

*Make Human life through Natural vitality*

**K**♥**C**

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**K**♥**C** (주)한국바이오키미칼(KBC)  
KOREA BIO CHEMICAL CO., LTD



Improving life naturally since 1995, Korea Biochemical Co. Ltd.(KBC) is bringing sustainable harmony to the relationship between mankind and nature. KBC has pioneered the development of eco-friendly and biotechnical products to improve Korea agriculture. Our team of scientists, all of whom have extensive experience in the fields of microbiology and natural materials, carries out research and development projects in wide range of areas. Their work has resulted in a wide range of eco-friendly products to do with crop production, stock raising, environmental restoration, food and alternative energy sources. Of special significance are the advances we have made in microbial pesticides and probiotic products, which are essential for successful organic farming and ecologically friendly agriculture.



- Customer First
- Passion
- Originality
- Responsibility



- Value Management
- Communication Management
- Talent Management
- Focus Management



# Korea Bio Chemical co., Ltd. endeavour to improve our environment and human life.



## History

- May 1995 Korea Biochemical Co.,Ltd. was founded
- Jul 1996 Registered as Company producing Microbial products
- Jul 2000 KBC reformed corporate organization and established research institute
- Feb 2001 Authorized as Venture Industry by SMBA in Korea
- Mar 2002 KBC Research Institute was authorized by KOITA in Korea
- Apr 2002 KBC was designated as official test institute for the registration of pesticides by Ministry for Food, Agriculture, Forestry & Fisheries
- May 2002 KBC research institute move to Jinju Bio 21 center
- Sep 2003 KBC products were authorized as ISO9001:2000/KSA9001:2001
- Oct 2003 KBC was registered as producing and supplying source of microbial pesticides in SMBA
- Aug 2005 Mr.Han, Sang-Hoon inaugurated as representative of company
- Sep 2005 Inno-Biz certified and registered in Public Procurement Service
- Feb 2007 Quality Control of products was certified by Gyeongnam province
- Dec 2007 Source of Microbial pesticides 4 and their products 4 were registered
- Jan 2009 8kinds of products of eco-friendly organic farming materials were listed in official announcement published by RDA
- Nov 2009 2nd manufacturing factory was completed in Jinju
- Jun 2011 Built high-tech factory for fermented probiotics
- Feb 2012 Automatic filling line equipment
- May 2013 Natural plant protectants Registration No. 4
- 2014 National project in progress



# Natural plant protector and organic agricultural material



## ZENOTAN (Biotic fungicide and organic agricultural material)

Volume: 500g

### Main Features

- Zenotan composed of patented microorganisms native to Korea.
- A safe microbial fungicide that can be used in harvesting because it gives off no residue.
- Can be used for the whole growth period of the plant without any problem in expressing in its resistance against pathogens.
- No mammal and environmental toxicity and is especially safe for beneficial insects, such as honeybees.
- Listed in the official list of organic agricultural materials; can be used safely.

### Method of Use

Crop	Applicable Blight	Right Time for Use and Method	Amount to Use per 20 L of Water	Amount to Use per 1,000 m <sup>2</sup> (10 a)
Cucumber	Botrytis-induced diseases (Gray mold)	7-day interval foliage treatment from the beginning of occurrence	100g	Scatter evenly so that the drug liquid can be applied sufficiently
Strawberry		7-day interval foliage treatment before occurrence	100g	
Ginseng		5-day interval foliage treatment from the beginning of occurrence	100g	
Pumpkin		5-day interval foliage treatment from the beginning of occurrence	100g	
Lawn grass	Rhizoctonia blight (Large patch)	5-day interval soil drench treatment from the beginning of occurrence	100g	Drench sufficiently with 1 L/m <sup>2</sup>

1. Please spray to plants after diluting a fixed amount to be used with water.
2. After planting it (7-day interval), it's good to use it for prevention. Spray it in the interval of 3-5 days from the beginning of occurrence.

### Guaranteed ingredient

Active ingredient : → *Bacillus subtilis* KBC1010 1.0 x 10<sup>5</sup>cfu/g



# Natural plant protector and organic agricultural material



## CHUNGMAREUM (Biotic germicide and organic agricultural material)

Volume: 500g

### Main Features

- Chungmareum composed of patented microorganisms native to Korea.
- As microbial culture that concentrates beneficial microbial culture products and *Ralstonia solanaceum*-inhibiting microorganisms, the product can prevent plant diseases generated by *Ralstonia solanaceum*.
- A safe microbial germicide that can be used in harvesting because it gives off no residue.
- No mammal and environmental toxicity and is especially safe for beneficial insects, such as honeybees.
- Listed in the official list of organic agricultural materials; can be used safely.

### Method of Use

Crop	Applicable Blight	Right Time to Use	Amount to Use per 20 L of Water
Tomato Cherry tomato	Bacterial wilt	Every 7-day after planting Drench treatment	100g

1. Please spray to plants after diluting a fixed amount to be used with water.
2. After planting it (7-day interval), it's good to use it for prevention. Spray it in the interval of 3-5 days from the beginning of occurrence.

### Guaranteed ingredient

Active ingredient : *Bacillus amyloliquefaciens* KBC1121 1.0 x 10<sup>6</sup> cfu/g





# Natural plant protector and organic agricultural material



## TTANGGUEMI

(Biotic nematicide and organic agricultural material)

Volume: 3kg

### Main Features

- Ttanguemi made with patented microorganisms native to Korea through biotechnological method.
- Ttanguemi composed nematode-trapping or predacious fungus can prevent from penetrating Root-knot nematodes.
- A safe microbial nematicide that can be used in harvesting because it gives off no residue.
- Safe for beneficial insects, such as honeybees.

### Method of Use

Crop	Applicable Blight	Right Time to Use	Amount to Use
Watermelon	Root-knot nematode	Soil incorporation before planting	3 kg / 1,000 m <sup>2</sup> (10a)
Cucumber			
Tomato			

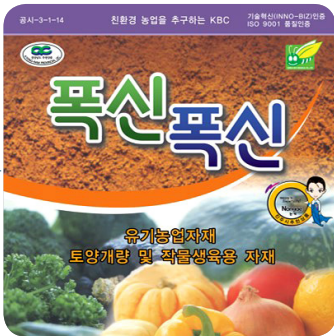
1. For full tillage mixing 15 ~ 20cm soil depth so deep into the soil and spread evenly.
2. Auth maintained for three to seven days after the humidity of 60-70% are mixed with the soil and covered with a plastic.

### Guaranteed ingredient

Active ingredient : *Monacrosporium thaumasium* KBC3017  $1.0 \times 10^4$  cfu/g



# Natural plant protector and organic agricultural material



## FOXINFOXIN (Organic agricultural material)

Volume: 5kg

### Main Features

- Product with well-cultured microorganisms from the forest soil of Korea, which is created through a special method.
- An environmental-friendly organic agricultural material completed using a patent technique that is selected as an outstanding technology by KIPA (Korea Invention Promotion Association) with verified efficacy and phytotoxicity.
- An organic agricultural material for soil conditioning and plant growth.

### Method of Use and Efficacy

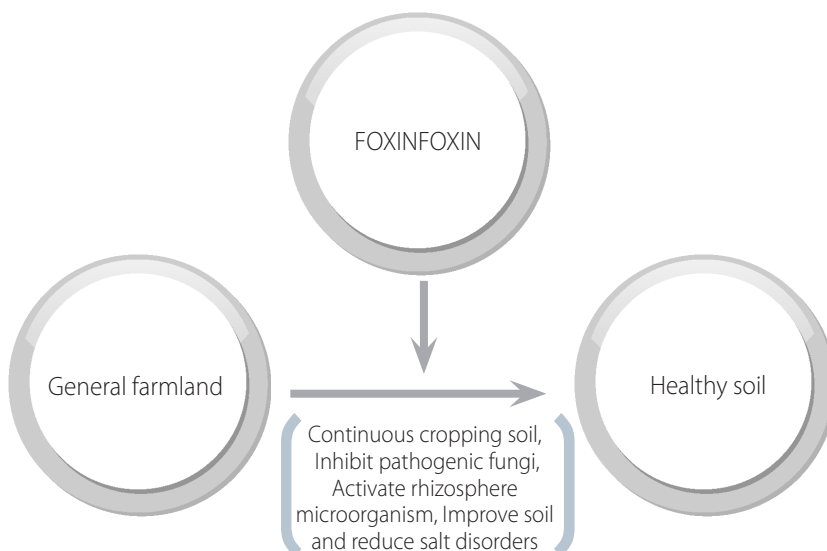
For basal fertilizing: 5 kg of this agent for 1000m<sup>2</sup>

For continuous cropping: 5 kg of this agent for 500m<sup>2</sup>

※ Add and subtract it according to the soil's physical and chemical properties.

### Guaranteed ingredient

Active ingredient : *Bacillus subtilis* 1.0 x 10<sup>6</sup> cfu/g







# Natural plant protector and organic agricultural material



## ANTI SALT (Organic agricultural material)

Volume: 4ℓ

### Main Features

- Antisalt, a halophilic and salt-tolerant microbial culture that exceptionally solves salt accumulation leading to replant failure.
- By activating rhizomicrobial population that is highly decreased when salt is accumulated to make organics or fertilizer ingredient low molecular or minerals (amino acid, nucleic acid, organic acid, vitamin, and various trace elements), the product promotes rootage and growth of crops.
- Because of the organic acid generated by the metabolism of rhizosphere microorganisms, the product solubilizes phosphoric acid insolubilized in soil quickly, and humic acid promotes soil aggregation, thereby improving physical and chemical properties in soil.

### Method of Use

Please drench the soil after diluting in 400ℓ~500ℓ (1ℓ/660m<sup>2</sup>).

Please drench soil 2-3 times on 5-day interval and add or subtract depending on the degree of damage.

### Guaranteed ingredient

Active ingredient : *Bacillus subtilis* 1.0 x 10<sup>6</sup> cfu/ml



# Natural plant protector and organic agricultural material



## **GARUSA** (Organic agricultural material)

Volume: 500mℓ

### Main Features

- Garusa made of plant-derived natural extracts.
- Garusa can prevent from occurring powdery mildew.

### Method of Use

Time of Use	Amount to Use	Method of Use
At occurrence	400-times diluted solution	Foliage spray for 3 times on 7-day interval

### Guaranteed ingredient

Active ingredient: Plant extract





## Natural plant protector and organic agricultural material



### YUKIONE Power Silicic Acid (Organic agricultural material)

Volume: 5kg

#### Main Features

- Yukione Power Silicic Acid is an organic agricultural material made of zeolite.
- With properties to absorb harmful ingredients and provide special ingredients, the product can enhance the nutrient-holding capacity of soil.
- This product can be used as a soil conditioner for sandy soil, ill-drained paddy soil, salty paddy soil, seedling pots for gardening, and nursery soil for rice.
- Yukione Power Silicic Acid helps plant grow as the ingredients of fertilizer are absorbed in zeolite that affects the soil significantly. It can also be used for conditioning because it maintains adequate soil moisture.

#### Method of Use

Process 5 kg of the product into and blend it with 1000m<sup>2</sup> of soil.

Estimate the amount to be used for soil blending depending on the growth condition of crops.

#### Guaranteed Ingredient

Guaranteed ingredient and content: 100% of zeolite



## Function Physiologically Active Product



### SAMCHOONGSA (Insecticidal natural material)

Volume: 500mℓ

#### Main Features

- Samchoongsa is a product developed by using natural plant extracts.
- With the effect of plant extracts in the product it has good to control pests such as aphids, mites and cabbage worm.
- It is safe for humans, livestock, and crops

#### Method of Use

Crop	All Crops
Time of use	Whole growth period
Dilution rate and amount of use (per 20ℓ of water)	500 times (40 mℓ) – 1000 times (20 mℓ)
Method of use	Foliage spray to apply the front and back sides of leaves

Active ingredient: Plant extract (*Sophora flavescens*)





# Function Physiologically Active Product



## SUNCHOONGE (Nematicidal microbial agent)

Volume: 1set (500mLx2)

### Main Features

- Sunchoonge made by biotechnological method so that native microorganisms in Korea can be used in environmental-friendly agriculture.
- Excellent effects on the prevention and inhibition of the secondary infections by trapping nematode and predation.
- Helps with the growth of crops with absorption of nutrient through healthy rhizogenesis.

### Method of Use

Time of Use	Amount to Use	Method to Use
to prevent Root-knot-nematode	500 times of dilution	Soil drench
to control Root-knot-nematode		

※The effect can be maximized in drench on 25-day interval during the whole growth period.



## Function Physiologically Active Product



### INKYEUNGE

(Bulb enlargement, uprooting, and rootage agent)

Volume: 1000mℓ

#### Main Features

- Composed of natural plant hormone, natural sulfur, amino acid compound, and physiologically active substance, this fertilizer enlarges the size of root fruits of garlic, onion, and bulb vegetables.
- This product reduces environment stresses, such as cold-weather damage and frosty injury that occur depending on the nutritive conditions of bulb vegetables as well as the physiological disorders to strengthen hibernation, improve disease endurance, and extend storage.
- The natural sulfur ingredient increases “allicin” content of bulb vegetables to make their own flavor and deeper taste.

#### Method of Use

500ℓ for foliage spray (500 times of dilution)

1000ℓ for soil drench ( 1,000 times of dilution)

Bulb formation and enlargement period after wintering more than 2-3 times

※ Capacity of the bottle cap: 40 mℓ

※ Use it after shaking well.





# Function Physiologically Active Product



## YUKIONE (Crop growth material)

Volume: 1000mℓ

### Main Features

- Induces healthy growth of crops with elements of potassium, iron, and calcium and minerals.
- Shows reduction effect of chemical fertilizer with organic essential nutrients.

### Method of Use

Time of Use	Method of Use
At occurrence of disorders at poor growth	500 times and 1,000 times drench



# Lawn Physiologically Active Product



## HIMAX (Lawn nutrient)

Volume: 2ℓ

### Main Features

- A general lawn nutritional supplement that contains nitrogen, phosphoric acid, potassium, microelements, and physiological activity-improving substances.
- Contains seaweed concentration extracts, high-purity active vitamin, 18 types of amino acids, and plant activity improvers.
- Improves rootage and activates growth.
- A high-purity fast-acting agent and used for foliage fertilization and drench.
- Promotes healthy growth of lawn and enhances disease endurance.

### Method of Use

Crop	Time of Use	Amount of Use	Amount to be Sprayed
Lawn	Overall growth period	1~2mℓ/m <sup>2</sup>	0.5ℓ/m <sup>2</sup>







# Lawn Physiologically Active Product



## JANDI BAKSA (Lawn Doctor) (High quality inorganic and organic composite fertilizer)

Volume: 20kg

### Main Features

- This is a high-quality organic fertilizer that contains a lot of thatch-decomposing microorganisms.
- Teeing ground and fairway mat will be significantly decreased.
- Because the product contains not only nitrogen, phosphoric acid, and potassium but also microelements, such as magnesium, boron, and iron, which can be insufficient in soil, it is effective to secure the balanced growth of plants by decreasing various physiological disorders.
- Because thatch is decomposed, drainage will become outstanding, and the occurrence of other lawn diseases, such as large patch, will be significantly decreased.
- The high-quality amino acid and humic acid contained in this product will activate soil microorganisms and maintain the biological balance of soil to improve the growth of crops.

### Method of Use

Place of Use	Amount of Use	Time of Use
Golf Course	40~50g/m <sup>2</sup>	When soil temperature rise over than 10°C for the growth of beneficial microbes (Spray 2-3 times a year)
Lawn Sport Turf		
Lawn Garden		
Lawn Park		

### Guaranteed ingredient

*Bacillus subtilis* 1.0 × 10<sup>6</sup> cfu/g

Ingredient	Content	Ingredient	Content
Organic	50%	Si	4%
Humic acid/Amino acid	10%	B	0.05%
N	4.5%	Mn	0.1%
P	6%	Fe	0.2%
K	6%	Ze	0.005%
Mg	1%	Mo	0.0015%
Others	Rest		



# Lawn Physiologically Active Product



## WANGGEUNI (Lawn nutrient)

Volume: 2ℓ

### Main Features

- A general nutrient containing a good balance of nutrients necessary for lawn.
- This product can be absorbed into lawn quickly because it contains high concentration amino acid, humic acid, physiologically active substances, etc.
- The product has excellent effect on early recovery from poor growth due to sudden wilting and damaged tissue.
- The product guarantees no concern for soil contamination because it activates microorganisms to decompose organic matters and solubilize insolubilized fertilizers.

### Method of Use

Crop	Time of Use	Amount of Use	Amount to be Sprayed
Lawn	Overall growth period	1~2mℓ/㎡	0.5ℓ/㎡





# Lawn Physiologically Active Product



## YOUKIONEICAL

(High concentration liquid calcium for Lawn)

Volume: 500mℓ

### Main Features

- It is a pyroligneous liquor with chelated calcium, boron, amino acid, and physiologically active substance.
- A newly conceptualized liquid calcium pyroligneous liquor that improves the absorption and movement of nutrients by using a special formulation.
- Because ionized organic acid is included, the product has maximum effect even with a small amount and makes healthy lawn with the improvement of endurance to disease and storage.
- Even in sandy soil, such as USGA green that lacks active calcium, this product helps plants create root zone.

### Method of Use

Crop	Time of Use	Amount of Use	Amount to be Sprayed
Lawn	1-2 times a month during growth period	1~2mℓ/m <sup>2</sup>	0.5ℓ/m <sup>2</sup>



# Lawn Physiologically Active Product



## BBURIKIFEUN

(Uprooting and hypertrophy-specialized agent)

Volume: 1000mℓ

### Main Features

- It contains physiologically active agents for Lawn, which are extracted from brown algae seaweed, such as North Atlantic sogasum, ascophyllum, nodosum, and laminaria.
- With the interactions of environment-friendly biological compounds, high-concentration amino acid that is essential to plants and natural chelated mineral elements, this serves as an uprooting and transplanting agent that resolves all kinds of environmental stresses to activate root cells.
- The product improves the nutrient-absorbing capacity of soil in case of poor growth, including succulent growth or root hypotrophy so that healthful crops can be harvested.

### Method of Use

Crop	Time of Use	Amount of Use	Amount to be sprayed
Lawn	Overall growth period	1~2mℓ/m <sup>2</sup>	0.5ℓ/m <sup>2</sup>





# Lawn Physiologically Active Product



## DANGCHANE (Containing high concentration liquid Silicic acid)

Volume: 500mℓ

### Main Features

- This is a liquid silicic acid product that helps growth of gramineae such as lawn and crops.
- Because liquid silicic acid relieves nitrogen excess damage, the product not only improves the tolerance of creeping but also increases resistance to blight by promoting its own generation of defensive substance, such as phytotoxin.
- The product helps create chlorophyll within the lawn to activate photosynthesis, thereby promoting crop metabolism.
- The product improves the quality of crops because the nutrients that are essential for hard grass and crops are added.

### Method of Use

Crop	Time of Use	Amount of Use	Amount to be sprayed
Lawn	Overall growth period	1~2mℓ/m <sup>2</sup>	0.5ℓ/m <sup>2</sup>



# Lawn Physiologically Active Product



## ENZOBAK (Cold injury restorative agent)

Volume: 500mℓ

### Main Features

- It is a low-nitrogen nutrient that contains various nutrients necessary for lawn growth.
- It induces the healthy growth of lawn because it contains minerals, such as potassium, iron, etc.
- It has reducing effect of chemical fertilizer because of its organic nutrient that is quickly absorbed in the body of lawn.
- It has excellent effects on the improvement of soil environment and lawn quality by activating soil microorganisms.

### Method of Use

Crop	Time of Use	Amount of Use	Amount to be sprayed
Lawn	Overall growth period	1~2mℓ/m <sup>2</sup>	0.5ℓ/m <sup>2</sup>





# Lawn Physiologically Active Product



## SUNBACTA GOLD

(Solution material for suppressing replant failure)

Volume: 500mℓ

### Main Features

- Sunbacta gold is a soil microbial composite agent manufactured by high-tech culture technique of rhizosphere and seven antagonistic microorganisms purely extracted separately from the forest soil in Korea.
- Efficacy → solves salt accumulation and continuous cropping hazard, increases absorption of fertilizer, prevents various harmful gases, promotes the underground part of plant, solves fertilizer concentration hazard, adjusts soil acidity, and inhibits soil damage by harmful insects.

### Method of Use

Crop	Time of Use	Amount of Use	Amount to be sprayed
Lawn	Overall growth period	0.5~1mℓ/m <sup>2</sup>	1ℓ/m <sup>2</sup>

### Guaranteed ingredients

- *Bacillus subtilis*

### Additional ingredients

- *Enterobacter agglomerans*
- *Cellulomonas fimi*
- *Bacillus megaterium*
- *Staphylococcus xylosus*
- *Pseudomonas putida*
- *Pseudomonas fluorescens*



## DELTA FORCE YUCCA (Animal husbandry probiotics)

Volume: 5kg

### Main Features

- Digestion and utilization will be increased.
- Disease occurrence will be decreased.
- Generation of metabolites is enhanced.
- It contains natural mineral, water-soluble potassium, and yucca.
- It is a microbial composite agent.
- It offers strong resistance to gastric acid.
- It helps in the subsidiary functions of water treatment microbial agents and causes environmental improvement.

### Method of Use

All types of livestock 0.1%-0.05% (feed 500g- 1kg per ton)

### Guaranteed Ingredient

Name of Ingredient	Amount of Ingredient
<i>Bacillus coagulans</i>	$1.0 \times 10^6$ cfu/g
<i>Yeast</i>	$3.0 \times 10^7$ cfu/g

Strain: *Saccharomyces* sp. and 5 other species

(beneficial fungus, beneficial microorganism, 2 species of *Lactobacillus acidophilus*, and *Bacillus subtilis*)

