BIOPLAN CO., LTD.

For Your Breakthrough in Farming Guidance and Agricultural Development

Multi-Functional Biostimulants
Eco-friendly materials

CONTENTS

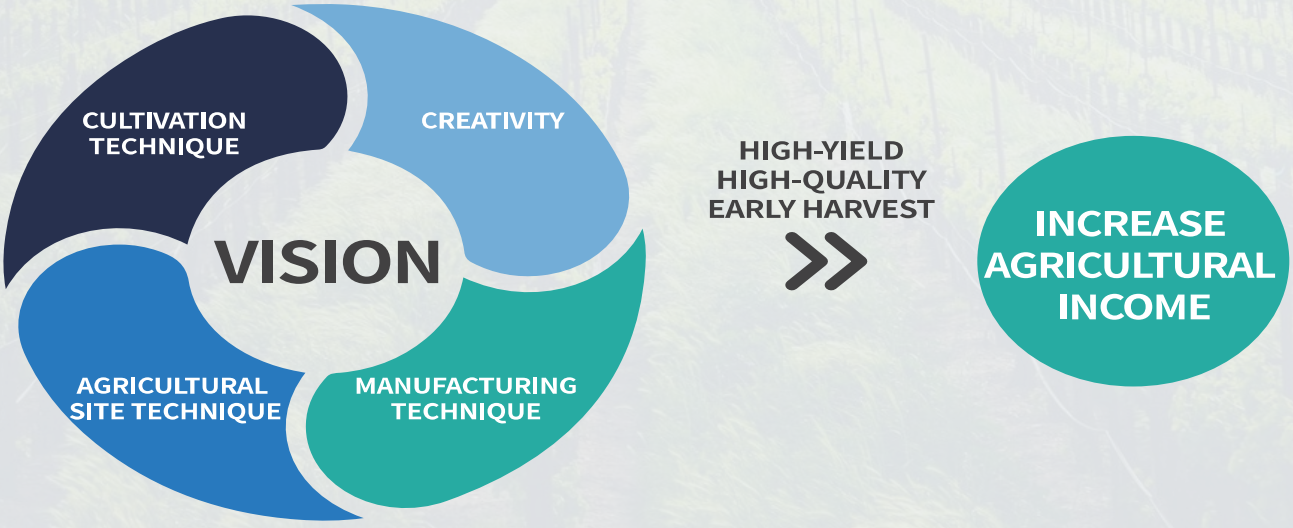
Company Introduction

BioPlan Co., Ltd.,
The Hub of Agricultural Technology

Handling both agricultural and manufacturing technology is our remarkable strength in agricultural industry. BioPlan Co., Ltd. has been manufacturing eco-friendly biostimulants to activate plant growth and development for the agricultural market against damages and anxiety from abnormal climate.

Our long practical experience and career in the field has drawn us to specialize in producing high quality of biostimulants and plant nutrition supplements especially in prevention of frustrated climate changes such as cold, frost, typhoons, wind, rain and dry damage. We are dedicated to examine and consult in order to be the best master solution of growth of crops in agricultural industry.

In particular, our main technology which increase in growth of flower and fertilization rate has been praised in Korea. We are also highly pleasure that our sustainable technology and multi-functional biostimulants have been gratefully assisting each dynamical difference of weathers around the world.



History

2019

- Registered as an affiliated research institute by Korea Industrial Technology Association
- Acquired ISO 9001, 14001
- Signed a contract with the National Agricultural Cooperative Federation of Korea
- Registered “Turgor Gold” as Environmental Friendly Agricultural & Organic Material Product

2018

- Expanded in “Acttosine Granules” facility
- Expanded in warehouse

2016

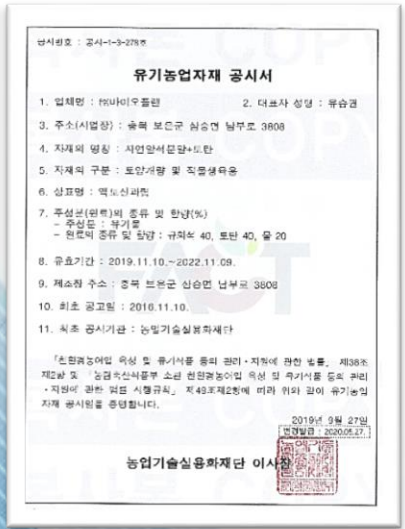
- Import and export trade agreement with Heilongjiang in China
- Registered “Acttosine Granules” as Environmental Friendly Agricultural & Organic Material Product
- Expanded in warehouse

2015

- Found BioPlan Co., Ltd. new headquarters
- Registered “Acttosine” and other 14 trademarks registration

2013

- Established BioPlan Corporation
- Registered “Acttosine Gold” as Environmental Friendly Agricultural & Organic Material Product



Company Technology

Product and R&D Overview

Organic Materials and resources »

- Authorized products by FACT
- Use for developing soil amendment and crop growth
- Utilization as pest controller

* FACT : Foundation of Agri. Tech. Commercialization & Transfer

Function »

- Metabolic(photosynthesis)
- Energy metabolic(respiration)
- Adjustment for transpiration
- Reduction of agricultural managing cost

Effect »

- Strengthen in soil and roots
- Rises the amount of sunshine by increasing photosynthesis
- Enhances in yields & Early harvest
- Improves in crop quality

Technical Material Overview

Agricultural innovation using plant physiology and sunshine

- Enhance soil drainage and binding capacity
- Stimulate disease resistance due to rooting
- Increase nutrient absorption of roots
- Rise photosynthesis with amount of sunshine
- Reduce damage of chlorophyll in pesticides and multiply effects of pesticides
- Increase acceleration and strengthen in flowering
- Rise fertilization rate and produce increased number of proper fruit
- Adjusting transpiration for the nutrition of fruits
- Utilize early harvest technology by adjusting the maturation rate

Utility of Technology

Improved storage based on enhanced sunshine is the solution for shortage of farmable days

The world has been encountering severe climate change for ages and the weather get polarized seriously and rapidly due to global warming. High temperature areas struggle with physiological damage such as excess heat temperature and moisture injury and drought. In the other side, lower temperature areas face shortage of the number of farmable days.

BioPlan Co., Ltd. innovative technology is proficient in increasing photosynthesis through raised amount of sunshine and adjusting reserve nutrient against damage of climate changes. Our technology professionally deal with adjusting temperature during soil management in high temperature areas.

Enhances internal temperature of plants appropriately and function of nutrient absorption

BioPlan Co., Ltd. technology improve the nutrient absorption in soil and temperature of plant internally. This high technology supports to accelerate growth and development and control farmable days against extreme climate changes.

Utility of Technology

Multi-functional one shot solution for rooting, soil amendment and nutrient absorption

Low temperature climate areas : Continuous freezing and drought, excess moisture injury are severe problems in low temperature climate areas agricultural industry. BioPlan Co., Ltd. innovative technology aid to rise rooting power up and nutrient absorption capacity based on enhanced quality of soil state. These improvement with our technology could prevent significant damage in winter. We highly expect the potential low temperature climate areas market like Russia.

Temperate climate areas : Clearly different seasons in annual areas like four season, since our products extend their function to soil improvement and rooting compounds, our goods and services decrease cost of capital goods and make superior in price competitiveness by enhancing soil drainage and nutrient holding capacity for each crop without any other fertilizers for roots and soil.

High temperature climate areas : In high temperature climate areas, increased soil drainage and nutrient holding capacity reduces the percentage of physiological disorder of plants during night. We predict that our products rise disease resistance and quality of crops by protecting and raising thickness of root.

MOU(The largest rice federation in Korea)

Memorandum Of Understanding between Korea Rice Pro-Farmer Federation and BioPlan Co., Ltd. (24 March 2020)

Agreement for supporting advanced agricultural methods and superb agricultural materials and resource.

According to Korea agricultural Daily Newspaper, Lee Eun-man, president of Korea Rice Pro-Farmer Federation and Yoo Seung-gwon C.E.O of BioPlan Co., Ltd. signed MOU in Korea Rice Pro-Farmer Federation Head quarter office which is located in Chungcheongnam-do Cheonan-si for agricultural development.

Through this agreement, both Korea Rice Pro-Farmer Federation, and BioPlan will cooperate to increase value of rice and to arrange rice industry development.

Korea Rice Pro-Farmer Federation will put their devotion on high quality of rice production and BioPlan will support agricultural industry to expand their business by producing superb products and training advanced agricultural methods and strategies. In addition, furnishing information and connecting business are another supports from BioPlan.

Lee Eun-man, president of Korea Rice Pro-Farmer Federation said “I hope that this wonderful agreement is another efficient opportunity for farmers to be provided qualified superb agricultural materials and resources and advanced agricultural methods, strategies at the same time.”

BioPlan has been demonstrating their expertise in Food crops industry by supplying advanced technology with products called 25day and Acttosine. Moreover, BioPlan is passionate to hold seminars for farmers to train and deliver advanced techniques with latest information.

Yoo Seung-gwon C.E.O of BioPlan Co., Ltd. said “Through this MOU, we will be truly committed to raise awareness of value of rice and to find various methods in order to improve rice and agricultural industry.

Specialized Product

1. Acttosine
2. Acttosine Granules

ACTTOSINE

KOREA HS CODE : 3105-20-0000
SORT : BIOSTIMULANTS
TYPE : LIQUID
PACKAGE : 3L

Product Feature and Effect

- Decomposes a high molecular substance which is plant photosynthesis
- Aids catabolism by producing and reproducing respiratory cell and mitochondria
- Since increasing catabolism improves function of internal nutrition storage, ability of self-fertilization is outstood by increasing somatic cell, ovary, pistil and pollen

Formula(%)

N	P2O5	K2O
5	2	3

How physicochemical feature apply to tasty rice?

Decrease nitrogen content in plant by activate dissimilation

Ex) The rate of average contained amylose for tasty rice : 17% ~ 19%

- In low amylose contained rice, rice is moist, sticky and good covering polish.
- Factors of low amylose contained are reducing nitrogen fertilizing and shorten ripening period.

Ex) The rate of average contained protein for tasty rice : 6.5% ~ 7.5%

- In low protein contained rice, rice is good chewy texture when it gets cold and keep proper condition after passing long hours.
- Factors of high protein contained are high temperature in ripening stage, lack of sunlight, low temperature and excessive nitrogen fertilizing.

ACTTOSINE

KOREA HS CODE : 3105-20-0000
SORT : BIOSTIMULANTS
TYPE : LIQUID
PACKAGE : 3L

Function of the Glycolytic Enzyme matters, Acttosine

- Reduction in rate of lodging
- Enhancement in number of grains at young panicle formation period
- Higher possibility to produce self-pollination plants on heading-flowering period
- Increase quantity in the number of grains per each crop grains and early matured on ripening period

CROPS	APPLICATION SEASON	METHOD (FOLIAR APPLICATION)	EFFECT
Food crop (rice, barley, wheat)	30 days before heading stage	1000 : 1	To rise quantity and to reduce lodging
	Heading stage		To decrease number of unfertilized rice and to increase fertilization rate
Bare ground crop (pepper, beans, sesame)	Early and middle stage of flowering season		To change stem and leaf's nutrition to root 'floral initiation effect'
Fruit growing crop (apple, pear, peach, persimmon, plum, grape etc)	End of March ~ Beginning of April (Cotton fertilization)		To stimulate growth of sepal which protect flower bud and to prevent cold damage and help recovery
	Right before flowering season Center flower flowering season		To produce increased number of proper fruit, and to accelerate pollen production due to increase in fertilization rate
Green house crop (tomato, strawberry, watermelon, cucumber, leafy vegetable)	10 days before flowering season		To gain big and proper shape of fruit through certain fertilization and to increase quantity of harvest
Special purpose crop (ginseng, cinnamon-vine, omija, raspberry etc)	Before flowering season		To acceleration in floral initiation and to increase fertilization rate

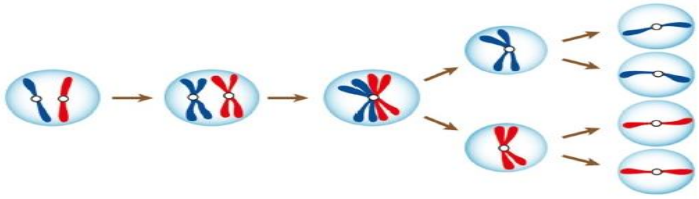
Effectiveness of Acttosine

1 Increases number of grains by using acttosine during panicle formation

Our products also contain function to increase percentage of lodging resistance through consuming nitrogen metabolism and amount of grains per each crop with surplus nutrient.

Reproduction meiosis of Crops

BioPlan Co., Ltd. products increases the number of grains per each crop such as rice, barley and wheat when crops implement meiosis during panicle formation. As the result, the most appropriated time for spreading the products is around 25 days advance from ear emergence → rate of effective tillering increase.



2 Number of grains per panicle goes up

Treated
191, 179 grains

Untreated
122, 112 grains

3 Number of soybean pods per plant goes up

Effectiveness of Acttosine

Glycolysis action test through chlorophyll measurement during ripening period

Before

After

(30.6 → 28.1 : Glycolysis action-dissimilation)

Untreated

Treated

(Rice quality comparison)

Double cropping Technology has spread to Chiness agricultural industry

(KBS news 9, 19 May 2016)

Export contract between Chungbuk & Heilongjiang region enterprise

Contract ceremony with representative director of Bochung country cooperatives

Effectiveness of Acttosine

Comparison

Effect

4 Acttosine aid to rise pollination rate in ear emergence flowering period

→ Increased in amount of grains per each crop
→ Decreased in amount of empty grain

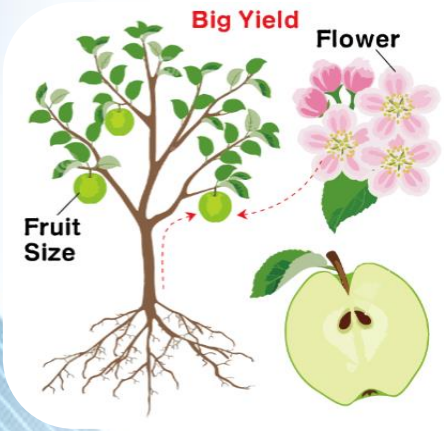
Fertilizing Acttosine in initial ear emergence period strengthen flowers with accumulated heat energy due to catabolism through glycolytic enzyme.

Flowers of rice bloom only for 2 hours and finish their pollination rapidly. Since flowers of rice process self-pollination in advance, cross-pollination rarely occurs. As flowers of rice progress self-pollination without flowers open, the percentage of cross-pollination possibility is only 1%.

Cleistogamic experiment of rice

"Verified the fact that yield significantly increased at the case of fertilizing second times, Acttosine have efficiencies for self-pollination enhancement during panicle formation and flowering, pollination period" (2015, Seoul Nat' Univ. Exp.)

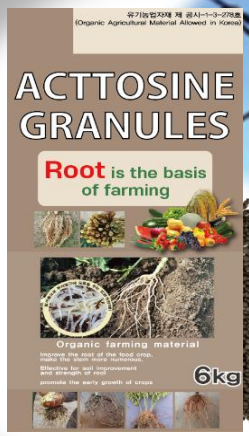
Effectiveness of Acttosine



Increased yield

ACTTOSINE GRANULES

KOREA HS CODE : 3105-20-0000
SORT : BIOSTIMULANTS
TYPE : GRANULES
PACKAGE : 6kg



Product Feature and Effect

- Increases and improves soil nutrient holding capacity and water-drainage ability since humic acid prospers ratio soil porosity.
- Improves roots strength and disease resistance since wollastonite provides nutrition properly and evenly.
- Increases growth by improving ability of nutrition absorption with coated floral initiation substance.
- Increases growth fast and fertile and have effectiveness in both effect of soil amendment and strength of production root.

Formula(%)

Humic acid	Wollastonite	Liquid
40%	40%	20%

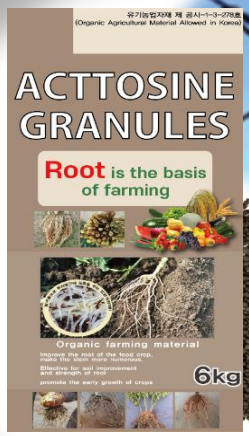
Comparison

Cut part of harvested rice

Comparison of the thickness

ACTTOSINE GRANULES

KOREA HS CODE : 3105-20-0000
SORT : BIOSTIMULANTS
TYPE : GRANULES
PACKAGE : 6kg



CROPS	HOW TO USE	
	APPLICATION SEASON	APPLICATION AREA
Food crop (rice, barley, wheat)	Basal fertilizer	3,305m^2~ 3,966m^2
Bare ground crop (pepper, beans, sesame)	Basal fertilizer	991m^2~ 1,322m^2
Fruit growing crop (apple, pear, peach, persimmon, plum, grape etc)	Dormant grafting	495m^2~ 661m^2
Green house crop (tomato, strawberry, watermelon, cucumber, leafy vegetable)	Basal fertilizer	661m^2~ 991m^2
Special purpose crop (ginseng, cinnamon-vine, omija, raspberry)	Basal fertilizer	661m^2~ 991m^2
Bulb and tubers (onion, garlic, potato)	Basal fertilizer	991m^2~ 1322m^2
Bulb and tubers (sweet potato)	Basal fertilizer	2314m^2~ 2644m^2

Comparison

Effectiveness of Acttosine Granules



Tomato

Beans

Garlic


Cucumber

Watermelon

Welsh onion

Radish


22 Branches ▶ 30 Branches
Thickness 2.2mm ▶ 5.9mm


Onion

Barley


Rice


Apple

Pear

Research & Development

Product	Biostimulants (granules)
	**Acttosine Granules** ✓Amends soil ✓Strengthen in production roots ✓Increases nutrient absorption of roots 

Product	Biostimulants (liquid) (1ha →1.5L)
	**Acttosine** ✓Increases acceleration and strengthen in flowering ✓Rises fertilization rate and fruit formation **Respiratory action** 
	**Greentan** ✓Improves photosynthesis ✓Strengthens growth of plants **Photosynthesis** 
	**Turgor** ✓Enlarges size of fruits ✓Enhances taste and scent, quality ✓Stimulates early harvest **Transpiration** 

BIOPLAN CO., LTD.

Office

- ADR : 3808, Nambu-ro, Samseung-myeon, Boeun-gun, Chungcheongbuk-do, Korea 28923
- TEL : +82-43-543-3873 FAX : +82-43-543-3876
- www.Bioplan.kr Email : globalyting88@gmail.com
- Mobile +82-10-8335-1134
- Overseas Business : Manager Sungyeol Yu

ysr2573 +82 10 8335-1134

2020 - 2021