

## WHEATGRASS NUTRITIONAL ANALYSIS

**Comments:**

Methods for determination of chlorophyll and carotenoid content ( $\beta$ -carotene equivalents) adapted from: Knee, M. 1972: Anthocyanin, carotenoid, and chlorophyll changes in the peel of Cox's Orange Pippin apples during ripening on and off the tree. Journal of Experimental Botany 23: 184-196.

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**Qualifying Statement**

The results given in this report apply only to the samples provided to Crop and Food Research, which may or may not be representative of the entire samples of plant material.

The analysis was done by [Crop and Food Research NZ](#)

**Wheatgrass Nutritional Analyses**

Results apply to samples as received

	Units	Amount
Energy	kJ/100g	1064.5
Nitrogen	%	4.54
Protein	g/100g	28.38
Fat – total	g/100g	6.03
Fat – saturated		
Lauric acid (12:0)	g/100g	0.02
Palmitic acid (16:0)	g/100g	0.47
Stearic acid (18:0)	g/100g	0.02
Behenic acid (22:0)	g/100g	0.03
Fat – unsaturated		
Oleic acid (18:1)	g/100g	0.04
Linoleic acid (18:2)	g/100g	0.45
Linolenic acid (18:3)	g/100g	3.17
Fat – unidentified	g/100g	1.83
Carbohydrate – total	g/100g	4.92 <sup>1[1]</sup>
Carbohydrate – starch	g/100g	0.32
Carbohydrate – sugars		
Fructose	g/100g	0.6
Glucose	g/100g	1.2
Lactose	g/100g	<0.1
Maltose	g/100g	<0.1
Sucrose	g/100g	2.8
Fibre <sup>2[2]</sup>	g/100g	34.41
Aluminium	mg/100g	13
Arsenic	$\mu$ g/100g	<25
Boron	$\mu$ g/100g	680
Cadmium	$\mu$ g/100g	1
Calcium	mg/100g	430
Cesium	$\mu$ g/100g	4.1

<sup>1[1]</sup> Minimum value

Chromium	µg/100g	210
Cobalt	µg/100g	6.1
Copper	µg/100g	930
Iron	mg/100g	17
Lead	µg/100g	16
Lithium	µg/100g	11
Magnesium	mg/100g	170
Manganese	µg/100g	2300
Mercury	µg/100g	<2
Molybdenum	µg/100g	53
Nickel	µg/100g	60
Phosphorus	mg/100g	410
Potassium	mg/100g	3800
Rubidium	µg/100g	39
Selenium	µg/100g	<25
Sodium	mg/100g	320
Tin	µg/100g	3.8
Vanadium	µg/100g	33
Zinc	µg/100g	2900
Vitamin C	mg/100g	548
Vitamin E	IU/100g	36.1
Thiamine	mg/100g	0.80
Vitamin B2 – total	mg/100g	2.33
Vitamin B3 – total	mg/100g	6.49
Vitamin B6 – total	mg/100g	1.30
Folic acid	µg/100g	1130
Beta-carotene	µg/100g	<10

#### Amino Acid Profile

Free Amino Acids	mg/g	% weight <sup>3[3]</sup>
D,L-O-Phosphoserine	ND <sup>4[4]</sup>	0.00
Taurine	ND	0.00
O-Phosphoethanolamine	ND	0.00
L-Aspartic acid	0.50	2.91
L-Hydroxyproline	ND	0.00
L-Threonine	0.58	3.35
L-Serine	1.07	6.21
L-Asparagine	4.32	24.97
L-Glutamic acid	0.61	3.53
L-Glutamine	1.43	8.27
D,L-α-Aminoadipic acid	ND	0.00
L-Proline	0.33	1.93
Glycine	0.14	0.80
L-Alanine	1.69	9.80
Citrulline	ND	0.00
L-α-Amino-n-butyric acid	ND	0.00
L-Valine	0.56	3.23

<sup>2[2]</sup> Total dietary fibre

L-Cystine	ND	0.00
L-Methionine	0.15	0.85
L-Cystathione	ND	0.00
L-Isoleucine	0.27	1.59
L-Leucine	0.49	2.86
L-Norleucine	ND	0.00
L-Tyrosine	0.18	1.05
L-Phenylalanine	0.39	2.28
β-Alanine	ND	0.00
D,L-β-Amino-i-butyric acid	0.55	3.16
D,L-Homocystine	ND	0.00
γ-Amino butyric acid	3.10	17.90
L-Tryptophan	ND	0.00
Ethanolamine	ND	0.00
D,L & allo-Hydroxylysine	ND	0.00
Ammonia	0.09	0.51
L-Ornithine	ND	0.00
L-Lysine	0.26	1.50
L-Histidine	0.29	1.70
L-3-Methylhistidine	ND	0.00
L-1-Methylhistidine	ND	0.00
L-Arginine	0.28	1.61
<b>TOTAL</b>	<b>17.29</b>	<b>100.00</b>

#### Amino Acid Profile

After Hydrolysis	mg/g	% weight <sup>5[5]</sup>
Alanine	16.0	7.1
Arginine	14.3	6.4
Aspartic acid <sub>6[6]</sub>	29.1	13.0
Glutamic acid <sub>6</sub>	29.8	13.3
Glycine	11.9	5.3
Histidine	5.3	2.4
Isoleucine	8.9	4.0
Leucine	19.3	8.6
Lysine	15.2	6.8
Phenylalanine	12.3	5.5
Proline	12.2	5.4
Serine	11.7	5.2
Threonine	11.8	5.3
Tyrosine	9.2	4.1
Valine	16.8	7.5
<b>TOTAL</b>	<b>224.1</b>	<b>100.0</b>

**Results** Chlorophyll determined spectrophotometrically Carotenoids determined spectrophotometrically as β-carotene equivalents

Carotenoids 1.04mg/g  
Chlorophyll 9.07mg/g