Accepted Manuscript

Biological response of zebrafish after short-term exposure to azoxystrobin

Jinhua Jiang, Yan Shi, Ruixian Yu, Liping Chen, Xueping Zhao

PII: S0045-6535(18)30469-7

DOI: 10.1016/j.chemosphere.2018.03.055

Reference: CHEM 20999

To appear in: *ECSN*

Received Date: 7 December 2017

Revised Date: 7 March 2018

Accepted Date: 8 March 2018

Please cite this article as: Jiang, J., Shi, Y., Yu, R., Chen, L., Zhao, X., Biological response of zebrafish after short-term exposure to azoxystrobin, *Chemosphere* (2018), doi: 10.1016/j.chemosphere.2018.03.055.

Biological response of zebrafish after short-term exposure to azoxystrobin

Jinhua Jiang, Yan Shi, Ruixian Yu, Liping Chen, Xueping Zhao*

Institute of Quality and Standard for Agro-products, Zhejiang Academy of Agricultural Sciences, State Key Laboratory Breeding Base for Zhejiang Sustainable Pest and Disease Control, Hangzhou 310021, Zhejiang, China

*Corresponding author.

E-mail addresses: zhaoxueping@tom.com (X. Zhao)

Tel.: +86 571 86404056; fax: +86 571 86402186

ABSTRACT

Azoxystrobin (AZ) is a broad-spectrum systemic fungicide that widely used in the world. The present study investigated the toxicity effects on zebrafish after short-term exposure of AZ. Results demonstrated that the larval stage was most susceptible to AZ in the multiple life stages of zebrafish, with 96 h-LC_{50} value of 0.777 mg/L. Zebrafish larvae were exposed to different AZ concentrations (0, 0.1, 1, 10, 100 μg/L) and examined on 24, 48 and 72 h. It was found that AZ induced ROS accumulation, increased GST, GPX and POD activity and the transcriptions of antioxidant and stress response related genes, while the opposite trend occurred for SOD and CAT activity in 24-h or 48-h exposure period. The increased E_2 and VTG levels in zebrafish larvae, and altered transcription levels of regulatory and steroidogenic genes in the hypothalamus-pituitary-gonad (HPG) axis indicated the endocrine disruption capacity