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**Impact of foliar and root application of phosphorus on zinc concentration of winter wheat grown in China**

*Wang Shaoxia<sup>A,B,\*</sup>, Li Meng<sup>C,\*</sup>, Zhang Xiaoyuan<sup>A</sup>, Fei Peiwen<sup>A</sup>, Chen Yanlong<sup>A</sup>, Shi Jianglan<sup>A,D</sup> and Tian Xiaohong<sup>A,D</sup>*

<sup>A</sup>College of Natural Resources and Environment, Northwest A&F University, No. 3 Taicheng Road, Yangling, Shaanxi 712100, China.

<sup>B</sup>College of Resources and Environment Science, Qingdao Agriculture University, Qingdao, Shandong 266109, China.

<sup>C</sup>Engineering Research Center of Eco-Environment in Three Gorges Reservoir Region and Ministry of Education, and College of Hydraulic and Environmental Engineering, China Three Gorges University, Yichang, Hubei 443002, China.

<sup>D</sup>Corresponding authors. Email: txhong@hotmail.com, shijl81@nwafu.edu.cn

\*These two authors contributed to the work equally and should be regarded as co-first authors.

**Supplementary Table 1.** The proportion of soluble and insoluble Zn in grain, leaf, stem, and glume of hydroponically-grown winter wheat (*Triticum aestivum* cv. Xiaoyan-22), as influenced by P concentrations (low-P: 0.3 mM; medium-P: 1.0 mM; high-P: 2.0 mM) and foliar applications of Zn and Zn+P (CK: distilled water; Zn: 0.3% w/v ZnSO<sub>4</sub>·7H<sub>2</sub>O; Zn+P: 0.3% w/v ZnSO<sub>4</sub>·7H<sub>2</sub>O + 0.2% w/v KH<sub>2</sub>PO<sub>4</sub>).

Solution P concentration	Foliar application	Proportion of soluble Zn (%)				Proportion of insoluble Zn (%)			
		Grain	Stem	Leaf	Glume	Grain	Stem	Leaf	Glume
Low-P	CK	20.0	58.3	65.1	58.6	80.0	41.7	34.9	41.4
	Zn	43.3	60.6	77.3	65.5	56.7	39.4	22.7	34.5
	Zn+P	29.1	72.6	75.9	61.5	70.9	27.4	24.1	38.5
Medium-P	CK	27.6	63.1	68.0	64.7	72.4	36.9	32.0	35.3
	Zn	40.5	59.8	76.8	61.7	59.5	40.2	23.2	38.3
	Zn+P	32.8	40.9	76.5	59.3	67.2	59.1	23.5	40.7
High-P	CK	19.3	61.8	65.9	55.2	80.7	38.2	34.1	44.8
	Zn	38.1	74.8	73.3	62.2	61.9	25.2	26.7	37.8
	Zn+P	31.4	43.8	72.8	41.0	68.6	56.2	27.2	59.0

**Supplementary Table 2.** The proportion of water-soluble and insoluble Zn in grain, leaf, stem, and glume of field-grown winter wheat (*Triticum aestivum* cv. Xiaoyan-22) in 2013 and 2014, as influenced by foliar fertilization treatments (CK: distilled water; P: 0.2% w/v  $\text{KH}_2\text{PO}_4$ ; Zn: 0.3% w/v  $\text{ZnSO}_4 \cdot 7\text{H}_2\text{O}$ ; Zn+P: 0.3% w/v  $\text{ZnSO}_4 \cdot 7\text{H}_2\text{O}$  + 0.2% w/v  $\text{KH}_2\text{PO}_4$ ).

Foliar application	Grain		Stem		Leaf		Glume	
	2013	2014	2013	2014	2013	2014	2013	2014
Proportion of soluble Zn (%)								
CK	48.4	25.4	32.9	44.2	42.3	56.8	45.1	48.9
P	33.3	24.7	34.8	30.9	39.4	43.5	46.8	36.4
Zn	54.8	37.7	37.2	43.2	85.4	89.4	74.1	61.2
Zn+P	47.5	36.9	40.8	31.3	73.5	63.0	59.5	35.0
Proportion of insoluble Zn (%)								
CK	51.6	74.6	67.1	55.8	57.7	43.2	54.9	51.1
P	66.7	75.3	65.2	69.1	60.6	56.5	53.2	63.6
Zn	45.2	62.3	62.8	56.8	14.6	10.6	25.9	38.8
Zn+P	52.5	63.1	59.2	68.7	26.5	37.0	40.5	65.0