Since 1968

山东洁晶集团
SHANDONGJIEJING GROUP

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Jiejing Advantage

Specialize in brown seaweed extract product since 1968. We have branch offices in Chile, Peru, South Africa etc to keep enough brown seaweed for normal production.

Ascophyllum Nodosum: Chile, Peru, Ireland, Norway, Canada

Nori, Undaria pinnatifida, kelp: China, Japan, North Korea, South Korea

Sargassum

Chile, Argentina, South Africa, United States, Mexico

Factory tour

Large seaweed warehouse 2500MT capacity

Seaweed warehouse tour

Plan t Tour

PART 02

Liquid seaweed extract concentrate

You can buy the brown algae polyphenols stock solution as your material for fertilizer

Introduction

Brown algae polyphenols: Also called seaweed polyphenols, it is a natural phenolic compound extracted from seaweed, and it is a phloroglucinol compound. It features anti-oxidation, anti-bacterial, and anti-resistance, as well as can effectively open up the transportation channel of plant nutrients in the body, improve plant resistance to cold and waterlogging, and improve the overall nutrient transport capacity of plants. Salicylic acid and jasmonic acid and all natural active substances are retained.

01 Natural active substances stimulants: In addition to polyphenols and polysaccharides, microelements such as iron, manganese, copper, molybdenum, boron, magnesium and natural substances such as salicylic acid and jasmonic acid are contained too, which can effectively stimulate the production of non-specific active factors in plants and regulate the balance of endogenous hormones

02 Seaweed polyphenols have obvious inhibitory effects on a variety of bacteria, fungus, yeasts, and on common pathogenic bacteria like cholera, Staphylococcus aureus, E. coli.

03 Improve the activity of antioxidant enzymes in crops and reduce the damage of superoxide free radicals to crops under adversity. Increase the thickness of crop fence tissue and sponge tissue, improve crop resistance to cold, and reduce the photoinhibition damage to leaves caused by low temperature.

Industrialization characteristics

Break the industrialization monopoly of overseas physical extraction of seaweed

Keep algae active throughout:

1. The guarantee of the whole process logistics cold chain
2. The production technology adopts low-temperature physical wall breaking and countercurrent extraction technology, and the production line adopts the world's advanced automated manufacturing equipment.
3. No chemicals involved, keep all active substances

Industrialization：

1. Control and allocation of the cost through different products in the industrial chain
2. Bidirectional drive, large-scale mass production, sufficient production capacity

1. High activity: All kinds of biological stimulating substances in the seaweed are retained.
2. Stability: Through 1000 mesh ultrafiltration, the product has stable quality and is suitable for industrial applications.

01 **Keep algae active throughout**

02 **Seaweed fine chemicals**

03 **High activity and stability**

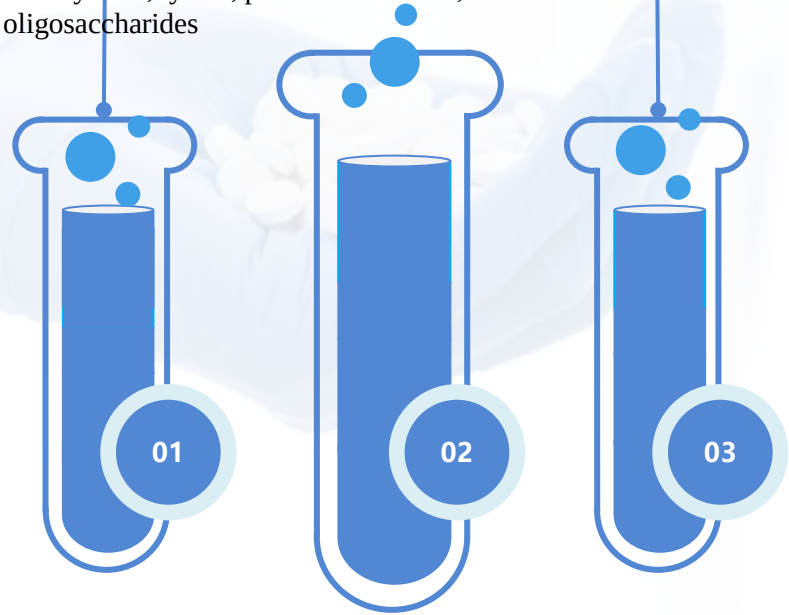
Compound Experiment

Compound

Place 50% polyphenol stock solution and 10% different kinds of raw materials in a beaker, add pure water, stir to dissolve, making the material dissolved in the polyphenol solution. After completely dissolved or a saturated state reached, stand for 24 hours, then observe the experimental phenomenon.

Compound ingredients

Ultrafiltrated polyphenol stock solution, urea, boric acid, potassium dihydrogen phosphate, potassium nitrate, potassium sulfate, manganese sulfate tetrahydrate, copper sulfate pentahydrate, zinc sulfate heptahydrate, EDTA-copper, EDTA-iron, EDTA-zinc, chloride Calcium, magnesium nitrate hexahydrate, lysine, potassium humate, chitosan oligosaccharides

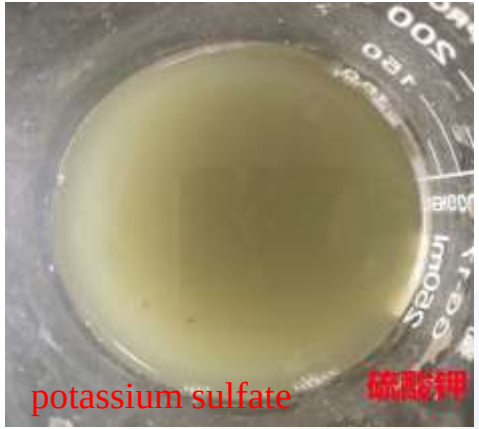


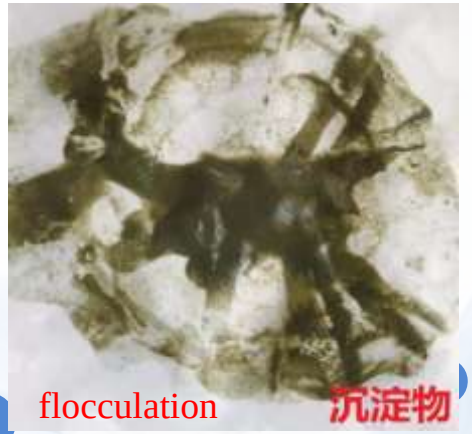
Obervation time

After standing for 24 hours, if the solution has no obvious precipitation, heat it in a water bath. After 1 hour in the water bath, take out the mixed solution of polyphenol and different kinds of raw materials, and observe the experimental phenomenon.

Experiment Phenomenon

What we can find?





Note 1: After standing for 24 hours, it was found by visual inspection that a small amount of flocs appeared after mixing potassium sulfate, copper sulfate pentahydrate, zinc sulfate heptahydrate, calcium chloride, magnesium nitrate hexahydrate with polyphenol stock solution. No flocculation or precipitation formed with other mixture. Phenomenon as shown above.

Note 2: Heat the mixed solution without flocculation and precipitation in a water bath. After 1 hour in the water bath, visual observation shows that a small amount of flocculates appear in potassium dihydrogen phosphate, potassium nitrate, and manganese sulfate pentahydrate. Phenomenon as shown

Experiment conclusion

Phenomenon / Mixture	precipitation at room temperature	Precipitation at heating
Urea	No	No
Boric acid	No	No
Potassium Dihydrogen Phosphate	No	Yes
Potassium nitrate	No	Yes
Potassium sulfate	Yes	Yes
Manganese Sulfate Tetrahydrate	No	Yes
Copper sulfate pentahydrate	Yes	Yes
Zinc Sulfate Heptahydrate	Yes	Yes
EDTA-copper	No	No
EDTA-iron	No	No
EDTA-Zinc	No	No
Magnesium Nitrate Hexahydrate	Yes	Yes
Calcium chloride	Yes	Yes

01 The table on the left is a summary of the results of the compounding of polyphenols and other materials. From the info in the table, it can be seen that the precipitated flocs formed by compounding with the polyphenol stock solution are all active metal ion salts. Complex metal ion salts such asEDTA-copper do not react with the polyphenol.

02 By testing, with the exception of potassium nitrate, potassium dihydrogen phosphate and sulfuric acid tetrahydrate, other active metal ion salts and polyphenol stock solution will react to form a small amount of precipitation or flocculation at room temperature.

03 By testing, if the addition ratio of potassium nitrate was set to 10%, and the addition ratio of polyphenol stock solution was 15%, no precipitated flocs were formed. The other metal ion-containing salts have little effect on adjusting the proportion of polyphenols. They can only relatively reduce the amount of floccules, but no flocculation can not be guaranteed. Therefore, adjusting the amount of polyphenols is not helpful.

04 The addition ratio of polyphenols and the critical point of flocculation are related to the addition ratio and order of various materials in the fertilizer formula, and should be adjusted and explored according to the actual formula.

Conclusion and suggestion

Conclusion: From the above data analysis, it can be known that polyphenols can react with metal ions and the complexes are soluble in water. Therefore, the active metal ion salt and the polyphenol stock solution mixture can produce flocculent precipitates, and the complex metal ion salt such as EDTA-copper or other raw materials without metal ions will not react with the polyphenol stock solution. Therefore, in the production of polyphenol fertilizers, it is preferred to use metal ion salts with stable metal ions such as EDTA-copper or other raw materials that do not contain metal ions.

Conclusion Does the flocculent precipitates affect use? NO!

Why no?

1.Protein denaturation
2. Addition order influence
3 Different manufacturers, different raw material, and different ingredients

Suggestion 1

1. Conventional bulk raw materials such as amino acids and humic acid can be used with confidence
2. Large and medium element varieties needs classification
3. EDTA micro elements are the first choice

Suggestion 2

Physical mixing and heating reaction will show significantly different effects

Suggestion 3

The order of addition should be adjusted according to the raw materials

Suggestion 4

The 300-mesh filter can solve most problems, and the protein precipitation will not affect the use effect.

How to solve it?

Algae polyphenols fertilizer (Flushing)

This is popular organic fertilizer we use brown algae polyphenols as main raw material. Sold very well in China market.

Use brown algae polyphenols as raw material, rich in seaweed polyphenols, polysaccharides, mannitol, microelements. It has the functions of antibacterial, anti-resistance, anti-oxidation, and improving the nutrient absorption mechanism of crops.

Functions:
1. Living soil 2. take root and nourish root 3. promote growth 4.prevent disease

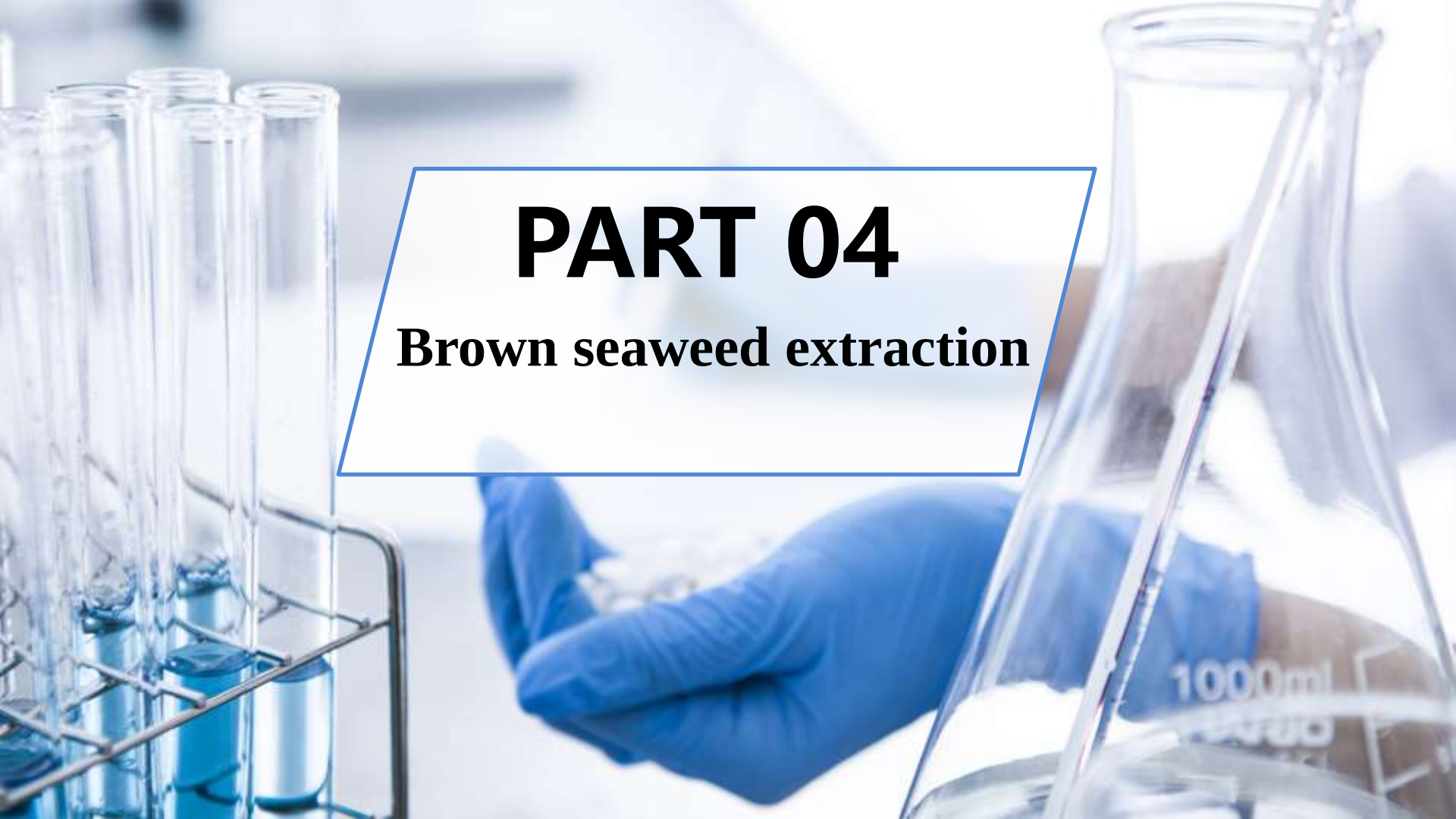
Tech Parameter	
Humic Acid	37.9g/L
N	69.4g/L
P_2O_5	84.4g/L
K_2O	56.7g/L
Macro elements ($N+P_2O_5+K_2O$)	210.5g/L
Micro elements (Cu+Fe+Zn+B+Mn)	60.6g/L
Water insoluble	1.1g/L
Ph	4.0-10.0

Package: 10L/drum

1. Root zone leaching: Dilute 500-1000 times with water and stir evenly, 5-10 kg per 666m^2.
2. Field and greenhouse flushing: generally use 5-10 kg per m^2, dilute 500-1000 times with water, slowly mix it with water for irrigation, and use water as appropriate depending on the soil moisture status.
3. Sprinkler irrigation/drip irrigation: can be mixed with other fertilizers and pesticides, 5-10 kg per m^2, diluted 500-1000 times with water

Package: 1. 1L/bottle*12 bottles/box
2. 250ml/bottle*40 bottles/box

How to use:
Please spray on the foliar surface at a dilution of 1000-1500 times in fine weather, with an interval of 7-15 days, and can be used throughout the growth period. The effect is better if it is used continuously for more than 2 times, and the dosage or frequency of use can be appropriately increased when the plant suffers from bad weather, plant or soil obstacles.



PART 04

Brown seaweed extraction

Brown seaweed extraction type

Type A Brown seaweed extraction flake: Alginic acid ≥ 8%, K2O ≥ 12%, moisture ≤ 10%, organic matter 40%, PH 8-11.

Type B Brown seaweed extraction flake: Alginic acid ≥ 18%, K2O ≥ 18%, moisture ≤ 10%, organic matter 40%, PH 8-11.

Type C Brown seaweed extraction powder: Alginic acid ≥ 8%, K2O ≥ 12%, moisture ≤ 10%, organic matter 40%, PH 8-11.

Type D Brown seaweed extraction powder: Alginic acid ≥ 18%, K2O ≥ 18%, moisture ≤ 10%, organic matter 40%, PH 8-11.

Soluble brown seaweed extraction

1. ASCOPHYLLUM NODOSUM as raw material.
2. Rich in alginic acid, seaweed polysaccharides, phenolic polymer compounds, mannitol, betaine, plant growth regulators and other nutrients.

Features:

1. Regulate immunity. 2. Anti-resistance and yield increasing. 3. Improve fruit quality. 4. Root improvement

Organic matters	48.9
Humic acid	36.1
Alginic acid	18.2
N	2.9
P_2O_5	0.5
K_2O	18.7
Macroelements ($(N+P_2O_5+K_2O)$)	22.1
PH	7.0-11.0

How to use:

Foliar spray: Dilute 1500-3000 times, stir and spray evenly.

Root irrigation or drip irrigation: diluted 800-1500 times, 400-1000 grams per 666 ㎡ , the specific usage can be adjusted appropriately according to the local soil fertility.

Package:

1. 200g/bag*50bags/carton
2. 500g/bag*20bags/carton
3. 10 kg/paper kraft bag


海藻精


海藻精


海藻精


海藻精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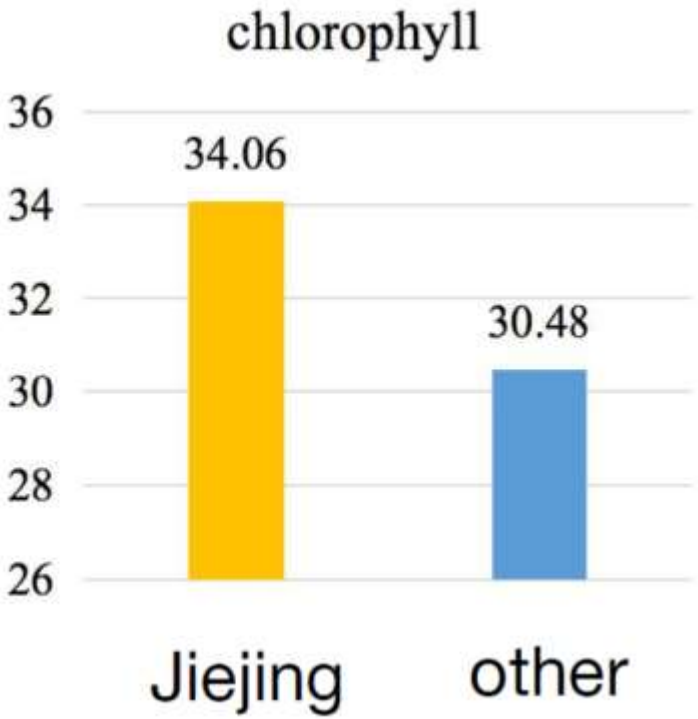
对照, 1, 3, 1, 2, 2,
2, 3, 1, 1, 2


叶绿素测定仪


chlorophyll
36
34
32
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28
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Jiejing
other