspective. What are the most promising future directions?</p> <p>6. The manuscript would also benefit from a discussion of the broader implications of triticale improvement for global food security and sustainability.</p>	

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)
<p>Are there ethical issues in this manuscript?</p>	<p><i>(If yes, Kindly please write down the ethical issues here in details)</i></p>	<p>There are not any ethical issues regarding the manuscript</p>

Reviewer Details:

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