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A REVIEW ON ENZYMOLOGY, USES AND BIOTECHNOLOGY OF PHYTASE

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ABSTRACT

In addition to auxiliary enzymes, fungal proteins, as well as organic acids, phytase generated by filamentous fungus on chosen feed components increases feed digestibility and access to phytin in plant cells. Phytases are phosphohydrolases that start the process of removing phosphate from phytate one step at a time. These enzymes have long been used in animal feed to enhance phosphorus nutrition or decrease phosphorus contamination from animal manure. The use of phytases to improve human nutrition of important trace elements found in plant-derived foods is being investigated. This study focuses on the growing biotechnology utilized to create novel effective phytases with enhanced characteristics, as well as the fundamental biology and use of phytases.

KEYWORDS: *Biotechnology, Environmental Pollution, Mineral Nutrition, Phytase, Phytic Acid.*

REFERENCES

1. Jay W. Grate and H. Abraham, "Solubility interactions coatings for chemical and the design of chemically sensors and arrays," *Sensors Actuators B Chem.*, 1991.
2. C. S. Nunes, "General perspectives of enzymes, environment preservation, and scarce natural resources-conclusions," in *Enzymes in Human and Animal Nutrition: Principles and*

Perspectives, 2018.

3. Drakakaki G. *et al.*, “Endosperm-specific co-expression of recombinant soybean ferritin and Aspergillus phytase in maize results in significant increases in the levels of bioavailable iron,” *Plant Mol. Biol.*, 2005.

4. X. G. Lei and J. M. Porres, “Phytase enzymology, applications, and biotechnology,” *Biotechnology Letters*. 2003, doi: 10.1023/A:1026224101580.

5. X. Wang, M. Yao, M. Song, Y. Fu, F. Hu, and A. Liang, “Improving the thermostability of Escherichia coli phytase AppA by multipoint mutation,” *Gaojishu Tongxin/Chinese High Technol. Lett.*, 2014, doi: 10.3772/j.issn.1002-0470.2014.12.012.

6. L. B. Selinger, C. W. Forsberg, and K. J. Cheng, “The rumen: A unique source of enzymes for enhancing livestock production,” *Anaerobe*. 1996, doi: 10.1006/anae.1996.0036.

7. T. Xiong, Q. P. Zhao, R. Liu, M. Sen Jiang, and H. F. Dong, “Enzymology of snails under treatment of molluscicides,” *Chinese J. Schistosomiasis Control*, 2018, doi: 10.16250/j.32.1374.2017153.

8. A. Boyce and G. Walsh, “A series of enzymology-based experiments designed to mimic an applied research project,” *Biochem. Mol. Biol. Educ.*, 2005, doi: 10.1002/bmb.2005.49403306420.

9. A. Boyce, A. Casey, and G. Walsh, “A phytase enzyme-based biochemistry practical particularly suited to students undertaking courses in biotechnology and environmental science,” *Biochem. Mol. Biol. Educ.*, 2004, doi: 10.1002/bmb.2004.494032050392.

10. X. Wang, M. Yao, B. Yang, Y. Fu, F. Hu, and A. Liang, “Enzymology and thermal stability of phytase appA mutants,” *RSC Adv.*, 2015, doi: 10.1039/c5ra02199e.