

HUMAN NUTRITION

ZIVO Bioscience produces an optimized, proprietary strain of algae that contains a unique blend of protein, micronutrients and non-starch polysaccharides.

Consumers are increasingly calling for less reliance on antibiotics, hormones and GMOs in food production. ZIVO's non-GMO algae naturally promotes a healthy immune system and provides an ideal plant-based source of protein (contains 45% pure protein by weight) when mixed as a dry powder with other ingredients or excipients to create a finished product.

The algae are green, clean, and sustainable and can be naturally grown for large-scale commercial use. Unlike other species of algae used as food ingredients that have an unpleasant "fishy" odor, ZIVO algal powder is almost completely odorless and tasteless.

The algae, as well as the cultivation and harvesting processes, are free from heavy metals, harmful microbes, and toxins.

NUTRIENTS

Vitamin A

100g of Zivo algae (freeze dried) has 24,425 IU Vitamin A (for comparison, spirulina has 570 IU)

<https://ndb.nal.usda.gov/ndb/foods>

100 g of Zivo algae has more Vitamin A than 3 oz liver or a ½ C spinach

<https://ods.od.nih.gov/factsheets/VitaminA-HealthProfessional/>

About 28%–37% of the general population uses supplements containing vitamin A

<http://www.ncbi.nlm.nih.gov/pubmed/21178089?dopt=Abstract>

Vitamin C

100 g of Zivo algae (freeze dried) has 118 mg Vitamin C (for comparison, spirulina has 10 mg)

<https://ndb.nal.usda.gov/ndb/foods>

1 medium sized orange has 70 mg Vitamin C

<https://ndb.nal.usda.gov/ndb/foods/show/2287?manu=&fgcd=>

"NHANES data from 1999–2000 indicate that approximately 35% of adults take multivitamin supplements (which typically contain vitamin C) and 12% take a separate vitamin C supplement [19]. According to 1999–2002 NHANES data, approximately 29% of children take some form of dietary supplement that contains vitamin C [20]."

<https://ods.od.nih.gov/factsheets/VitaminC-HealthProfessional/>

Calcium

100 g of Zivo algae (freeze dried) has 79 mg calcium (for comparison, spirulina has 120 mg)

<https://ndb.nal.usda.gov/ndb/foods>

“About 43% of the U.S. population (including almost 70% of older women) uses dietary supplements containing calcium, increasing calcium intakes by about 330 mg/day among supplement users [1,6].”

<https://ods.od.nih.gov/factsheets/Calcium-HealthProfessional/>

Protein

100 g of Zivo algae (freeze dried, non-concentrated natural form) has 43 g protein and outperforms soy flour, fish protein powder and concentrated whey powder in 20 essential amino acids.

<https://ndb.nal.usda.gov/ndb/foods>

Yogurt (plain, whole milk) has 3.5 g protein (per 100 g)

<https://ndb.nal.usda.gov/ndb/foods/show/105?manu=&fgcd=>

Muscle Milk powder (concentrated whey-based protein supplement) has 46 g protein*

<https://ndb.nal.usda.gov/ndb/foods/show/191?manu=&fgcd=>

*Concentrated whey powder protein content is boosted by using solvents and acids. Whey in its natural form has less than 20 grams of protein per 100 grams of product.

National Food Laboratory Nutritional Analysis

Algae Biomass ZB-001 Comp of 3

NFL ID: AG61160

Analyte	Result	Units	Test Date	Method Ref.
cis-cis Polyunsaturated Fat	5.41	%	08/10/15	AOAC 996.06
Monounsaturated Fat	0.13	%	08/10/15	AOAC 996.06
Saturated Fat	2.15	%	08/10/15	AOAC 996.06
Total Fat	8.04	%	08/10/15	AOAC 996.06
trans Fat	0.01	%	08/10/15	AOAC 996.06
Fructose	<0.25	%	07/27/15	CM4200
Glucose	0.49	%	07/27/15	CM4200
Lactose	<0.25	%	07/27/15	CM4200
Maltose	<0.25	%	07/27/15	CM4200
Sucrose	<0.25	%	07/27/15	CM4200
Total Sugars	0.49	%	07/27/15	CM4200
Ash	3.80	%	07/27/15	CM4001
Calcium	79.4	mg/100g	07/28/15	CM5004
Calories	411	cal/100g	08/12/15	Calculation
Carbohydrates	42.02	%	08/12/15	Calculation
Cholesterol	<1	mg/100g	07/28/15	Subcontracted
Iron	7.36	mg/100g	07/30/15	CM5004
Moisture	3.54	%	07/24/15	CM4012
Protein	42.6	%	07/22/15	CM4006
Sodium	172.2	mg/100g	08/07/15	CM5004
Total Dietary Fiber	23.9	%	07/28/15	AOAC 991.43
Vitamin A (Beta Carotene)	24425	IU/100g	07/29/15	MN4101
Vitamin C	117.98	mg/100g	07/23/15	CM4104

Comparative Nutritional Profile

	ZIVO algae (100 g, dried)	Spirulina algae (100 g, dried)	beef liver (3 oz, raw)	spinach (1 cup, raw)	orange (medium-sized)	yogurt (1 cup, plain, whole milk)	Muscle Milk protein powder (100 g)	Soy beverage w/protein powder (100 g)
Vitamin A	24,425 IU	570 IU	14,363 IU	2813 IU	295 IU	243 IU	2500 IU	0 IU
Vitamin C	118 mg	10 mg	1 mg	8 mg	70 mg	1 mg	30 mg	0 mg
Calcium	79 mg	120 mg	4 mg	30 mg	52 mg	296 mg	500 mg	178 mg
Protein	43 g	57 g	17 g	0 g	1 g	9 g	46 g	56 g
Iron	7 mg	29 mg	4 mg	0 mg	0 mg	0 mg	9 mg	12 mg
Fiber	24 g	4 g	0 g	0 g	3 g	0 g	7 g	7 g
Sodium	172 mg	1048 mg	59 mg	24 mg	0 mg	113 mg	329 mg	733 mg
Cholesterol	0 mg	0 mg	234 mg	0 mg	0 mg	32 mg	21 mg	0 mg

Comparative Protein Content

Per 100 grams of product	ZIVO freeze dried algal biomass (Natural)	BlueWave Fish Protein Isolate (CONC)	Advance Fish Protein Powder (CONC)	Source Organic Whey (CONC)	Soy flour, defatted (CONC)	Whey, acid, dried (Natural)	Spirulina, dried (Natural)
Protein in grams	42.6	85	87	85	51.46	11.73	57.47

Aspartic acid (g)	2.22	1.68	1.33	2.50	2.87	2.45	2.52
Alanine (g)	1.88	1.32	0.85	0.94	1.08	1.09	1.97
Arginine (g)	1.67	1.35	0.87	0.31	1.77	0.70	1.81
Cystine (g)	0.23	0.00	0.24	0.08	0.37	0.45	0.29
Glutamic acid (g)	2.43	2.48	1.93	5.32	4.43	4.48	3.65
Glycine (g)	1.40	2.38	0.74	0.39	1.05	0.45	1.35
Histidine (g)*	0.38	0.25	0.36	0.23	0.62	0.49	0.47
Isoleucine (g)*	0.94	0.63	0.59	1.17	1.11	1.24	1.40
Leucine (g)*	1.98	1.19	1.02	2.42	1.86	2.39	2.15
Lysine (g)*	1.21	1.10	1.14	1.95	1.52	2.15	1.31
Methionine (g)*	0.32	0.53	0.73	0.50	0.31	0.47	0.50
Phenylalanine*	1.34	0.66	0.54	0.47	1.19	0.83	1.21
Proline (g)	1.20	1.20	0.55	1.48	1.34	1.49	1.04
Serine (g)	1.02	1.15	0.48	1.09	1.32	1.15	1.31
Threonine (g)*	1.17	0.85	0.63	1.71	0.99	1.26	1.29
Tryptophan (g)*	0.51	0.00	0.31	0.23	0.33	0.51	0.40
Tyrosine (g)	0.90	0.54	0.45	0.47	0.86	0.64	1.12
Valine (g)*	1.25	0.82	0.67	1.03	1.14	1.24	1.53

*Essential Amino Acids