

Creation in Value of Agricultural Products with Sulfur Silicate

Tae Won Enterprise



1. Development Overview of Sulfur Silicate

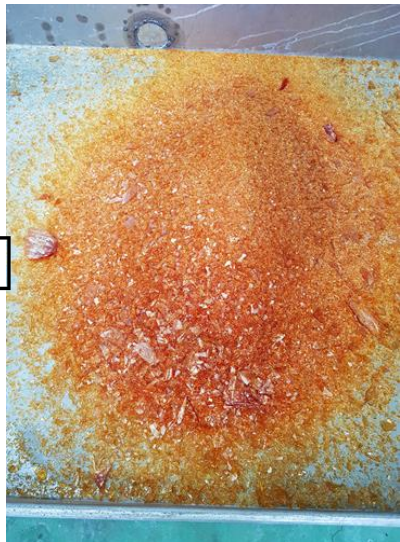
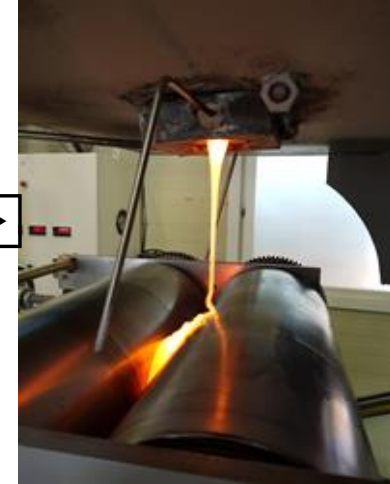
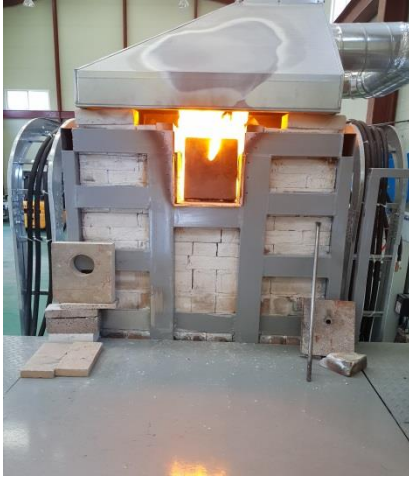
- ▶ World's first *organic and inorganic synthesis* at high temperature (1600°C~1700°C) --- Patented technology
- ▶ Me_2sSiO_3



▶ Purpose of Development

- 1). Development of environmentally friendly agricultural materials - pesticide replacement - for agricultural products (Reduction in pesticide use by more than 60%)
- 2). Development of high-performance farming materials for the promotion of national health
- 3). Create value of agricultural products, increase in production and farming household income
- 4). Reinforce national competitiveness with public health and agricultural development
- 5). Contribute to the National Health Care finance with reduced health care costs

2. Synthesis Process of Sulfur Silicate (1600 °C)



091.mp4

3. Material Properties of Sulfur

- ▶ Sulfur does not dissolve in water, and because of its large particles, the absorption rate of the plant is minimal.
- ▶ However, the **soluble sulfur silicate** developed and produced by Kosifarms **can absorb, transfer, and accumulate** the **sulfur's good efficacy to the plant 100%**.

Sulfur(S)

- ▶ Because sulfur is an important component of protein, it has the same function as nitrogen in that it is a component of the protoplasm and the botanical component.
- ▶ Because of this, the deficiency symptoms of sulfur are similar to the deficiency of nitrogen, which inhibits reproduction, and when the leaves turn pale or severe, yellowish flowers appear, it is difficult to distinguish from nitrogen deficiency.
- ▶ Sulfur is **an essential element** of the crop, and the elemental content rate of the plant is in order of **nitrogen>phosphorus>sulfur>potassium/kalium>magnesium**, and sulfur is the major constituent of the biological protein along with the nitrogen.

Sulfur(硫黃, Sulfer)

- ▶ Sulfur is an essential element for living things.
- ▶ Several biological molecules including methionine, a type of amino acid, and cysteine, contain sulfur.
- ▶ It is the eighth-largest percentage of 14 species including oxygen, hydrogen, nitrogen, carbon, and *sodium sulfide*, which make up the human body, and component of protein.

Animal Sulfur

Deer antlers,
gall bladder of a
bear/bear gall,
moschus(**사향**)
etc.

Vegetable Sulfur

Wild ginseng,
ginseng,
mugwort,
acanthopanax,
garlic,
onion, hooker
chives etc.

Mineral Sulfur

Matches,
gunpowder,
*grilled mineral-
fed duck/sulfur
duck* etc.

Actions and Effects of Sulfur

Ease pain and inflammation → Reduces inflammation and relieves pain

Promote growth → Growing and strengthening bones and filling the bone marrow

Transportation → Strong properties to transport materials penetrate deep into cell membranes

Peristalsis → Anti-aging and constipation recovery effect by participating in intestinal peristalsis

Binding → Collagen cross-linking effect in connective tissue

Cell regeneration → Reduces scarring by regenerating cells quickly

Antioxidation → Releases fused blood and promotes blood circulation

Sterilization and Elevation → Bactericidal effect against germ, viruses, bacteria and fungi

Immunity Enhancing Action → The effects of enhancing immunity such as antibacterial and anticancer drugs

4. Expected Effects of Using Sulfur Silicate

- 1) Production of sulfur-containing high functional agricultural products,
- 2) Improve the value of agricultural products,
- 3) Increase in crop and sugar content,
- 4) Increase in farm income,
- 5) Provide safe food,
- 6) Reduction in pesticide use by more than 60%,
- 7) Promote national health,
- 8) National fiscal contribution due to reduced medical costs,
- 9) Reconsider agricultural competitiveness,
- 10) Contribute to national agricultural development etc.

4-1. Effects

1) Production of high functional agricultural products with high sulfur content

- Produce safe, high-performance agricultural products that can cure diseases for consumers (Anti-cancer effect, diabetes effect, increase immunity, inflammation removal, regenerate cell, sterilization, detoxification of pollution pollutants such as heavy metal pesticides, obesity control, energy enhancement, acne, seborrhea dermatitis, parasites, fatigue, stress, depression, Parkinson's disease, arteriosclerosis, osteoarthritis etc.)

MIT Tech Stephanie Seneff (Researcher),

Contributed to the Weston A. Price Foundation as follows:

"Sulfur is a **mineral of healing ingredients**, and sulfur deficiency usually leads to pain and inflammation associated with various muscle and skeletal disorders.

Sulfur is present in insulin, which is **a vital hormone that promotes the use of sugar** from carbohydrates to produce fuel through muscle and fat cells.

2) Reduction of pesticide use

- White powder bottle fungal disease effect, ulcer disease, gardening, anti-disease, sterilization, etc.

- No rooting agents, no electrodeposition agent, no hardness enhancers

4-2. Effects

3) User's safety and convenience

- User is safe by Ionization of Sulfur(S^-) remove toxicity
ORP value, -600(reducing agent). pH, 11.5
- No tangle and separation when using airline and drone sprinkling
- There is no nozzle clogging and wear out so it's convenient and economical
- When foliar spray to plant, it's weak so there is no remain. It can be used at all crops
- Decrease of labor costs by reduction of labor work



5. Comparison with Other Products

Distribution	Kosi Farms product	Other products	Remarks
Chief ingredient	Sulfur + Silicic acid	Sulfur + Microelements, other Sulfur + Amino acid, other Sulfur + Wood vinegar, photosynthetic bacteria	
Manufacturing method	Synthesis by high temperature heat treatment	Mix of not triturationed sulfur	Clear difference between synthesis and mixing
Absorptivity	100%	Low absorptivity	
Remains, side effect	None	Exist	Excessive use of sulfur → Soil acidification
Separation phenomenon	None	Exist	
Airline sprinkling	Possible	Impossible	Clogged nozzle, inconvenient
Effectiveness	Possible to control pests such as powder mildew, ulcerative disease, black speck, fungal diseases, etc.	Powder mildew	Continually checking

6-1. Application Cases of Sulfur Silicate

- 1) Kosi sulfur silicate products have been found to have a significant effect on garlic and potatoes even with foliar fertilization. (Seosan)
- 2) There were calls from Asan and Daegu saying Kosifarms products is good. (They want to order additional product....Seongju melon farm)
- 3) As it is used for citrus in Jeju Island, it is effective for fungal and sunspot disease. Before Jeju used 12 to 14 times of Daisen M-45, but now due to PLS system Daisen M-45 is used 4 to 5 times. Jeju says Kosifarms product seems to be good as a substitute product..... (Seogwipo)
- 4) Flower became fresher and color became thicken when foliage was applied to the flower. (Umseong)
- 5) The ginseng was very good, especially the taste of the vegetables was crispy and the sugar content of the fruit went up 2 brix. (Gyeonggi Yeoncheon)

6-2. Application Cases of Sulfur Silicate

This is the test result of the new sulfur silicate product.

- ▶ **Sulfur content was found to be 0.8% in dried pepper** as shown in the application of Santa(sulfur silicate) products to red pepper.
- ▶ When applied as a Santa products only, it showed excellent effects in almost all diseases (powder mildew etc.)
- ▶ Unlike conventional sulfur products, **it is completely ionized, so there is almost no weakness or scratches**, and **it is harmless even if administered directly to animals**.
- ▶ Feed additives is planned to be developed in the future. (Including water purification.)
- ▶ You can enjoy more than three benefits at a time with sulfur-containing rice, potatoes, onions, cabbages, radishes, apples, pears, and grapes and so on.
- ▶ Addition of ionized sulfur to the Kosi solution, the effect of Kosi and the effect of sulfur, and also the sulfur-containing agricultural products ----- Increasing farm income, reducing production costs, reducing pesticide use, safety of user consumer, promoting public health, preventing and improving environmental pollution and so on.

6-3. Application Cases of Sulfur Silicate

Meeting Results with Mr. Kim

- Sulfur silicate practice operation of Peppers, potatoes (Asan)

Peppers : Succulent growth is suppressed as shown in the picture above,
and it grew in clusters like grapes.

The second pick harvest resulted in more than the 5th pick last year

Sulfur content is very high

- To be grafted to rice, potatoes, onions and so on in the near future

Potatoes : Jeongseon, Kangwon Province (*The Chairman of the village foreman's council*)

- Harvested double amount of last year's output
- detected sulfur, promised active promotion

Meeting Results with Mr. Baek

Chinese cabbage : Chinese cabbage became firm and tender.

Proposed to establish and jointly carry out sales strategies (such as YouTube) like Modusak product.

Meeting Results with Mr. Song

Pepper : Regarding the TSWV, we mixed vikiller product and sulfer silicate product to handle it, and satisfied with the results. (Jecheon)

Increase the competitiveness of agriculture by producing functional agricultural products and ensure income of farming households through domestic consumption (high price, differentiation) and exports (Japan, China, etc.)


Future plan - Apply to all crops such as tomatoes, strawberries, Korean melons, melons, apples, pears,

cucumbers, rice, potatoes, onions, Chinese cabbages, green onions and so on.

(In particular, the bulbs on paddy rice in Korea, and fruit trees)


- ▶ It's ion sulfur (natural, non-drug, detected sulfur-absorbent) + Kosi-Liquid(Ion).

7. Proof of Results of Sulfur Silicate Use (Pepper)

발급번호: 제 19-FOOD-1-00715 호 분석 성적서			
① 의 뢰 인	성 명	김선길	사업자등록번호
	주 소	32027 충청남도 서산시 고북면 교북1로 311-22	
② 의 뢰 내 용	대상 품종명	진고추	
	시 험 계 요	1항목:S(황)	
	용 도	확인(참고용)	
③ 분석(시험) 성적			
	성 분 명	분석결과(단위)	성 분 명
	S(황)	88.42 mg/100g 이하 이백	분석결과(단위)
④ 비 고			
「농업기술실용화재단 분석시험 의뢰 및 처리규정」 제4조의 규정에 의하여 2019년 10월 15일 자료 의뢰한 시료에 대한 분석(시험) 성적입니다.			
이 성적은 신청인이 제출한 시료를 분석한 것으로 관련시험 이외의 선전 소송 등 증거자료로 사용하지 수 없습니다.		2019년 10월 17일	
농업기술실용화재단 이사			



Results of Sulfur Silicate Use (King Oyster Mushroom)

발급번호 19-F00D-1-01168				분석결과통지서			
① 의뢰인	성명	김동선	사업자등록번호				
	주소	16503 경기도 수원시 영통구 용천동 71-1 아주아파트 나동 103					
② 의뢰내용	대상물품명	새송이버섯					
	접수번호	분석의뢰-U-19-02649	접수년월일	2019.12.23			
	종도	기능성 제품생산					
③ 분석결과							
	항목	성격(단위)		항목	성격(단위)		
	6(총)	2.45 mg/100g 이하 여백					
④ 비고							
「농업기술실용화재단 분석시험 의뢰 및 처리규정」 제4조의 규정에 의하여 2019년 12월 23일자로 의뢰한 시료에 대한 분석(시험)성적입니다. 이 성적은 신청인이 제출한 시료를 분석한 것으로 관련사항 이외의 선전 소송 등 증거자료로 사용하지 수 없습니다.							
농업기술실용화재단 이사장 							

Measured contents of sulfur silicate after spraying sulfur silicate product twice on the mushroom at the plantation in Naju, Jeonnam-do.



Results of Sulfur Silicate Use (Radish)

As a result of using sulfur silicate on radish in Jindo-gun Jeonnam, the contents of sulfur silicate in radishes are between 10.22mg ~ 26 mg.

It is expected that it will help not only improve farm income but also improve consumer health through functional cultivation.


발급번호 제20-C-0470호 □ 시험 성적서
 ■ 분석

① 의 뢰 인	성 명	진도군농업기술센터	사업자등록번호 (법인등록번호)	415-83-02917
	주 소	58904 전라남도 진도군 군내면 가흥로 697		
② 의 뢰 내 용	대상 물품명	농업기술센터-1454(2020.2.7.), 황을 시비한 무(2020.2.6.)		
	시험 개요	1항목: 황		
	용 도	진도대파 가격 하락에 따른 대체작물 개발을 위한 시험성적으로 활용		

③ 분석(시험) 성적 : 분석결과는 불임과 같음

「농업기술실용화재단 분석시험 의뢰 및 처리규정」 제4조의 규정에 의하여
 2020년 02월 14일자로 의뢰한 시료에 대한 분석(시험) 성적입니다.

2020년 02월 27일

농업기술실용화재단 이사장 


분석결과

○ 기능성분

분석항목명	시료명	시료명				
		1	2	3	4	5
무기성분	S(황) (mg/100g)	26.00	14.85	10.22	10.89	16.82



Results of Sulfur Silicate Use (Sesame leaf)

발급번호: 제 20-F00D-1-00085 호 분석 성적서			
① 의뢰인	성명	농업회사법인 케이아그로(주)	사업자등록번호 503-81-55338
	주소	42612 대구광역시 달서구 성서로 399 (이곡동, 4층)	
② 의뢰내용	대상 물품명	갯잎	
	시험개요	1항목: 황	
	용도	단순검사	
③ 분석(시험) 성적			
성분명	분석결과(단위)	성분명	분석결과(단위)
S(황)	40.87 mg/100g 이하 여백		
④ 비고			
<p>「농업기술실용화재단 분석시험 의뢰 및 처리규정」 제4조의 규정에 의하여 2020년 02월 05일 자로 의뢰한 시료에 대한 분석(시험) 성적입니다.</p> <p>이 성적은 신청인이 제출한 시료를 분석한 것으로 2020년 02월 07일 관련사항 이외의 선전 소송 등 증거자료로 사용하지 않습니다.</p>			
농업기술실용화재단 이사			



Proof of Results of Sulfur Silicate Use (Potatoes from Seosan)



- In case of CEO Kim in Hye-mi, Seosan, received the highest price at Garak-dong Agricultural Products Market after put sticker(refer to the photo) on.
- In order for crops to contain sulfur, they had to carry out basal fertilization and foliage spray at the same time. However, in the case of Kosifarms sulfur silicate products, sulfur is detected by only spraying it on the surface.

8-1. How to Use Sulfur Silicate at Crops

- Flowering plants
(Rice, barley, wheat, corn, sugar cane, sesame, grasses, etc.)

Seedling	Rice seedbed Spray 1,500 times, 1~2 sprays, Pre-transplant spray 1,000 times
Growing season	Tillering stage, Spray 1,000 times. Boot stage, Spray 1,000 times.
Harvest season	Spray 500 times 2 weeks before and after harvest
Growth inhibition	Spray 500 times

- Leafy vegetables
(Cabbage, lettuce, spinach, buttercup, leek, sesame leaf, etc.)

Seedling	Spray 1,500 times sulfur silicate 1 ~ 2 times at 15 days interval
Growing season	Spraying 1,000 times sulfur silicate (15 to 20 day intervals before harvest)
Growth inhibition	Spraying 500 times sulfur silicate

8-2. How to Use Sulfur Silicate at Crops

- Fruit vegetables

(Watermelon, pepper, cucumber, tomato, eggplant, pea, strawberry, etc.)

Seedling	Spray 1,500 times sulfur silicate
Growing season	Spray 1,000 times sulfur silicate (15 to 20 days interval)
Growth inhibition	Spray 500 times sulfur silicate

- Root vegetables

(Potato, garlic, ginger, onion, carrot, burdock, sweet potato, etc.)

Seedling	Spray 1,500 times sulfur silicate
Growing season	Spray 1,000 times sulfur silicate (15 to 20 days interval)
Harvest season	Spray 500 times sulfur silicate around 15 days before and after harvest

Thank you

Tae Won Enterprise

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