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Correction

Jacobo-Velázquez, D.A and Cisneros-Zevallos, L. An Alternative Use of Horticultural Crops: Stressed Plants as Biofactories of Bioactive Phenolic Compounds. *Agriculture* 2012, *2*, 259-271

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The authors are sorry to report that some data in the text (Section 2, Section 2.1.1. and Section 2.1.2) and Table 1 were incorrect in reference [1], doi: 10.3390/agriculture2030259, website: http://www.mdpi.com/2077-0472/2/3/259. Our mistake was basically in the calculations of changes observed in the reported values in those references; unfortunately we did not detect the errors at the time of publication. However, since we saw them afterwards, we believed it was pertinent to make the corrections. The authors would, therefore, like to make the following corrections to the paper:

Section 2. Plants as Biofactories of Phenolic Compounds: Use of Abiotic Stresses

The authors determined that when shredded-carrots are stored at 20 °C under hyperoxia conditions, the phenolic content in the tissue can be increased in ~349% after 48 h of storage. Likewise, the authors stated that the shredded-carrots treated with hyperoxia produce 16% more phenolic compounds than the air treated samples.

Section 2.1.1. Chlorogenic Acid (CQA)

The concentration of CQA in carrots can be significantly increased from ~38–148 mg/kg to ~628–803 mg/kg by the application of wounding stress. This increase depends on the storage conditions

of the wounded tissue, such as temperature. For instance, when shredded-carrots are stored at 20 °C for two days, the concentration of CQA is increased by ~2000% [11]. On the other hand, when shredded-carrots are stored at 15 °C for six days, the concentration of CQA is increased by ~320% [9]. The wound-induced accumulation of CQA can be increased by 526%, 2965%, and 488% when shredded-carrots are treated with exogenous ET (1000 ppm), hyperoxia (80% O_2) and UV-light (60W at 50 cm below the lamp for 15 min) stresses, respectively, compared to whole carrots before storage (Table 1). The exogenous application of MJ (250 ppm) produces an inhibitory effect on the wound-induced accumulation of CQA in shredded carrots. Samples treated with MJ can accumulate ~27% less CQA compared with wounding alone [9].

Table 1. Effect of different abiotic stresses (wounding, UV-light, ethylene, and hyperoxia) on the accumulation of individual phenolic compounds in carrots.

Compound	Abiotic stress applied	Storage conditions	Phenolic content (mg/kg FW)		Increase (%)	Reference
			Before*	After		
Chlorogenic acid	W	6 day/15 °C	148	628	324	[9]
	W	2 day/20 °C	38.2	803.3	2002	[11]
	W + UV-C	4 day/15 °C	100	588	488	[4]
	W + E	6 day/15 °C	148	926	526	[9]
	W + H	2 day/20 °C	38.2	1171.4	2966	[11]
4,5-Dicaffeoylquinic acid	W	6 day/15 °C	32	236	637	[9]
	W + E	6 day/15 °C	32	281	778	[9]
3,5-Dicaffeoylquinic acid	W	4 day/15 °C	nd	49.1	-	[4]

Abbreviations: W = wounding, UV-C = ultra violet light C, E = ethylene, H = hyperoxia, FW = fresh weight; * Initial values of individual phenolics are variety dependent; Data shown was obtained from independent studies [4,9,11].

Section 2.1.2. Chlorogenic Acid Derivatives: 4,5-diCQA and 3,5-diCQA

The concentration of 4,5-diCQA in carrots is ~32 mg/kg and it can be increased to ~236 mg/kg in shredded carrots after six days of storage at 15 °C. The wound-induced accumulation of 4,5-diCQA in carrots can be affected by the application of additional stresses. For instance, the application of ET can induce ~19% higher accumulation of 4,5-diCQA in shredded carrots [9]. Other stresses such as UV-light and hyperoxia do not affect the accumulation of this phenolic compound [4,11]. The exogenous application of MJ in shredded-carrot tissue inhibits the wound-induced accumulation of 4,5-diCQA by 50% [9]. Interestingly, for lower wounding intensities (e.g., pie cuts) the application of additional stresses, including UV-light and hyperoxia, will increase the biosynthesis of 3,5-diCQA and 4,5-diCQA [4,11].

Reference

1. Jacobo-Velázquez, D.A.; Cisneros-Zevallos, L. An Alternative Use of Horticultural Crops: Stressed Plants as Biofactories of Bioactive Phenolic Compounds. *Agriculture* **2012**, *2*, 259–271.