

CORRECTION

Correction: Vitamin D₄ in Mushrooms

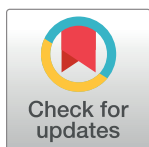
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There are errors in sentences 3–7 of the Abstract. The correct text is as follows: Vitamin D₄ was present (>0.01 µg/100 g) in a total of 18 composites and in at least one composite of each mushroom type except white button. The level was highest in samples with known UV exposure: vitamin D enhanced portabella, and maitake mushrooms from one supplier (0.02–0.7 and 2.25–3.54 µg/100 g, respectively). Other mushrooms had detectable vitamin D₄ in some but not all samples. In one composite of oyster mushrooms the vitamin D₄ content was about 25% of the vitamin D₂ content (0.63 vs. 2.59 µg/100 g). Vitamin D₄ exceeded 0.2 µg/100 g in the morel and chanterelle mushroom samples that contained D₄, but was undetectable in two morel samples.

There are multiple errors in the section titled Vitamin D₄ content of mushrooms. The corrected text is as follows.

Paragraph 1, Sentence 2: Overall, vitamin D₄ was detected (>0.01 µg/100 g) in 18 of the total of 38 composites analyzed and was present at an average concentration of 0.52 µg/100 g.

Paragraph 1, Sentences 4–6: There were 7 samples known to contain mushrooms that had been exposed to UV light during production: the Mushroom CC, the vitamin D enhanced portabella, and the two maitake samples from supplier C (Table 1). All of these samples contained vitamin D₄. The two maitake mushroom samples that were high in vitamin D₂ (63.2 and 48.9 µg/100 g) were also high in vitamin D₄ (3.54 and 2.25 µg/100 g, respectively). These mushrooms were found to have been exposed to UV light based on the growing conditions reported to be used by this producer [26].

**OPEN ACCESS**

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Table 1. Vitamin D₄ and pro-vitamin D₄ (22,23-dihydroergosterol; ergosta-5,7-dienol) content of ten types of mushrooms.

Mushroom	Scientific name	NDB no. ^a	Com- posite ^b	Moisture (g/ 100g)	Vitamin D ₄			Std Err	22,23-Dihydroergosterol	
					µg/100g fresh weight ^c	Mean	SD		mg/100g fresh weight ^c	Mean
White button	<i>Agaricus bisporus</i>	11260	1	92.85	-	-	-	-	5.97	6.03 ^{B,C}
			2	92.81	-	-	-	-	5.79	
			3	92.35	-	-	-	-	5.86	
			4	92.47	-	-	-	-	6.49	
Enoki	<i>Flammulina velutipes</i>	11950	A1	87.68	-	0.01 ^B	0.02	0.01	17.0	16.5 ^A
			A2	88.47	-	-	-	-	18.0	
			G1	88.28	0.04	-	-	-	17.0	
			1	89.30	-	-	-	-	13.8	
Shiitake	<i>Lentinus edodes</i>	11238	1	86.90	0.03	0.05 ^B	0.05	0.02	7.31	6.51 ^{B,C}
			2	91.41	0.07	-	-	-	7.25	
			3	90.53	0.11	-	-	-	6.15	
			A1	90.11	-	-	-	-	5.34	
Maitake	<i>Grifola frondosa</i>	11993	A1	88.37	-	1.45 ^A	1.75	0.88	8.90	6.34 ^{B,C}
			A2	88.59	-	-	-	-	9.00	
			C1	92.30	3.54	-	-	-	3.53	
			C2	91.92	2.25	-	-	-	3.92	
Oyster	<i>Pleurotus ostreatus</i>	11987	A1	89.70	0.08	0.18 ^{A, B}	0.30	0.15	8.55	8.89 ^B
			1	88.77	-	-	-	-	11.7	
			2	90.38	0.63	-	-	-	8.16	
			3	90.54	-	-	-	-	7.13	
Crimini	<i>Agaricus bisporus</i>	11266	1	91.92	-	0.03 ^B	0.06	0.03	5.25	5.92 ^{B,C}
			2	91.22	0.12	-	-	-	6.11	
			A1	93.08	-	-	-	-	5.42	
			B1	92.07	-	-	-	-	6.92	
Portabella	<i>Agaricus bisporus</i>	11265	1	90.96	-	0.01 ^B	0.03	0.01	6.75	6.18 ^{B,C}
			2	92.22	-	-	-	-	5.45	
			3	91.29	0.05	-	-	-	6.53	
			4	91.25	-	-	-	-	5.97	
Portabella, uv treated	<i>Agaricus bisporus</i>	11998	A1	94.86	0.02	0.36 ^{A, B}	0.32	0.16	4.57	4.70 ^C
			A2	95.12	0.17	-	-	-	3.94	
			B1	94.76	0.70	-	-	-	5.10	
			B2	93.68	0.56	-	-	-	5.20	
Chanterelle	<i>Cantharellus californicus</i> or <i>C. cibarius</i>	11239	D1	91.09	0.08	0.16 ^{A, B}	0.11	0.08	5.23	4.49 ^C
			D2	88.61	0.24	-	-	-	3.75	
Morel	<i>Morchella spp.</i>	11240	E1	89.46	0.24	0.11 ^B	0.13	0.07	7.13	5.79 ^{B,C}
			E2	90.38	0.22	-	-	-	5.75	
			F1	89.44	-	-	-	-	5.31	
			F2	89.18	-	-	-	-	4.98	

^aDatabase entry number from United States Department of Agriculture (USDA) National Nutrient Database for Standard Reference [53];

^bComposites are combinations of samples from statistical sampling locations in the U.S., or retail suppliers, as described in Phillips et al. [14]. Composites designated with the same capital letter were from the same supplier.

^c—indicates less than the limit of detection (0.01 µg/100 g fresh weight).

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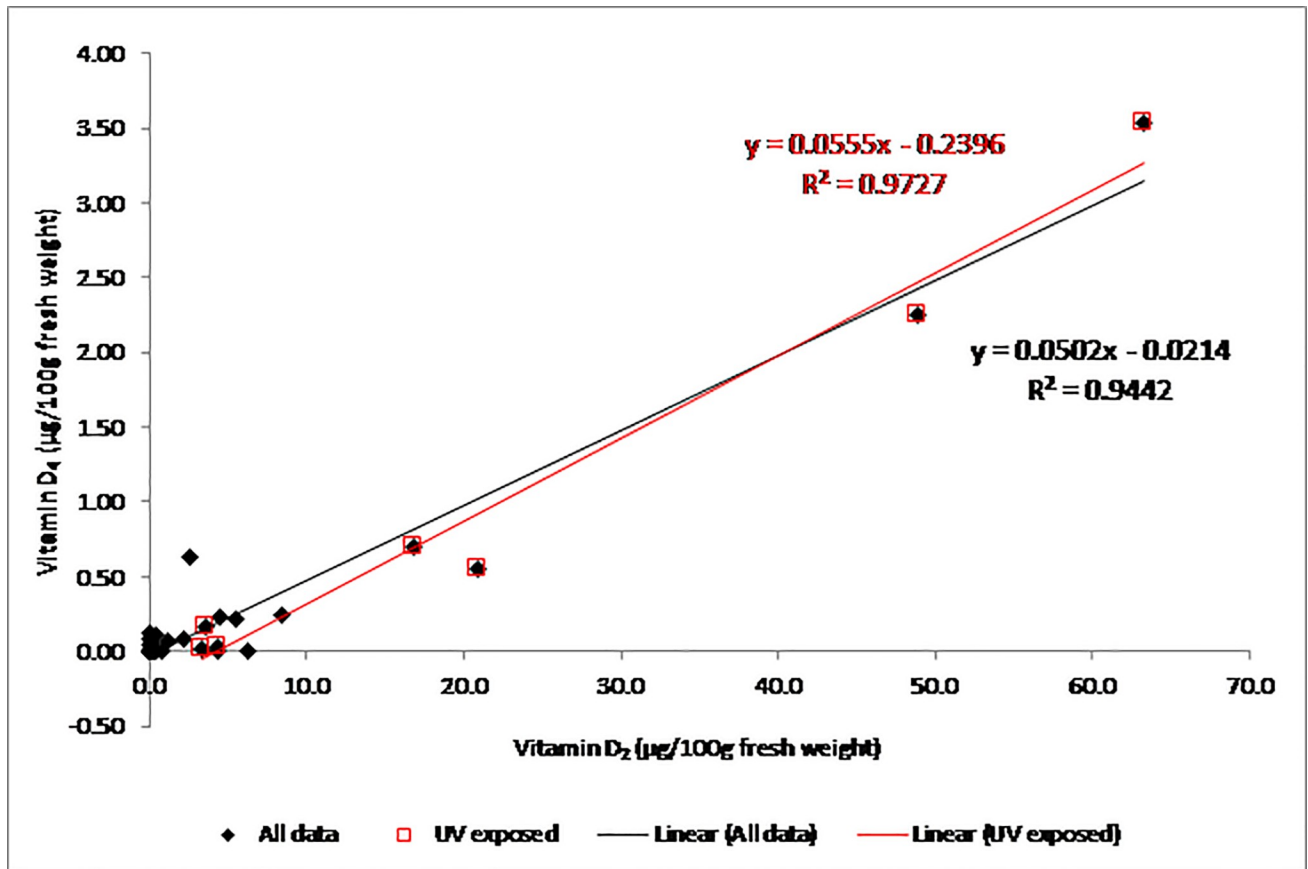


Fig 4. Relationship between the vitamin D₄ and vitamin D₂ concentrations in ten types of mushrooms (Table 1). Data for vitamin D₂ were previously reported [14].

<https://doi.org/10.1371/journal.pone.0253992.g001>

Paragraph 1, Sentences 8–9: In oyster mushrooms the composite highest in vitamin D₂ (2.59 µg/100 g) had a vitamin D₄ content approximately 25% of D₂ (0.63 µg/100 g). Vitamin D₄ exceeded 0.2 µg/100 g in the morel and chanterelle mushroom samples that contained D₄ (all but two morel composites).

Paragraph 2, Sentences 2–3: The mean vitamin D₄ concentration in the Mushroom CC samples assayed in this study was 0.014 µg/100g with a standard deviation of 0.0042 µg/100 g (standard error, 0.0008 µg/100 g). Greater precision at higher concentrations would be expected [27].

There are errors in Table 1 and in Fig 4. In Table 1 and Fig 4, the values for vitamin D₄ were off by a factor of 10. The Table 1 caption incorrectly reads “pre-vitamin D₄” instead of “pro-vitamin D₄”. Please see the corrected Table 1, Table 1 caption, and Fig 4 below.

Reference

1. Phillips KM, Horst RL, Koszewski NJ, Simon RR (2012) Vitamin D₄ in Mushrooms. PLoS ONE 7(8): e40702. <https://doi.org/10.1371/journal.pone.0040702> PMID: 22870201