

*Concentrated Fulvic Acid  
Plant Activator*  
***Fujimin***<sup>®</sup>



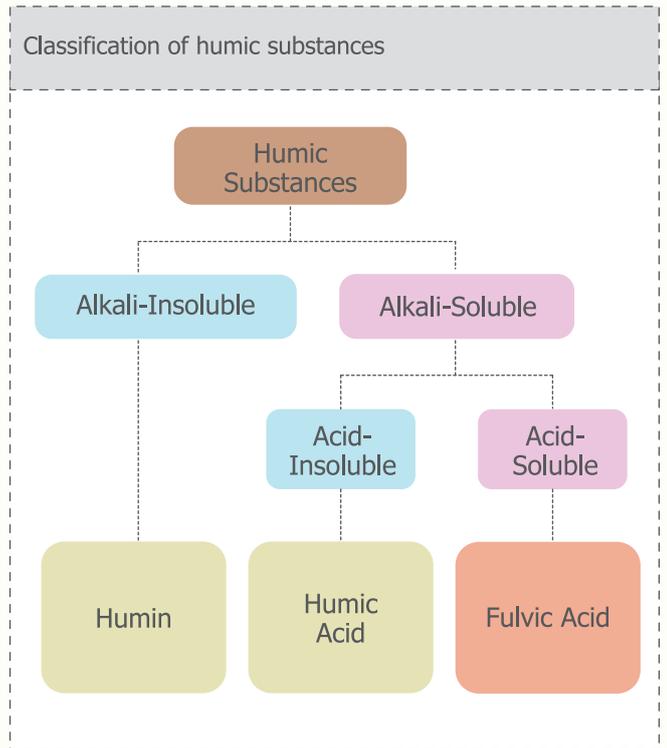
JAPAN CONSERVATION ENGINEERS & CO., LTD.

# What is fulvic Acid?

Fulvic acid is a type of humic substance that is produced only in small amounts in nature, and it is usually found in humic soils formed by the decomposition of dead animals and plants by microorganisms. Humic substances are classified into three types, humin, humic acid, and fulvic acid, depending on whether they are soluble or insoluble in acids and alkalis, respectively. Fulvic acid is soluble in both acids and alkalis, which makes it superior in terms of versatility and effectiveness, and it is a valuable substance that has been studied less than humic acid.

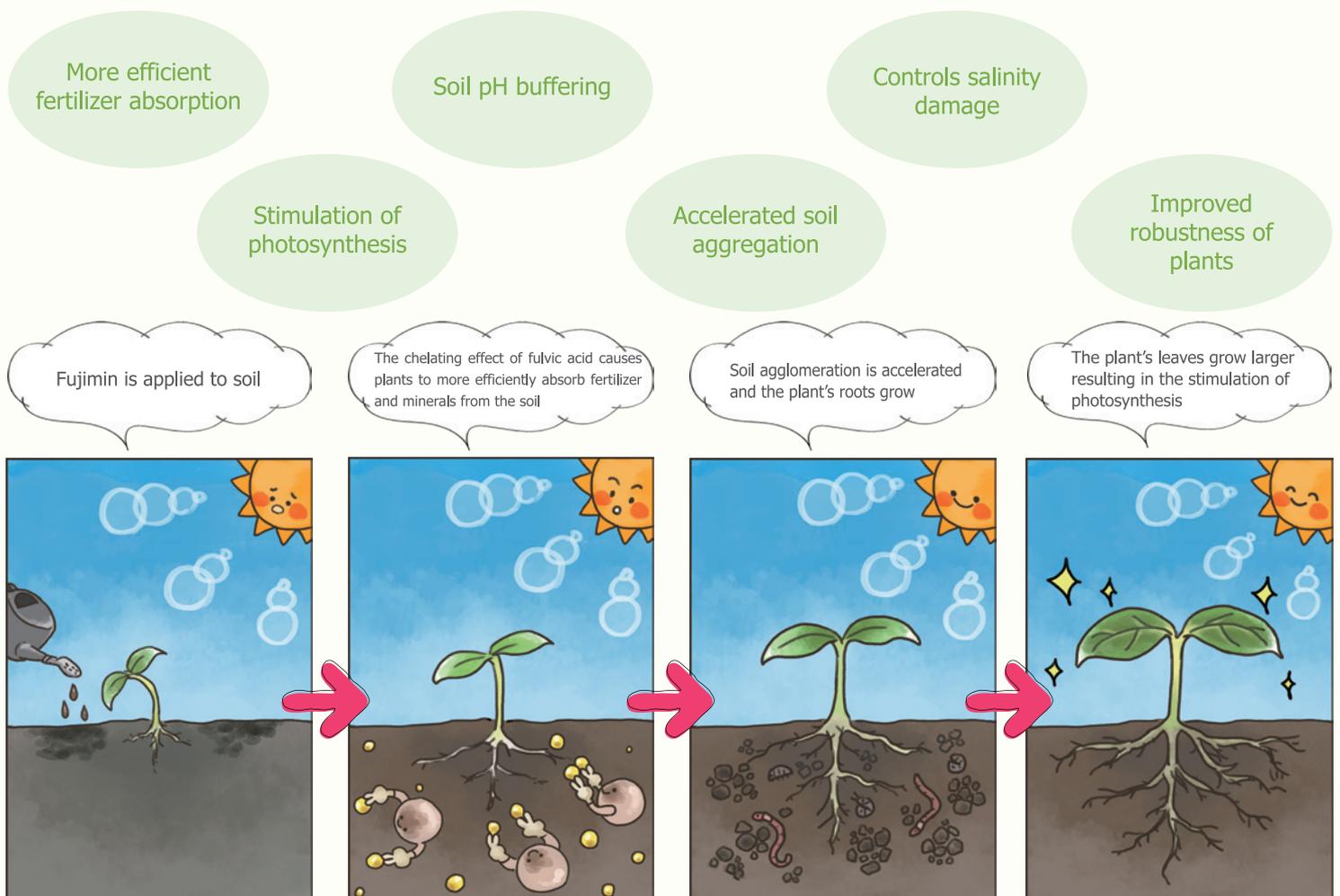
## A high concentrate fulvic acid made from domestic forestry resources "Fujimin"

Most fulvic acid materials are extracted from overseas mining resources, which is a major problem because of the possibility of environmental destruction and resource depletion. The Company has established a technology to mass-produce fulvic acid in high concentrations using wood chips and organic acids produced in Japan, instead of relying on overseas mining resources.



# Effects of Fujimin

By encapsulating the minerals necessary for photosynthesis, such as iron and magnesium ions, fulvic acid enables plants to absorb minerals efficiently. This phenomenon is called the "chelating effect" of fulvic acid. In addition to the above, Fujimin is expected to have the following effects.



## How to use

Amount of spraying

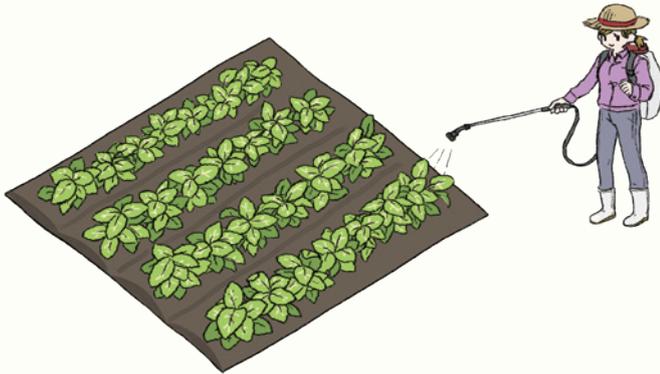
**Fujimin must be diluted with water by 500 times when it is used.**

The amount of Fujimin to be sprayed varies depending on the type of crop or fruit tree, the state of growth, and the soil environment. The minimum amount of Fujimin to bring its effect is as follows:

### In case of crops

	Fujimin	Water
20,000 plants per ha	2 L	1,000 L

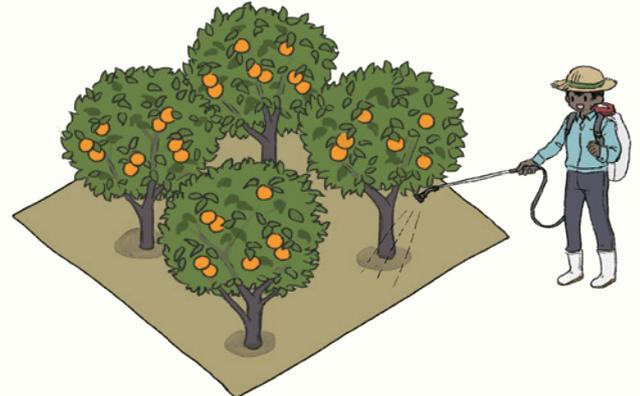
\* Calculation when 2 plants are planted per 1 m<sup>2</sup> and height of crops are 20 cm.



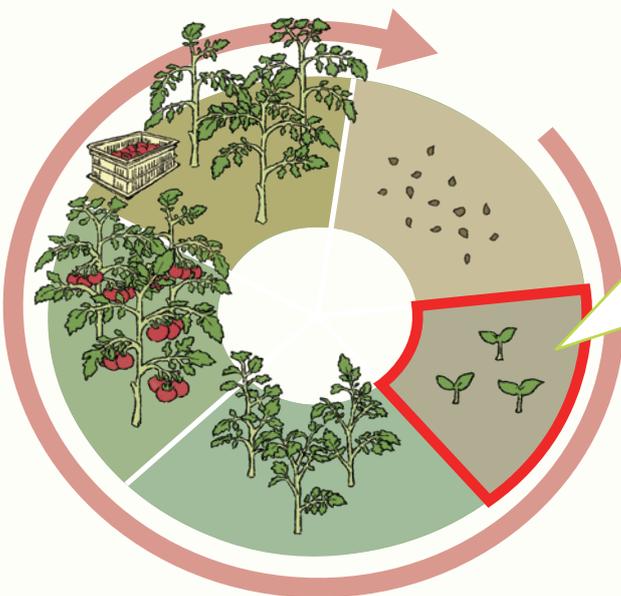
### In case of fruit trees

	Fujimin	Water
500 trees per ha	4 L	2,000 L

\* Calculation when fruit tree are planted at intervals of 4-5m and height of trees are 2 m



## Time of spraying

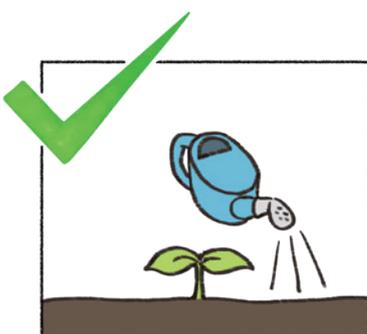


For crops, it is effective to spray Fujimin when the germinating is complete (approx. a week after germination) For fruit trees, spraying Fujimin with fertilizer application or after harvest is suitable timing. In case that the soil has lower nutrients than expected, spraying Fujimin together with fertilizer will be more effective for both crops and fruit trees. Spraying in rainy weather or when rainy weather is anticipated is not recommended because Fujimin may flow out of the soil with rain water.



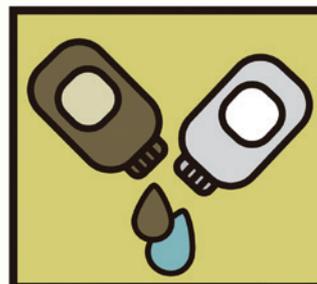
Any spraying method can be used, such as watering can, spryer or spraying machine.

## Attention

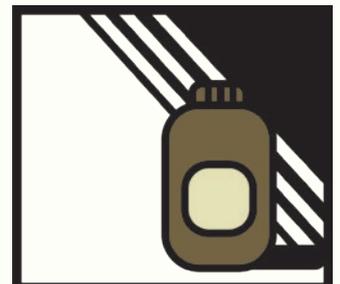


### Points to keep in mind when spraying:

- Fujimin must be diluted with water by **500 times** when it is used.
- We recommend spraying on soil rather than foliar spray.



Please handle with care when mixing Fujimin with pesticides.



Please store it in a cool, dark place to avoid direct sunlight.

# Agriculture

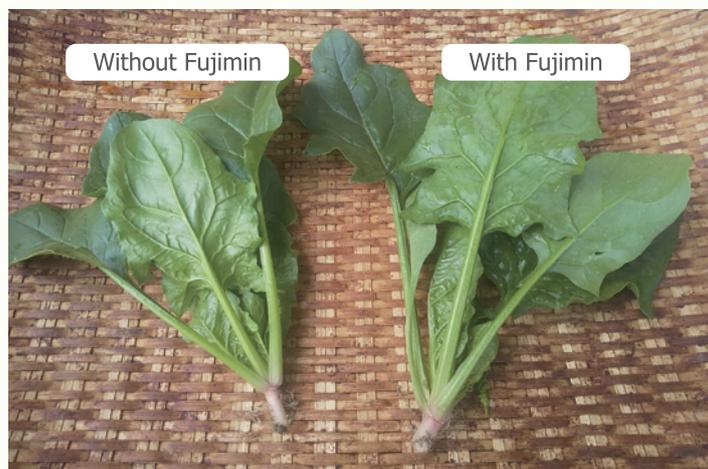
Fujimin was firstly sprayed on the soil within the root area of the peach tree which has a branch growth rate of approx. 13cm per year. The branches grew by more than 30cm one year later and more than 45cm two years later. Making the branches grow faster and larger brings more fruits and more yield.



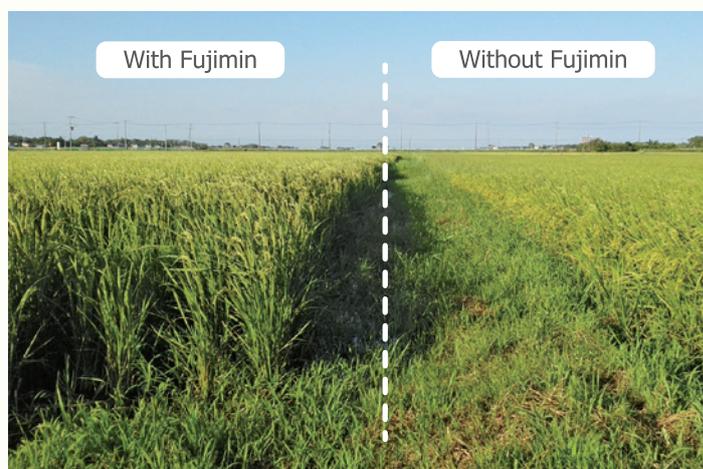
In response to the poorly growing lime trees due to the soil environment deterioration caused by poor management of the farmland, Fujimin was sprayed on the soil within the root area of the lime trees. As the result, a large difference in growth between with Fujimin and without Fujimin was recognized. More stable growth was brought by Fujimin, resulting in more increased yield of the lime.



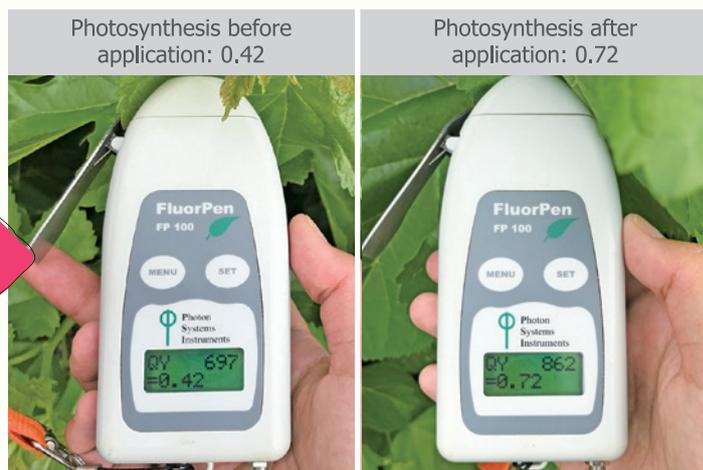
When Fujimin was sprayed on the farmland where spinach was grown using organic farming methods, the stems and roots of the sprayed areas became thicker and the leaves grew larger than those of the unsprayed areas. The chelating effect of fulvic acid made it possible to harvest high quality spinach even in farmland with no agricultural chemicals and little fertilizer.



Fujimin was applied to paddy fields damaged by the tsunami to desalinate them, resulting in an increase in yield from 60 kg per ten ares following the tsunami to 540 kg after application and a taste appraisal score of over 80.



Fujimin was sprayed on a mulberry field that was thought to have poor growth due to accumulation of fertilizer in the soil, which would delay the harvest time. As a result, photosynthesis was activated and the fertilizer components in the soil were absorbed more efficiently, and the farmland was restored to a healthy state within a month after the application, just in time for the harvest.



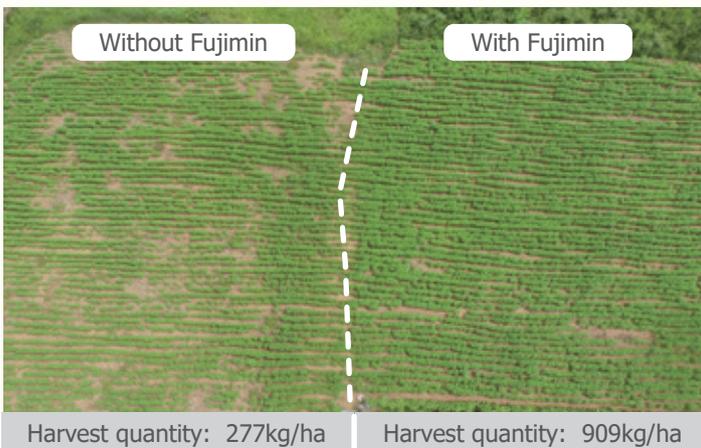
## Overseas Use

### Republic of Paraguay

When tomato plants were sprayed with Fujimin, the plants that were sprayed grew faster than those that were not sprayed, and it was possible to harvest more tomatoes that were darker in color and more mature. With faster growth, the number of harvests per year increased and the yield increased.



We verified the effect of Fujimin in sesame plantations. In the area where Fujimin was sprayed, the stems and roots became thicker and longer than in the area where it was not sprayed, and the number of fruiting clusters increased. As a result, the yield increased about three times compared to the unsprayed area.



### People's Republic of China

In China, where strong salt accumulation areas had become infertile due to high pH and EC (electrical conductivity) values, Fujimin was applied for desalination and to improve the soil for growing corn. In recognition of this achievement, Fujimin was used to desalinate the land created in the coastal disaster prevention forest damaged by the tsunami of the Great East Japan Earthquake.



Green pepper plantations were sprayed with Fujimin, the green pepper in the sprayed areas became larger in size and thicker in flesh than those in unsprayed areas, and the individual weight increased. In addition, it was possible to ensure consistent quality with darker color and less variation in size.



### Business development utilizing JICA projects

The project was selected as a JICA "Small and Medium Enterprises and SDGs Business Support Project - Project for Dissemination, Demonstration, and Business Development". In the Republic of Paraguay, crop yields are decreasing due to the deterioration of the soil environment caused by continuous crop failure and heavy fertilizer use. This project aims to improve the soil environment in Paraguay by using Fujimin, which will lead to improved crop quality and increased yields, thereby contributing to the improvement of the livelihoods of poor farmers and the correction of social disparities.

## ■ Major Awards Received by Fujimin

2019 Awarded the 28<sup>th</sup> Grand Prize for the Global Environment Award Minister of Agriculture, Forestry and Fisheries Award

2020 Awarded the 2020 Climate Change Action Award by the Minister of the Environment



### Awarded the 28<sup>th</sup> Annual Global Environment Awards since 1992

Recipient of the Minister of Agriculture, Forestry and Fisheries Award

## ■ Product Specifications

Organic JAS : JASOM-160101

Fujimin patent : 5354633rd and 6322689th

HS code : 3824.99



Fujimin 1L



Fujimin 10L

## ■ Organic JAS

Organic JAS is the standard for organic agricultural products, which is one of the Japanese Agricultural Standards (JAS). The Organic JAS mark is allowed to be affixed on agricultural products after the accreditation by a certification body. Because Fujimin is not synthesized with chemicals, it can be used not only by organic farmers but also by farmers using conventional farming methods. When organic JAS materials are used for crops as prescribed, the crops can be recognized as organic JAS agricultural products.



JASOM-160101

## ■ About STePP

Fujimin has been registered in the Sustainable Technology Promotion Platform (STePP) managed by the United Nations Industrial Development Organization (UNIDO) ITPO Tokyo Office. The judgement of registration is based not only on technical aspects, such as applicability for developing and emerging countries, superiority to competitive technologies, or sustainability, but also on the business stance of the company concerned. Therefore, it is proved that this technology has been recognized as a superior technology for sustainable development in developing and emerging countries.



## ■ Contributions to the SDGs using Fujimin

Many regions around the world are in need of soil improvement due to adverse environments. Salt accumulation alone affects one-fourth of the world's agricultural land. Fujimin has been shown to improve soil on land with salt accumulation, so further overseas application is expected. In order to contribute to the Sustainable Development Goals (SDGs), we will continue deploying technologies using Fujimin both in Japan and overseas to help achieve the following five goals.



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Company website



Official YouTube

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