





# 青岛新月蓝海生物科技有限公司


QINGDAO NEW MOON BLUE OCEAN BIO-TECH CO., LTD.

QINGDAO NEW MOON BLUE OCEAN BIO-TECH CO., LTD.

 No. 213 East Zhuhai Road, Huangdao District, Qingdao, China

 [www.nmblueocean.com](http://www.nmblueocean.com)

 +86-15854285583

 [admin@nmblueocean.com](mailto:admin@nmblueocean.com)

全球海源生物刺激素专业供应商

Global Professional Supplier of Marine Biostimulations



·SEAWEED

·HUMATE

·AMINO ACID

·FISH PROTEIN

·CHITOSAN OLIGOSACCHARIDE





NMBO is a professional manufacturer and supplier of agricultural biostimulants primarily derived from marine raw materials. Utilizing large brown seaweed, fish, shrimp, shells, and other raw materials, we employ advanced production processes and a strict quality control system to develop and produce a range of products. We are a well-known domestic and international enterprise in the production and sale of marine biostimulants and fertilizers. We offer: Seaweed fertilizer series products; Marine chemical products; Relevant professional technical support.

# ABOUT US



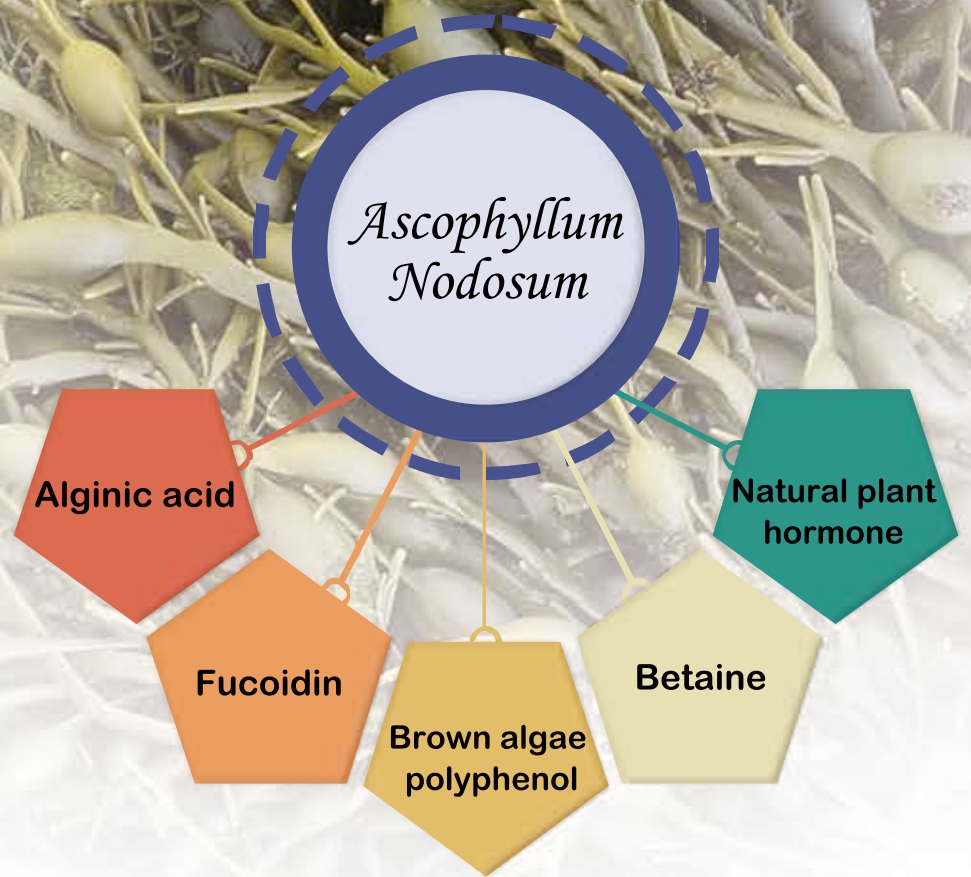
## R&D CENTER



NMBO's R&D center is equipped with a complete range of advanced physical and chemical analysis instruments. With core technologies such as "multiple enzymatic hydrolysis of seaweed," "NST," and "MPTF," our team of professionals in seaweed extraction processes has nearly 30 years of experience. We meet various research and analysis needs in the field of seaweed fertilizers.

- ▶ 10T water softening treatment system; 150T raw material storage system;
- ▶ Ultrafine grinding equipment, 6T heating pressure reactor, 20T enzymatic hydrolysis insulation reactor, 40T ambient temperature reactor;
- ▶ Triple mechanical filtration system, vibrating filtration screen, plate and frame filtration screen, horizontal screw centrifuge, triple-effect concentration equipment;
- ▶ Large pressure spray drying platform, medium-sized centrifugal spray drying equipment, fluidized bed drying and granulating equipment, extrusion granulating equipment.





Ascophyllum nodosum is found in cold-water areas of the northern hemisphere, mainly concentrated on wind-sheltered rocky coastlines along the mid-tide zone of the North Atlantic. Exposed to low-temperature, high-salinity seawater during high tide and subjected to dry, hot beaches during low tide, Ascophyllum nodosum endure temperature changes exceeding 20°C within a day and over 50°C throughout the year. Their resilience to adverse environmental changes makes them an excellent source for high-quality seaweed fertilizer.

**Highest Alginic acid content approaching 30%**

- ① Small-molecule alginic acid stimulates plant production of indole-3-acetic acid (IAA), promoting root growth and inducing plant self-defense.
- ② Large-molecule alginic acid improves soil water retention, dilutes soil solution salinity, and enhances soil buffering capacity.
- ③ Alginic acid preferentially binds with soil heavy metal ions, reducing nutrient loss and improving nutrient absorption efficiency.
- ④ As a high-quality carbon source, it provides a material basis for soil microbial growth, stimulates microbial metabolism, and improves soil microecology.

**Highest Fucoidin content approaching 20%**

- ① Fucoidin directly benefits intertidal zone seaweed in adapting to UV radiation, dryness, and high-salinity environments, protecting cell tissues.
- ② Fucoidin can stimulate the expression of plant salicylic acid pathways, synthesizing more antibacterial, antiviral, and stress-resistant proteins.

**Highest content approaching 15%**

- ① It exhibits significant antioxidant properties, enhancing tissue adaptability to adversity.
- ② It has a unique scent with spectrum insect-repelling functionality, and is not prone to resistance development.

**Betaine**

Increases plant chlorophyll content, enhances photosynthesis, maintains moisture balance, and improves crop stress resistance.

**Natural plant hormone**

Promotes cell division and growth, tissue differentiation, induces defense and stress responses, regulates cell osmotic pressure, promotes plant growth, increases yield, and quality.

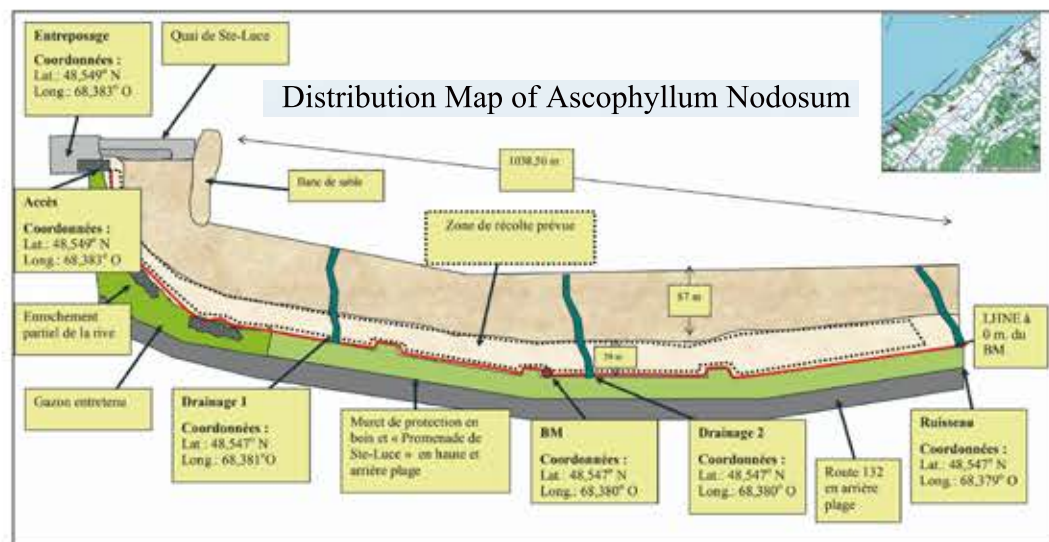
**Comparison of the content of main active components in different seaweeds**

(%, dry seaweed)

Species	Alginic Acid	Fucoidin	Brown Algae Polyphenol
Laminaria Japonica	22.54	0.5425	3.03
Sargassum Pallidum	17.38	13.93	0.3
Macrocystis Pyrifera	27.58	10.5	1.5
Ascophyllum Nodosum	25.76	14.175	14
Enteromorpha Prolifra	0	0	0



NMBO has multiple high-quality raw material partners and owns 21 *Ascophyllum nodosum* sea areas in the core region of Quebec, Canada. With long-term seaweed harvesting permits, we produce 35,000 tons of wild dried *Ascophyllum nodosum* annually. Before harvesting, we conduct surveys of *Ascophyllum nodosum* growth, analyze and determine harvesting plans, ensuring a minimum growth cycle of 6 months and strict control over harvest quantities. Using large machinery during harvesting reduces costs, allowing us to provide whole, fragmented, and powdered wild *Ascophyllum nodosum* raw materials. After harvesting, natural drying is employed, avoiding high-temperature drying to preserve the active substances in *Ascophyllum nodosum* to the maximum extent.



## SEAWEED FERTILIZER

Seaweed is rich in polysaccharides that are often lacking in many terrestrial plants, playing a significant role in modern agricultural production.

Improves soil environment, enhances soil physicochemical properties, increases soil water retention capacity, promotes the growth of beneficial microorganisms in the root zone, and establishes a good microecological environment.



Rich in natural plant growth regulators, promotes cell division, enhances photosynthetic efficiency, improves nutrient absorption, and stimulates plant growth.



Induces the synthesis of protective proteins in plants, enhancing adaptability to environmental stress (abiotic stress) such as drought, low temperature, and saline-alkali conditions.



- SEAWEED
- HUMATE
- AMINO ACID
- FISH PROTEIN
- CHITOSAN OLIGOSACCHARIDE

# PRODUCT



## Seaweed Extract Flake/Powder

Ingredients	Content I	Content II
Alginic Acid	≥ 18%	≥ 35%
Organic Matter	45.0-55.0%	≥ 45.0%
Total Nitrogen (N)	1.0-3.0%	≥ 1.0%
Phosphorus (P <sub>2</sub> O <sub>5</sub> )	1.0-3.0%	≥ 2.0%
Potassium (K <sub>2</sub> O)	≥ 18%	≥ 18%
Mannitol	/	≥ 3.0%
Microelements (Fe/Zn/B/Mo)	≥ 0.5%	≥ 0.5%
Natural Plant Hormone	300 ppm	700ppm
PH	9.0-11.0	9.0-11.0
Solubility In Water	100%	100%
Appearance	Powder/Flake	Powder/Flake



Seaweed Extract Powder



Seaweed Extract Flake



## Seaweed Extract Liquid

Ingredients	Content
Alginic Acid	≥ 50g/L
Organic Matter	≥ 100g/L
Total Nitrogen (N)	≥ 5g/L
Phosphorus (P <sub>2</sub> O <sub>5</sub> )	≥ 10g/L
Potassium (K <sub>2</sub> O)	≥ 30g/L
Mannitol	≥ 30g/L
Microelements(Fe/Mo/Zn/B)	≥ 2g/L
Natural Plant Hormones	≥ 1000ppm
Seaweed Polysaccharide	≥ 100g/L
Gravity	1.10-1.20
PH	6.0-8.0
Appearance	Dark Brown Liquid



Seaweed Extract Liquid



## Green Seaweed Liquid

Ingredients	Content I	Content II
Alginic Acid	≥ 21g/L	≥ 30g/L
Organic Matter	≥ 150g/L	≥ 80g/L
Total Nitrogen (N)	≥ 80g/L	≥ 70g/L
Phosphorus (P <sub>2</sub> O <sub>5</sub> )	≥ 30g/L	≥ 70g/L
Potassium (K <sub>2</sub> O)	≥ 40g/L	≥ 70g/L
Microelements(Fe/Mo/Zn/B)	≥ 8g/L	≥ 2g/L
Natural Plant Hormones	≥ 300ppm	≥ 300ppm
Gravity	1.18-1.25	1.18-1.25
PH	6.0-8.0	6.0-7.0
Appearance	Deep Green Liquid	Deep green liquid



Green Seaweed Liquid



### APPLICATION METHODS

Based on the experience of using the application method

Application period	Application Methods	Dilute ratio	Dosage	Interval
Avoiding full-bloom stage	Spraying	Diluted as 2000-3000 times	300-900g/ha	≥ 10days
The whole growth period	Irrigation (Sprinkler irrigation & Drip irrigation)	Diluted as 1500-2000 times	3000-9000g/ha	≥ 10days
The whole growth period	Watering (Surface irrigation)	Diluted as 1200 times	400-600g/ha	≥ 25days



### APPLICATION METHODS

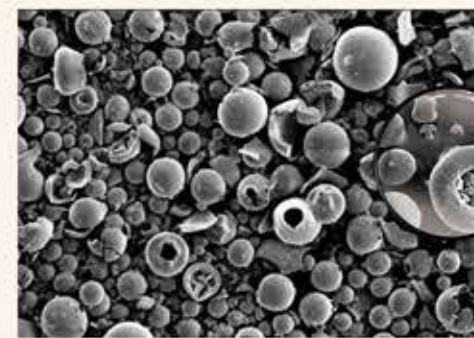
Based on the experience of using the application method

Application period	Application Methods	Dilute ratio	Dosage	Interval
Avoiding full-bloom stage	Spraying	Diluted as 1000-1500 times	300-900g/ha	≥ 10days
The whole growth period	Irrigation (Sprinkler irrigation) & Drip irrigation)	Diluted as 1000-1500 times	3000-9000g/ha	≥ 10days
The whole growth period	Watering (Surface irrigation)	Diluted as 800-1200 times	400-600g/ha	≥ 25days

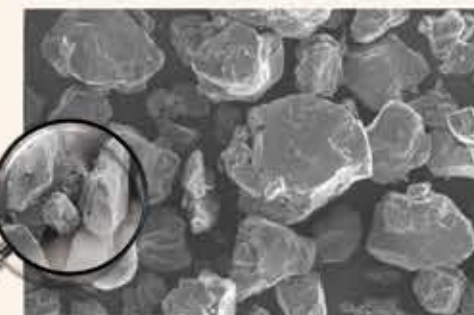


## Seaweed Extract Micro-granule

Ingredients	Content
Alginic Acid	≥ 18%
Organic Matter	≥ 45%
Total Nitrogen (N)	1.0-3.0%
Phosphorus (P <sub>2</sub> O <sub>5</sub> )	1.0-3.0%
Potassium (K <sub>2</sub> O)	≥ 18%
Natural Plant Hormone	600ppm
Appearance	Black Brown Granule



seaweed extract micro-granule



seaweed extract powder



L: seaweed extract micro-granule

R: seaweed extract powder

Rapid dispersion on the water surface, forming a cloud-like mist that quickly moistens and disperses. The specific surface area is increased by more than 20 times, releasing numerous micro bubbles to enhance dissolution, without the need for stirring. It dissolves and disperses automatically. In a 1000ml beaker dissolution test, it achieves stable dispersion after 35 seconds



### TECHNICAL SPECIFICATIONS

The drum surface temperature mostly ranges from 145 to 165°C, with some parts reaching up to 180 or even 240 °C. The drum speed is 1-3 rpm, and the higher the temperature, the higher the speed.

### MATERIAL CHARACTERISTICS

Small heating area, the surface of the material sharply crinkles and hardens after being heated; Long drying time, can easily trigger the Maillard browning reaction of reducing sugars and amino acids, resulting in darkening of color. Active ingredients such as flavonoids, amines, and terpenes are lost to a greater extent during steam loss.

### DISSOLUTION CHARACTERISTICS

Drum drying causes the material surface to harden, making it difficult to form a large number of micropores, resulting in a low porosity, high bulk density, strong particle cohesion, small specific surface area, poor fluidity, and poor wettability and dispersibility when encountering water. It dissolves slowly and sinks in a linear shape to the bottom of the container, making it difficult to dissolve without stirring, and it's hard for the material to spread upward to the top of the container on its own. Powdered products are also prone to agglomeration, which increases the difficulty of dissolution.





## Green Seaweed Extract

Ingredients	Content I	Content II
Alginic Acid	≥ 35%	≥ 40%
Organic Matter	≥ 35%	≥ 35%
Total Nitrogen (N)	≥ 2%	≥ 3%
Phosphorus (P <sub>2</sub> O <sub>5</sub> )	≥ 7%	≥ 7%
Potassium (K <sub>2</sub> O)	≥ 18%	≥ 18%
PH	5.0 – 8.0	5.0 – 8.0
Algae-Derived Stimulants	500ppm	500ppm
Microelements	≥ 0.5%	≥ 0.5%
Moisture	≤ 10%	≤ 10%
Solubility In Water	100%	100%
Appearance	Light Green Powder	Dark Green Powder



Green Seaweed Extract I



Green Seaweed Extract II



## APPLICATION METHODS

- (1) Soaking seed, root irrigation, micro-irrigation, drip irrigation, foliar spraying, flushing, etc. Fertilization interval 7-14 days.
- (2) Best time to use: Spray evenly in the morning and evening when the weather is good.
- (3) It should be sprayed once in case of rain within 6 hours after spraying.
- (4) This product is widely used in flowers, vegetables, melons and fruits, grain, cotton, and other economic crops and various field crops.

Foliar spraying	Flushing, drip irrigation	Seed soaking and dressing	Compounding with fertilizers
Dilute 2000-3000 times	400-750g/ha	Seed dressing: 2g/kg Soaking: dilute 600-800 times	Water soluble fertilizer addition: 1-5kg/ton Compound fertilizer addition: 2.5kg/ton

## Seaweed Polysaccharide

Ingredients	Content I	Content II	Content III
Alginic Acid	≥ 15%	≥ 20%	≥ 25%
Seaweed Polysaccharide	≥ 30%	≥ 40%	≥ 60%
Organic Matter	≥ 35%	≥ 35%	≥ 40%
Total Nitrogen (N)	≥ 4%	≥ 2%	≥ 1.5%
Phosphorus (P <sub>2</sub> O <sub>5</sub> )	/	≥ 5%	/
Potassium (K <sub>2</sub> O)	≥ 17%	≥ 18%	≥ 12%
Mannitol	≥ 2%	≥ 4%	≥ 8%
Microelements	≥ 0.5%	≥ 0.5%	≥ 0.5%
MgO	≥ 2%	/	≥ 1%
Amino Acid	≥ 3%	≥ 0.5%	/
PH	5.0 - 8.0	5.0 - 8.0	5.0 - 8.0
Moisture	≤ 10%	≤ 10%	≤ 10%
Solubility In Water	100%	100%	100%
Appearance	Brown Powder	Brown Powder	Brown Powder



Seaweed Polysaccharide I



Seaweed Polysaccharide II



Seaweed Polysaccharide III



## APPLICATION METHODS

- (1) It is recommended to be mixed with other fertilizers or used alone.
- (2) Soaking seed, root irrigation, micro-irrigation, drip irrigation, foliar spraying, flushing, etc. Fertilization interval 7-14 days.
- (3) Best time to use: Spray evenly in the morning and evening when the weather is good.
- (4) It should be sprayed once in case of rain within 6 hours after spraying.
- (5) This product is widely used in flowers, vegetables, melons and fruits, grain and cotton, and other economic crops and various field crops.

Type	Foliar spraying	Flushing, drip Irrigation	Compounding with fertilizers
Powder	Dilute 2000-3000 times	300g/ha	Water-soluble fertilizer: 6-8kg/ton Compound fertilizer: 4-5kg/ton



## Seaweed Oligosaccharide

Ingredients	Content
Alginic Acid	≥ 75%
Seaweed Oligosaccharide	≥ 90%
Organic Matter	≥ 45%
Solubility In Water	100%
PH	5.0 - 8.0
Moisture	≤ 10.0%
Appearance	Brown Powder



Seaweed Oligosaccharide



## Seaweed Oligosaccharide Liquid

Ingredients	Content
Alginic Acid	≥ 150 g/L
Polysaccharide	≥ 100 g/L
PH	5.0 - 8.0
Appearance	Brown Liquid



Seaweed Oligosaccharide Liquid



## Seaweed Organic Fertilizer

Ingredients	Content
Seaweed Extract	≥ 30%
Organic Matter	≥ 45%
N+P <sub>2</sub> O <sub>5</sub> +K <sub>2</sub> O	≥ 5%
Moisture	≤ 15%
PH	5.0-8.0
Appearance	Granule



Seaweed Organic Fertilizer

## Potassium Fulvate

Ingredients	Content
Humic Acid	≥ 55%
Fulvic Acid	≥ 50%
Potassium (K <sub>2</sub> O)	≥ 12%
Moisture	≤ 12%
PH	9.0-11.0
Appearance	Black Powder/Flake



Potassium Fulvate Flake



Potassium Fulvate Powder

## Potassium Fulvate Micro-granule

Ingredients	Content
Humic Acid	≥ 55%
Fulvic Acid	≥ 50%
Organic Matter	≥ 60%
Potassium (K <sub>2</sub> O)	10-12%
Moisture	≤ 10%
PH	9.0-11.0
Appearance	Black Granule



Potassium Fulvate Micro-Granule

## Fulvic Acid

Ingredients	Content
Fulvic Acid	≥ 95%
Microelements	≥ 5%
Moisture	≤ 5%
PH	5.0-7.0
Appearance	Brown Powder



Fulvic Acid



## AMINO ACID-40

Ingredients	Content
Total Amino Acid	≥40%
Free Amino Acid	≥35%
Organic Nitrogen	≥7%
PH	4.0-6.0
Moisture	≤5%
Appearance	Light Yellow Powder



AMINO ACID-40

## AMINO ACID-80

Ingredients	Content
Free Amino Acid	≥80%
Organic Nitrogen	≥13%
PH	4.0-6.0
Moisture	≤5%
Appearance	Light Yellow Powder



## Fish Protein

Ingredients	Content
Fish Protein Peptide	≥70%
Total Amino Acid	≥80%
Free Amino Acid	≥15%
Total Nitrogen (N)	≥12%
PH	5.0-7.0
Appearance	Yellow Powder



Fish Protein

## Fish Protein Liquid

Ingredients	Content
Fish Protein Peptide	≥40%
Total Amino Acid	≥42%
Free Amino Acid	≥18%
Total Nitrogen (N)	≥7%
PH	5.0-7.0
Appearance	Brown Liquid



Fish Protein Liquid



## Chitosan Oligosaccharide

Ingredients	Content
Molecular Weight (DA)	340-3500
Chitosan Oligosaccharide	≥85%
DAC	≥90%
Ash	≤2%
Moisture	≤10%
PH	4.0-7.5
Appearance	Brown Powder



## Chitosan Oligosaccharide Liquid

Ingredients	Content
Molecular Weight (DA)	340-3500
Chitosan Oligosaccharide	≥10%
DAC	≥90%
PH	4.0-7.5
Appearance	Reddish Brown Liquid



# CONTACT US

- |   |  |              |  |
|---|--|--------------|--|
| <b>CHIWI</b><br>• CEO                             |  | <br><br><br> | lee@nmblueocean.com<br>+86-15854285583     |
| <b>JASON</b><br>• General Manager                 |  | <br><br><br> | jason@nmblueocean.com<br>+86-13793210427   |
| <b>YVONNE</b><br>• International Business Manager |  | <br><br><br> | yvonne@nmblueocean.com<br>+86-18561421579  |
| <b>ALEXA</b><br>• Business Manager                |  | <br><br><br> | alexa@nmblueocean.com<br>+86-18300288286   |
| <b>NINA</b><br>• Business Manager                 |  | <br><br><br> | nina@nmblueocean.com<br>+86-15092437030    |
| <b>IRIS</b><br>• Business Manager                 |  | <br><br><br> | iris@nmblueocean.com<br>+86-18300289587    |
| <b>JESSICA</b><br>• Business Manager              |  | <br><br><br> | jessica@nmblueocean.com<br>+86-18300289785 |



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