



**MINERAL™**

**MINERAL™ Plants strengthener  
INSTRUCTIONS & PROTOCOLS**

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**AS AN d.o.o.**

**DIVISIONS**

**Agriculture**

**Mineral™ Green  
Mineral™ Yellow  
Mineral™ Red**

**Human body**

**Diagnostics  
Therapies**

**Organic products**

**Oils  
Essences  
Cosmetics  
Waters and teas  
Creams and soaps**

**Sport**

**Extreme  
Professional  
Amateur**

**Products and services of As an d.o.o. are sold under trade marks**

**Planet of Health™**

**100% integrative medicine**

**Mineral™**

**100% natural strengthener for plants**

**All products and services are based on own unique method and are the result of own knowledge.**

**The headquarters of the company is in Slovenia.**

**Company's branches are in Italy, Serbia, Turkey, Holland, Slovakia and Switzerland.**

**Products are sold in Russia, Japan, Poland, Greece, Belgium, United Kingdom, Hungary, etc.**

**All products are scientifically tested and approved.**

**Mineral™**

is a registered trade mark of company As an d.o.o., Ljubljana, Slovenia

Under No. 015284011 at EU Intellectual Property Office, Alicante, Spain



**Mineral™ is registered as a mean for strengthening plants in organic agriculture,  
According to (EC) No 834/2007 and 889/2008 regulations, office of registration:  
Institute for control and certification for agriculture and forestry, Slovenia SI 002 –EKO  
and is listed in the catalogue of agents that are allowed to be used in the organic agriculture**



**Mineral™ is listed in database at FiBL, Research Institute for Organic Agriculture in Germany, Switzerland and Austria  
As an agent that is allowed to be used in organic agriculture**



**Mineral™ is listed in database of InfoXgen, Austria as a recommended mean for use in organic agriculture  
as an agent that is allowed to be used in organic agriculture**



**All agriculture products that are grown with the use of Mineral™ and the production of such products  
is properly followed and documented can be put on the market as organic and can be declared in that way  
with the EU label for organic agriculture products**



**Ladies and gentlemen!**

**Years ago I had the most difficult life experience. Doctors predicted only a few more months of my life due to cancer in my body. I had decided that should had not be the case. You notice that I succeeded in the fight against my disease as I am writing this letter to you. I changed my nutrition and reduced stress as a new way my life. And, I continue to feed myself with proper and healthy food.**

**With in-depth study of the functioning of the human body and by testing different methods of treating the body, first on myself and later on others, I found that the food, the fuel we give into our bodies, is the main reason and source of healthiness.**

**Through the experiences of a vast number of sick people I am convinced that the main source of disease is lurking in wrong diet, eating disorders and bad quality of the food. In this modern times the main problem became conventional agriculture, where food is more akin to a poison as its original essence.**

**Later, my wife and I established the company As an d.o.o. to help people professionally. We work under the brand Planet of Health™. In the company we developed series of products to provide correct nutrients to human bodies.**

**But the main reason for many diseases lies in the bad quality of food. Plants and animals have the same life cycle, birth, growth, reproduction and finaly death. Plants, same as animals and humans need proper food to grow and stay healthy. Food for plants are minerals. We started to study this food for plants and finally developed a product line, registered under the name Mineral™. They contained all necessary minerals for plants in such a structure that the apsorbtion is fast and smooth.**

**Mineral products are 100% organic, very effective and give the possibility to replace completely or at least largely all chemical protective means.**

**I would like to expose a few facts that we and colleagues and experts at Universities and farms found out in the last decade of testing of Mineral™:**

**Mineral™ is suitable for all types of soil and climate.**

**Particularly good results in production can be achieved in hot areas and in greenhouses.**

**These is no need to change the existing mode of production when using Mineral™**

**The use of high quality spraying system enables significant saving of water.**

**However, Mineral™ needs some time to show its true power.**

**The most important advantages are certainly:**

**The food will keep original food flavor**

**This organic production method gives the same amount of crop as conventional farming**

**Profitability of the production is significantly higher**

**The prices of Mineral™ are modest and stay stable as none of compounds derives from petroleum.**

**I wish you personal and business success, abundant harvest and healthy and delicious food.**

Igor Ogorevc, CEO

## Chemicals, food production and human health

Few years ago the American Agency for registering new chemicals (US EPA) approved the 50 millionth new chemical substances. It took 33 years to register first 10 million chemicals and only 9 months to register last 10 million, about 25 new chemicals per minute.

All this products do not come from research centers but directly from chemical producers. In other words, new chemicals for agriculture are being released freely on the market with an astonishing speed and their effects on human health are at best not known.



Out of there 50 million over 100.000 chemicals are estimated to be in use daily. However, only a minor fraction of them have been thoroughly tested for effects on human health. The American Conference of Industrial Hygienists tested 642 substances for standards in air concentration and exposure, additional 900 substances for cancer activity and around 300 more for their effects on the human reproductive system. So, it can be easily deducted that well over 98 % of chemicals, to which we are routinely exposed, have not undergone even some form of basic impacts on human health. This might not be the case with fertilizers and pesticides, because of the obligatory registration but still, the overall accumulated exposure to agrochemicals remains unexplored and highly controversial.

Chemical fertilizers and pesticides have been cause of many well documented negative effects on humans. Their overall positive contribution to food production and food security have been overridden by other external factors that prove the technology may not be the crucial force when it comes to food production.

Chemical residuals in food have been widely tested and studies have proven that chemicals were traced in human bodies due to exposure from food. The more difficult part of the jigsaw is to establish biological links and mechanisms that correlate exposure, dose and illness. However, it is becoming clear that the need for healthier and »greener« food production will be the paramount interest in the years to come.

**Mineral™ is the promise on the way to healthier food production. While it provides valuable nutrients to the plant, it does not stand as a threat to the final consumer. Well balanced and completely natural, Mineral™ has yet to claim all its different forms of use, can strongly contribute to the process of food production. This revolutionary product is the answer to healthy food production and protection of health starting even before food is consumed.**

**While the population grows older, the percentage of highly vulnerable and sensitive people is also in rise. Parkinson's and Alzheimer's disease are only an example of degenerative diseases of »unknown« cause, but growing number of studies suggests a link between agrichemicals and the onset of these high-mortality illnesses. To wait for the conclusive evidence would mean to go against the precautionary principle – prevention instead of treatment.**

**Steps must be taken in the right direction and these steps must be taken now. Reducing exposure to chemicals through healthy food production seems to be essential and most cost-effective that could be taken at all.**

**Dr. Aleksandar Mitov MD, MSc (CII/HSPH)**



## References from the field

Production of vegetables on Nursery Moskrice, 311 Litijska cesta, 1261 Ljubljana: More than ten years no chemical plant protection was used, all production is based only on Mineral™ products. They grow all kinds of vegetables throughout the year. Plants are shiny, firm, tasty and bursting from the health, as demonstrated by the photographs. With regular use of Mineral™ plants gain strength and become resistant to such an extent that diseases and pests rarely attack and if they do the attacks are minimal. The farm is open to visitors and the owner is glad to share his experiences.



Farm and nursery Bantale, horticulture Dores, Kranj, Slovenia: In 2014 they used Mineral™ for the first time on tomatoes in a greenhouse and were pleasantly surprised by the extremely positive effects. Even mold has stopped without the use of fungicides. They widened the use of Mineral™ to glasshouse production of Chrysanthemum, Pansy, Violets and Primulae. Good experience and constant professional support convinced them to use only Mineral™ from 2016 in the overall production of seedlings of vegetables and ornamental plants. The farm is open for visitors.



## MINERALS or NUTRIENTS or ELEMENTS

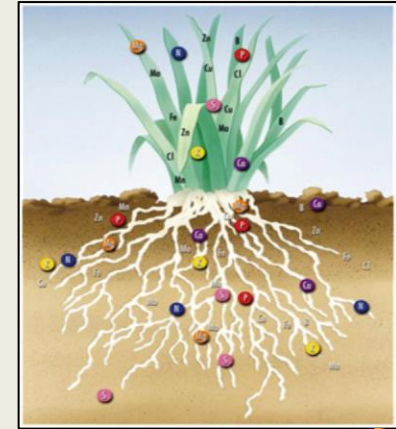


MACRO elements are for plants such as proteins, fats and carbohydrates for people

- Primary for the growth and development of plants in large quantities are nitrogen (N), phosphorus (P) and potassium (K)
- Secondary, which plants to adopt and use after provided with primary nutrients are calcium (Ca), magnesium (Mg) and sulphur (S), these plants need in smaller quantities

MICRO elements are for plants like vitamins and minerals for people

Plants need them in very small quantities, but are absolutely necessary for life: iron (Fe), chlorine (Cl), manganese (Mn), sodium (Na), boron (B), zinc (Zn), copper (Cu), nickel (Ni), molybdenum (Mo)



All these nutrients are essential for growth and development of plants. None must be missing, nor can we replace one with the other. Without these nutrients the development of plants will not be normal.

## MINERALS or ELEMENTS



### Macroelements

**Phosphorus (P)** influences directly the construction of nucleotides, nucleic acids, lipids and energy transfer. In the soil it is usually found in the form of salt. Extraction of phosphorus in plants is most intense in the early stages of growth and in the phase of roots system formation. Phosphorus beneficially affects plants resistance to low temperature, diseases and lodging.

**Potassium (K)** affects photosynthesis, protein synthesis, metabolism, transport, accumulation of carbohydrates, water regime, and plants resistance to low temperatures and resistance to diseases. Many agricultural, horticultural and fruit crops are characterized by strong need for potassium. Its lack can lead to serious disturbances in the metabolism of plants, resulting in reduced yield. Plants need potassium in all stages of growth. In the first half of the vegetation it has a crucial effect on the growth of vegetative organs, while in the second part the presence of potassium is essential for the pigmentation, the formation of fruits dry matter content and sugar content.



## Microelements

**Boron** is one of the most important trace elements. Many plant cultures are sensitive to its scarcity.

It plays an important role in the synthesis of carbohydrates and the fertilization process. The lack of boron is common in alkaline soils, especially in dry periods.

**Calcium** affects the physical and chemical properties of protoplasm and cell membranes. Its presence in plants refers to the firmness of fruits, better toleration of transportation and longer life. Calcium mobility is low but highly reactive ions can be easily linked to the anions present in soil and plants. The lack of calcium has a serious impact on the development and the quality of fruits. Missing calcium will challenge a number of irregularities,

particularly in vegetables and fruit crops.

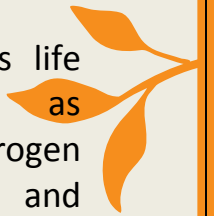
**Iodine** is responsible for plants growth, allows better development of flowers and fruits, rapid recovery from injuries, it enhances plants resistance to temperature stress and takes care for the most important function in plants – the flow of chlorophyll. The chlorophyll flow runs energy through the plant. Chlorophyll regulates heat in the plant. Iodine is a thermal regulator in the world of plants.

**Copper** is mainly present in the soil in sufficient quantities. Sometimes leaching or acidic soils result in copper deficiency. Copper is an integral part of chlorophyll and it is very important in the process of

photosynthesis, other biological processes as well.

**Iron** participates in numerous life processes of plants such as chlorophyll synthesis, nitrogen metabolism, respiration and photosynthesis. Needs of iron are relatively small. Alkali – carbonate soil or irrigation water (pH >7) will decrease the presence of iron significantly. Deficiency symptoms are mainly reflected as changes in coloration of leaves.

**Zinc** is an integral part of many enzymes molecules including auxin, plant growth regulator (growth hormone). It also plays an important role in the synthesis of RNA and some protein structures. The lack of zinc in plants inhibits the synthesis



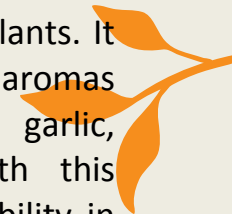
of growth hormone, resulting in the reduced development of plants.

**Magnesium** is an integral part of chlorophyll, therefore an important player in the plants nutrition. Furthermore, it affects a multitude of biochemical processes in plants such as phosphorus assimilation, synthesis of sugar, pectin complex sets of polysaccharides in cells walls, etc. Magnesium is usually lacking in poor soils or in soils with an

overdose presence of potassium and calcium.

**Manganese** is very important in the biochemical processes associated with photosynthesis. Its role is needed in the process of nitrogen assimilation. The lack of manganese in the soil or its interrupted delivery into the plants will cause antagonistic processes which are most easily visible in sugar beet and fruit cultures, such as raspberries, blackberries and apples.

**Sulfur** participates in the synthesis of amino acids such as cysteine and methionine and is considered a very important element in the construction of proteins in plants. It is characterized by intense aromas of plants (herbs, mustard, garlic, etc.) which land rich with this element. Sulfur has low mobility in plants. It mainly occurs in the form of sulfate salts of various metals.





## WHAT IS MINERAL AND HOW IT WORKS



Mineral™ is a natural remedy to strengthen all kinds of plants, gives power for better growth and resistance to diseases, pests and environmental stress: heat, drought, frost, wind, hail.

Mineral™ is a mix of marine and mineral rich mountain waters. This aqueous solution contains 24 + trace minerals which are nutrients for plants. They play a similar role in plants as vitamins and minerals do in a human body. An analogy is obvious, what we call dietary supplements for people, is Mineral™ for plants. Not basic food, but much needed supplements.

Mineral™ supplies the vast majority of the necessary macro-and microelements, so they are more vital to perform easily all vital functions and processes, like photosynthesis, etc.

Mineral™ does not specifically target any single process in plants, nor does specifically target any particular disease or pest. It simply creates good conditions in plants for smooth evolvement in their natural way. Healthy and strong plants have power to protect themselves and defend themselves. There are limits to this power like in human bodies.

What is important is this: plants having food and power not only to sustain the existence can effectively build their own defense mechanisms, prepare for attacks from the surrounding and fight. Defense mechanisms in plants are many and not all known to us, like thicker leaf surface, reinforced cell walls, stronger flows of energy, fast creation of enzymes, etc. Strong plants are hard to injure. Also, strong plants can easier endure periods of stresses from the environment.



## WHAT IS MINERAL AND HOW IT WORKS



Mineral™ has a good bioavailability of minerals in elemental form. Dissolved in water they are “ready to use” for plants with very high efficiency.

Ingredients in Mineral™ are in the form of cations or positive ions and as such immediately accessible to plants for use. However, if some ingredients are not in need to plants they will not be taken but will stay, because of the positive charge, in the soil and will bind to particles of humus or negatively charged particles of clay. The sand particles are uncharged, so binding is not possible. Watering plants that grow in mostly sandy soil with Mineral™ will have poor results as many ingredients will have no possibility to bind in the soil. In cases of sandy soil only spraying with Mineral™ is recommended.

Due to the easy acceptance of ingredients (or nutrients) into plants an electrical conductivity increases circulation of juices. Mineral™ solution contains NaCl which has the important task of control of water in plants and regulates osmotic pressure. NaCl is a strong electrolyte. It increases the electrical conductivity in plants and allows fast transfer of substances through plants' bodies and speeds up their entry into the individual cell and in cell's organelles. Nutrients are easily and quickly accessible to plants. All processes in plants run smooth. The result is good development, and prolonged vegetation.

NaCl (salt) dissolved in Mineral™ binds water. The area of roots if watered with Mineral™ will be constantly moist and substances not used immediately but stored in soil particles will be available to plants in the vicinity of their root hairs.





## **WHAT IS MINERAL AND HOW IT WORKS**



Intake of substances will be prompt when needed. Roots having available sufficient quantities of water and nutrients all the time are more powerful, they easier and faster draw nourishment from the soil. The efficiency of nutrients from Mineral™ is good; above ground parts of plants are stronger and more resilient.

The use of Mineral™ will allow the reduction of water for watering because salt binds water in areas of roots for longer period, the flow off and evaporation will be slower. In this way one can significantly reduce the dehydration of plants and soil and also reduce costs. In areas scarce with potable water this can be much appreciated effect.

Mineral™ is not a fertilizer and is not the basic food for the plants.

For successful production of any plants sufficient quantities of basic food must be given to plants, best in the form of organic fertilizers (farm manure) or mineral fertilizers (NPK). Also, in intensive production additional fertilizing has to be used; nitrogen especially.



## **WHAT IS MINERAL AND HOW IT WORKS**



But, with the use of Mineral™ the amount of fertilizers can be decreased as Mineral™ increases the efficiency of intake of substances from the soil, fertilizers well as. The crop will be so even bigger and better quality.

The use of Mineral™ gives crops and fruits more uniform in size, increases the number of market appropriate fruits and thus offer greater potential earnings. The fruits are stronger, more robust and easier to withstand transport. If stored less wastage is to be expected.

The use of Mineral™ provides more intense coloration of plants, which are darker green due to the increased photosynthesis. Flowers and fruits are glossy with more pronounced colors. Bright colors increase the sale of ornamental plants and vegetables.

Mineral™ is not a plant protection product.



## **WHAT IS MINERAL AND HOW IT WORKS**



It does not work directly on any disease or pest, but helps plants to build their own defense systems. For example: harder and thicker surface of the leaves.

On plants treated with Mineral™ it takes longer to diseases and/or pests to invade the plants and cause damage. As a consequence, plant protection products are used more seldom and definitely later than on plants not treated with Mineral™. Many times, no need of chemical protection will occur.

If the pressure of a disease/pest is small increased use of Mineral™ will provide enough power to plants to protect them with no intervention. This is particularly important and welcome in organic production and home gardening where the use of chemical compounds in the plant protection is neither permitted nor desirable.

In intensive production on large surfaces, (which means a lot of food bacteria, fungi and other pathogens or aphids, mites, thrips, flies, leafminers, bugs, etc.) and during unwelcome weather conditions for plants a pressure of diseases and/or pests attacks will be much stronger. The need for chemical protection of crop will be more adequate to protect plants, of course depending on terms and conditions prescribed for such products. But the number of applications can be reduced,



## **WHAT IS MINERAL AND HOW IT WORKS**



as a rule, with the use of Mineral™. Plants treated with Mineral™ are more resilient and need less help in protection. Beside the reduced frequency also lower dosage of chemicals can be applied.

The reduction of mineral fertilizers and chemical compounds for protection of plants will reduce significantly costs of production. Mineral™ is inexpensive compared to fertilizers and chemicals, saves money in production and adds to quality of products as less (or even none) poisons are sprayed on plants.

Mineral™ requests no waiting periods or periods of security because it contains no harmful substances.

Mineral™ is friendly to bees, bumble bees and other pollinators, also to ladybirds and other beneficial insects.

Plants treated with Mineral™ are healthier and make healthy crop. This means healthy food for people and animals with no allergens. Mineral™ allows the reduction of chemicals in plants protection, the reduction of potable water in agriculture, adds to biodiversity of nature.

Finally, Mineral™ significantly reduces costs of production.

# MINERAL™ GREEN

## FOR WATERING

## CARE OF THE ROOTS



Mineral™ Green is a natural remedy to strengthen all kinds of plants, vegetables, ornamental plants, grasslands, etc.

It contains all the necessary macro and micro minerals for optimal development of plants.

Water the soil under plants with Mineral™ Green to provide roots with nutrients and water.

Soil will dehydrate more slowly if soaked with Mineral™ Green.

Plants tended with Mineral™ Green need less watering, survive better through drought periods and withstand temperature stress or rapid temperature change in the nature easier.

Less watering means the responsible consumption of drinking water, for market growers also less cost.

Before watering with Mineral™ Green, soak soil, if dry, thoroughly with clean water.

One or two watering with Mineral™ Green is sufficient, do it immediately after planting or after transplantation.  
(See instructions.)

Mineral™ Green is not suitable for watering on sandy soils, except if enough humus is previously added.

Mineral™ Green helps in regulating the pH of the soil.

In the soil well prepared with organic (well rotted farmyard manure district, homemade compost, ...) fertilizers or mineral fertilizers (NPK, ...) the use of Mineral™ Green will give the crop at least equal to or greater to quantify from intensive production, but certainly better in quality and stronger in colors and flavors.

The amount of mineral fertilizers, when watering with Mineral™ Green, can be reduced, so the cost of production will be lower. (See instructions.)

Mineral™ Green should be used alone not mixed with any other substance in the canister for watering. However, other means can be delivered separately for watering in the same day.

Mineral™ Green is not harmful to bees and beneficial animals.

No waiting periods for security is needed as Mineral™ Green contains no harmful substances.

Always add Mineral™ Green into water and not vice versa, otherwise it does not work. Take care of the proper solution and take into account all recommendations listed in the instructions for use. Preferably use the mixture as soon as possible. Stir a mixture of water and Mineral™ Green well to distribute the solution even. Standard solution is 4% of Mineral Green in water – see table in the instructions for use.

# MINERAL™ YELLOW

## FOR SPRAYING AGAINST DISEASES



Mineral™ Yellow It is a natural remedy for raising the resistance of plants against diseases. It can be used on all kinds of plants.

Mineral™ Yellow contains all of the essential macro and micro elements for optimal development of the plants.

It is used by spraying in all above ground parts of plants, blooms included. It leaves no visible traces.

It is used for preventative at least once per week at regular intervals (for example, every Friday) in 4% solution.

First spraying should occur 14 days after emergence of plants from seeds or 7-10 days after transplantation of seedlings, otherwise one can damage the young plants or seedlings.



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In cases of signs of infection with a disease increase the solution to 8% and spray every other day. (See instructions in protocols.)

Plants tended with Mineral™ Yellow are stronger, more resistant to diseases; get sick later or to a lesser extent or not at all.

For market producers Mineral™ Yellow allows none or less and later use of chemical protection agents.

Plants treated with Mineral™ Yellow withstand better and easier the stresses from the environment, such as wind, frost, drought periods, also temperature stress from rapid temperature changes.

In case of hail immediately (as soon as the leaves dry) spray with Mineral™ Yellow in 8% solution and repeat the day after as it very effective in restoring the affected plants.

Mineral™ Yellow grants crops with definitely better quality, stronger colors and flavors, uniform in size, compact and durable fruits, which is especially important for market growers.

Mineral™ Yellow spares completely or to a large extent the use of chemical plant protection products, thus also reduces the cost of production and solves problem of protection registrations.

Mineral™ Yellow should be used separately. Do not mix it with any other agent, also not with Mineral™ Red in the same container. Spraying with Mineral™ Yellow and Mineral™ Red should be at least 24 hours apart.

Numerous trials showed the best effect in terms of the quantity and quality of the crop is reached when Mineral™ Yellow and Mineral™ Red were applied as preventive regularly once per week in one day interval between both.

Mineral™ Yellow is non-polluting and is harmless to humans and animals. It is not harmful to bees and beneficial animals. There is no waiting period after use of Mineral™ Yellow.

Always add Mineral™ Yellow into the water and not vice versa, otherwise it does not work. Take care at the proper solution and take into account all recommendations listed in the instructions for use. Use use as soon as possible because of the reliability of the set mixture. Stir well before spraying. A standard solution of Mineral™ Yellow is 4%. (See instructions in protocols.)

# MINERAL™ RED

## FOR SPRAYING AGAINST PESTS



Mineral™ Red is a natural remedy to improve the resistance of plants against pests. It may be used on all kinds of plants.

Mineral™ Red contains all of the essential macro and micro elements for optimal development of the plants.

It is used by spraying all above ground parts of plants, blooms included. It leaves no visible traces.

Mineral™ Red should be used for preventive once per week at regular intervals (for example, every Saturday) in the 4% solution. (See instructions,)

Start spraying 15 days after emergence of plants from seeds or 8-11 days after transplantation of seedlings, otherwise one can damage the young seedlings.

In the event of the occurrence of pest increase the solution to 8% and spray every other day until the pests are present. (See instructions in protocols.)

Plants tended with Mineral™ Red are stronger, more resistant to pests, have thicker leaves and firmer horny layer and are therefore more resilient to attacks of insects and mites (bite, sucking juice). For market growers this means none or later and less use of chemical agents for protection of plants.

Mineral™ Red works optimal on the early larval stages, therefore it is essential to be present in plants in sufficient quantities prior the hatching of larvae.

Mineral™ Red is not effective against snails.

Numerous trials showed the best effect in terms of the quantity and quality of the crop is reached when Mineral™ Yellow and Mineral™ Red were applied as preventive regularly once per week in one day interval between both.

Mineral™ Red grants crops with definitely better quality, stronger colors and flavors, uniform in size, compact and durable fruits, which is especially important for market growers.

Mineral™ Yellow spares completely or to a large extent the use of chemical plant protection products, thus also reduces the cost of production and solves problem of protection registrations.

Mineral™ Yellow should be used separately. Do not mix it with any other agent, also not with Mineral™ Red in the same container. Spraying with Mineral™ Yellow and Mineral™ Red should be at least 24 hours apart.

Mineral™ Red is non-polluting and is harmless to humans and animals. It is not harmful to bees and beneficial animals.

There is no waiting period after use of Mineral™ Red.

Always add Mineral™ Red into the water and not vice versa, otherwise it does not work. Take care at the proper solution and take into account all recommendations listed in the instructions for use. Use use as soon as possible because of the reliability of the set mixture. Stir well before spraying. A standard solution of Mineral™ Red is 4%. (See instructions in protocols.)

## INSTRUCTIONS FOR THE USE OF MINERAL™

How to prepare the correct solution of Mineral™?

Water	1% solution	2% solution	4% solution
<b>1 liter</b>	10ml	20ml	40 ml
<b>5 liters</b>	50 ml (0,5 dl)	100 ml (1 dl)	200 ml (2 dl)
<b>10 liters</b>	100 ml (1 dl)	200 ml (2 dl)	400 ml (4 dl)
<b>100 liters</b>	1 liter	2 liters	4 liters
<b>1000 liters</b>	10 liters	20 liters	40 liters

Depending on the percentage required from the protocol use the appropriate Mineral™ and pour the quantity of it from the table into the water. Some simple mathematics is always needed to calculate the correct amount of Mineral™ and water for the solution.

For 8% solution double the amount of Mineral™ prescribed for 4%.

How much water is needed for the area of the land one will water or spray with Mineral™ is described further on in these instructions.

## 1. MINERAL™ GREEN

### STRENGTHENING OF PLANT

The basic use of **Mineral™ Green** is watering with 4% concentration (see table) immediately or as soon as possible after sowing and transplanting seedlings (see protocols).

Prior to this use basic fertilization of the soil has to be arranged, preferably with organic fertilizers such as compost (made by almost every conscious gardener at home) or rotted farm manure which can be bought in form of various types of briquettes.

Soil preparation for intensive production will need soil analysis and appropriate fertilizing with NPK (mineral fertilizers) if farm manure is not sufficient.

**Mineral™ Green** delivered to the soil by watering enables nutrients tied in fertilizers to liberate easier and faster for plants to be used. **Mineral™ Green** provides better utilization of nutrients from the soil, a part of essential minerals come from **Mineral™**



**Green** as well, the result of this is that the amount of added fertilizer can be reduced to achieve at least equal in terms of quality, however, better crop in terms of quality.

Domestic garden and organic production will use no "artificial" mineral fertilizer and commercial growers will reduce chemical fertilizers in the preparation of the soil and thus reduce some costs, something of much importance in intensive agriculture production.

All other natural means for the soil preparation can be used (nettle, active carbon, etc.) for additional fertilization during growth of plants. Do not mix different substances in the same solution, make the watering separately. It can be done on the same day.

Always add **Mineral™ Green** into the water, never vice versa and mix well. It is best to use the prepared mixture immediately and until the end. If this is not possible, it can wait a day or two in the shade and in cold areas. Mix well again before watering. Use neutral material, wooden or plastic rod to mix. Use watering can with sprinkler or spout. Use irrigation system or water drip.

Remember that **Mineral™ Green** is intended for the



soil and for the roots of plants.

### HOW TO WATER PROPERLY?



A general rule for watering is use of clean water delivered to the area around roots of plants. The aim of watering is to give roots enough water or moisture in which nutrients will dissolve and these will be sucked into plants by roots and sprouts. Watering always means delivering water and nutrients to the roots and root hairs.

Pouring **Mineral™ Green** solution on the plants (leaves, buds, flowers, stems, branches, fruits) will not deliver it to the roots in the soil. Watering means to give moisture to the roots of plants, not to wet plants all over.

If possible, water in the morning or before noon, when the absorption of nutrient is the best.

If the soil is dry do watering in two steps, first with fresh water and second with the solution of **Mineral™ Green** mixed in the water. This will allow much better binding of active substances to soil particles.

Watering with **Mineral™ Green** is not an option on predominantly



sandy soils, which do not allow either the binding of minerals with the soil particles or the retention of moisture.



## 2. MINERAL™ YELLOW

### INCREASES RESISTANCE OF PLANTS AGAINST DISEASES

**Mineral™ Yellow** is used by spraying on plants. The basic use for all plants is spraying plants with 4% concentration (see table).

Start watering with **Mineral™ Yellow** approximately two week after germination when young plants emerge from the soil or one week after planting of seedlings. Do not start earlier to prevent possible damages of plants too young.

Spray regularly throughout the growing season in intervals of at least once per week. (It is wise to decide on the day of week for this regularity, for example, every Friday.)

It is important to give plants constant and regular help in shaping of their effective defense system. We need to be aware that this help will be efficient only with proper and regular use of **Mineral™ Yellow**.

**Mineral™ Yellow** is prevention against diseases. It helps plants to develop own strong defense systems and fight attackers forcefully. In the event of signs of the disease, increase the concentration (see programs) and spray every other day three times. But, it is too late



to increase the concentration and daily cycle when the disease is spreading widely. Mineral Yellow is not a fungicide and does not fight agents of the disease itself.

Usually the disease occurs much later or not at all on plants treated with **Mineral™ Yellow**.



Farmers in intensive production will still have to use fungicides but this use will be lesser.

Tests has shown, that less repetition of chemical plant protection products and lower concentrations of prescribed fungicides per hectare are needed to cure diseases of plants previously treated with **Mineral™ Yellow**, when diseases advance.

**Mineral™ Yellow** reduces costs of herbicides needed, significantly lowers problems connected to registration of chemicals in use, withdrawal periods, and poisonous residues in plants and in the

Tests has shown, that less repetition of chemical plant protection

environment. Also health of people working in fields is not unnecessarily exposed to risks.

Organic growers and others may also use other means allowed for protection, but not at the same time and not in the same spraying equipment. It means that nothing should be mixed with **Mineral™ Yellow**. All others means may be used in the same day. Allow plants a few hours after spraying with **Mineral™ Yellow** to absorb substances.

Always use **Mineral™ Yellow** separate.

**Mineral™ Yellow** can be sprayed on plants in all stages of their growth, during flowering as well. It will not damage any part of plants, not even blooms. It does not harm bees and other useful animals.

**Mineral™ Yellow** is used for spraying on all plant species independently of the ground conditions.

**Mineral™ Yellow** goes through the epidermis of leaves and other parts of plants into interior of plants. Substances delivered into plants travel with the juices in all parts of the plants where they are used in various processes of metabolism and are taken into cells. A very important effect of **Mineral™ Yellow** is increased electrical conductivity in plants which means that all processes run more vigorously. Plants need little time, a maximum of 2-3 hours,

depending on the situation, to absorb all substances delivered by spraying. This means that the rain three hours after spraying will produce no risk to the asset.

It is wise to spray **Mineral™ Yellow** before rain (two hours), if it falls too quickly, spray again as soon as possible after the rain. Allow only so much that the leaves dry. The same applies in the case of hail.



Spray **Mineral™ Yellow** preferably in the morning as soon as dew evaporates. During summer spraying in the evening, after sunset, is also good, better if there is no wind. Spray nothing on plants during hot hours of the day as strong vaporization will cause substances to vanish into air before absorption.

When preparing solution, always blend **Mineral™ Yellow** into the water, never vice versa, and mix well. It is best to use the prepared mixture immediately, if this is not possible, store it for a day or two in the shade and cool area. Discard not used compound after more than two days in waiting. Mix well again before use. Use wooden or plastic rod for mixing, avoid metal.

### 3. MINERAL™ RED

#### INCREASES RESISTANCE OF PLANTS AGAINST PESTS

**Mineral™ Red** is used by spraying on plants. The basic use for all plants is spraying plants with 4% concentration (see table).



Start watering with **Mineral™ Red** approximately 15 days after germination when young plants emerge from the soil or 8 days after planting of seedlings. Do not start earlier to prevent possible damages of plants too young.

Combination of **Mineral™ Yellow** and **Mineral™ Red** used in prevention is much recommended. In such a case the starting time for use of **Mineral™ Red** is one day after Mineral Yellow.

Spray regularly throughout the growing season at regular intervals of at least once per week. (It is wise to decide on the day of week for this regularity, for example, every Saturday or even easier, always one day after the application of **Mineral™ Yellow**.)

It is important to give plants constant and regular help in shaping of their effective defense system. We need to be aware that this help will be efficient only with proper and regular use of **Mineral™ Red**.

**Mineral™ Red** is prevention against pests. Therefore, apply it when no pests are on plants. At first occurrence of pests increase the concentration (see programs) and daily cycle (three times every other day). It is useless to start the applications of **Mineral™ Red** when pests are in full attack.

**Mineral™ Red** is not an acaricide and insecticide and does not work directly on the pests. It effectively helps plants, through a longer period of growth and development, to create their own defense system.



Insects, especially their young larvae, which were hatched from eggs or were gestated in their mothers and born alive, always start feeding on with plants. **Mineral™ Red** enters their bodies as they are sucking juices or biting parts of plants and provokes much

too high metabolism processes in the digestive systems of young larvae and this causes irreparable damages. **Mineral™ Red** is

therefore most effective in damaging digestive systems of very young larvae.



Older or larger larvae or adult insects have to eat more plants or suck up more juices to receive enough **Mineral™ Red** into their bodies, sufficient to destroy their digestive system.

**Mineral™ Red** has to be present in plants in sufficient quantities before attacks of pests. So, spraying of **Mineral™ Red** is prevention.

**Mineral™ Red** work better on insects that suck sap from the leaf veins, for example aphids. Concentration of **Mineral™ Red** is higher in juices of plants than in solid parts.

Insects eating leaves have to take more mass to receive the same amount of **Mineral™ Red** in the body, because its substances are more scattered within cells of leaves.

The effect of **Mineral™ Red** on eating bugs is the same as on sucking ones, only the intake is different. On the outside look one sees more damage as eaten leaves are visible, juices lost are not to be seen, but damage is about the same.

Our tests show best results if **Mineral™ Yellow** and **Mineral™ Red** are used throughout the growing season on the regular basis and in regular intervals at least once per week with one (or two) days

delays. This seriously postpones or even eliminates the attacks of pests (and diseases).

Farmers in intensive production will still have to use pesticides but this use will be lesser and the start of the used will be postponed compared to production with no **Mineral™ Red** treatment.

Tests has shown, that less repetition of chemical plant protection products and lower concentrations of prescribed pesticides per hectare are needed on plants previously treated with **Mineral™ Red** when pests are in full attack.

**Mineral™ Red** reduces costs of pesticides needed, significantly lowers problems connected to registration of chemicals in use, withdrawal periods, and poisonous residues in plants and in the environment. Also health of people working in fields is not unnecessarily exposed to risks of poisons in use.

Organic growers and others may also use other means allowed for



protection, but not at the same time and not in the same spraying equipment. It means that nothing should be mixed with **Mineral™ Red**. All others means may be used in the same day. Allow plants a few hours after spraying with Mineral Red to absorb substances.

Always use **Mineral™ Red** separate.

**Mineral™ Red** can be sprayed on plants in all stages of their growth, during flowering as well. It will not damage any part of plants, not even blooms. It does not harm bees and other useful animals.

**Mineral™ Red** is used for spraying of all plant species independently of the floor conditions.

**Mineral™ Red** goes through the epidermis of leaves and other parts of plants into interior of plants. Substances delivered into plants travel with the juices in all parts of the plants where they are used in the various processes of metabolism and are taken in cells. A very important effect of **Mineral™ Red** is increased electrical conductivity in plants which means that all processes run more vigorously. Plants need a little time, a maximum of 2-3 hours, depending on the situation to absorb all substances delivered by spraying. This means that rain three hours after spraying will produce no risk to the asset.

It is wise to spray **Mineral™ Red** before rain (two hours), if it falls too quickly, spray again as soon as possible after the rain. Allow



only so much that the leaves dry. The same applies in the case of hail.

Spray **Mineral™ Red** preferably in the morning as soon as dew evaporates. During summer spraying in the

evening, after sunset, is also good, better is there is no wind. Spray nothing on plants during hot hours of the day as strong vaporization will cause substances to vanish into air before absorption.

When preparing solution always blend **Mineral™ Red** into the water, never vice versa, and mix well. It is best to use the prepared mixture immediately, if this is not possible, store it for a day or two in the shade and cold area. Discard not used compound after more than two days in waiting. Mix well again before use. Use wooden or plastic rod for mixing, avoid metal.

## HOW TO SPRAY PROPERLY?

**The proven fact is that 80% of the effect of any mean used on plants depends on the proper method of application, in our case spraying. Therefore, reading a few lines below will not be a waste of time.**

Spraying is the most common way to provide means of protection. It is used on all arable crops (cereals, potatoes, maize, etc.), grass, vegetables, all kinds of ornamental plants, hedges, trellis, orchards, trees, vineyards, etc.

### Size of droplets?

Correct spraying has a simple rule: at least 60-70% of the leaves area should be spattered and dropping should be prevented.



Any mean sprayed on the plants which drops to the ground is wasted. This is one of the most common mistakes people do when spraying plants. So, it is very important to know some basic facts that follow.

**The size of droplets in spraying is up to 0,5 mm, which means middle size. Spraying distance is about 0,5 m.** Pressure in the

spraying device should be appropriate (not too strong as the distance is not wide).

**Droplets flying through spraying nozzle should stay on the leaves.**

If the droplets bounce off the leaf's surface than the nozzle is too close, if the droplets do not reach the plant than the nozzle is too far. In both cases the result of spraying will be zero.



of droplets with the nozzle.

It is important that no mist should form while spraying. It we see the blur than droplets are too small. Adjust the size

### How much water to use?

**For correct spraying it is necessary to use the recommended amount of water.**

There are prescribed or recommended quantities of water to be used. (See protocols.)

The initial quantity of water per unit of area:

for permanent crops, such as vines is 1000 l/ha (4000 vines)

for fruit trees take into account water consumption of 500 l/ha at 1 m height of the canopy

for arable crops will need 200 – 300 l/ha

for vegetables 500 l/ha.

Some mathematics will be necessary before going to spray. However simple it is usually quite a problem.

One hectare is 10.000 m<sup>2</sup>. Always estimate the area of plants that are to be sprayed on. If that is 1000 m<sup>2</sup>, one tenth of prescribed water for a hectare will be needed. If the area is 100 m<sup>2</sup>, only one hundredth of prescribed water for a hectare will be needed.

What comes out always almost surprisingly is that the quantity of water and that Mineral™ to prepare a solution is really not much.

**For instance: in the garden of 50 m<sup>2</sup> of vegetables, one will need for one spraying 2,5 liters of water, to make a solution of standard 4% one has to pour 100 ml ( 1 dl ) of Mineral™ into the water, stir and spray. 1 dl is half of average glass for water or juice.**

To prepare the almost correct amount of Mineral™ solution it is always wise to calculate the quantity of water and Mineral™ really needed.

#### **Example of tomato spraying**

One hectare is 10.000 m<sup>2</sup>, for this area of tomato 500 liters of water is needed for one spraying,

If the garden area of tomato is 10 m<sup>2</sup> and the tomato is most usually common 70 cm, make the simple calculation:

10 000 m<sup>2</sup>.....500 l water  
10 m<sup>2</sup>..... x

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$$X = \frac{500 \text{ l} \times 10 \text{ m}^2}{10\,000 \text{ m}^2} = \underline{\underline{0,5 \text{ l water}}}$$

For 10 m<sup>2</sup> of planted tomato one will need 0,5 l of water.



As one needs 4 % solution of **Mineral™ Yellow** or **Mineral™ Red**, and 0,5 l of water is same as 500 ml, make another simple calculation:

500 ml..... 100 %  
X ..... 4%

$$X = 500 \text{ ml} \times 4 / 100 = 20 \text{ ml}$$

Pour 20 ml of **Mineral™ Yellow** or **Mineral™ Red** into 500 ml of water and get 4% solution.

However, these simple calculations are a great trouble for many users. In case of doubt consult the producer to avoid mistakes and give plants correct treatment. Consult the web page where is the calculator for the preparation of correct amount of the solution.

## IMPORTANT

### SPRAYING versus WATERING

It is very common that gardeners and farmers as well, use a lot of water in good faith to spray plants very well. Probably, they also notice droplets to fall on the ground. Also, quite many were annoyed where no effect of the solution delivered has been noticed.

And, it is also very common that none of them noticed that they had watered, not sprayed plants.

With too much water solution slid and fell to the ground.

From the tomato example (see above) comes that only half a liter of water and 20 ml of Mineral Yellow or Red will suffice to spray the area of 10 m<sup>2</sup>.

It is not much on the first glance but this is also correct.

With some practice in the garden or in the field one will find easily how to distribute this quantity.

Please, always calculate before preparing the solution and start spraying. Call and consult in case of doubt, check the web page for the calculation.

## SPEED OF MOVEMENT WHEN SPRAYING

**IMPORTANT**

Too much water and solution used for spraying is tightly connected to the speed of movement.

Tractor sprayer moves with a speed of about 6-7 km/h and the same speed should be maintained when spraying smaller areas by walking. This speed corresponds to fast walking.

A bit more problematic is the spraying of trees, when one moves around the tree too slow, which is wrong.

## WATER TEMPERATURE

Water for spraying should be stale, not directly from the tap.

Tap water is usually too cold, solution of Mineral™ in cold water is less effective and cold water can also damage the surface of leaves.

### **Practice!**

Here were explained the most basic requirements that one needs to take into account to work with Mineral™ satisfactorily.

For starters, fill the spraying device with clean water and try to use it on 10 m<sup>2</sup> area. Repeat until you get a sense of speed, the distance to the plants and pressure in the nozzle. Don't be redundant. This practice will allow you to achieve success always.

## **WHAT IS THE DIFFERENCE BETWEEN SPRAYING AND SPRINKLING?**

**Droplets in sprinkling are much smaller than in spraying.**

**Sprinkling makes mist of droplets.**

**With sprinkling we cover wider areas, vineyards, orchards, fields with ornamental plants, hop gardens.**

**The pressure in the sprinkling device is usually high.**

**Droplets in spraying should be big enough not to form any mist.**

**The pressure in spraying can is very moderate.**

**Droplets should not be jetted more than 70 cm.**

**Spraying equipment means a device to produce pressure in the can and liquid is pushed out through nozzle by force.**

**Watering cans are not suitable for spraying no matter how small are the holes in the rose.**

## GOOD TO KNOW

All three types of Mineral™ can be used throughout the year, not only from spring to autumn.

Mineral™ is the only mean that simultaneously increases the efficiency of nutrients (and consequently reduces the quantity of artificial fertilizers needed) and raises the resistance of plants against pests and diseases and stress (and consequently significantly reduces the use of chemical compounds for protection of plants).

Annual plants, such as vegetables and ornamental plants, as well as annual grassland show positive effects of Mineral™ very fast, more permanent crops such as fruit trees, vines and ornamental perennials need longer period of treatment to display its influences.

## OTHER ADVANTAGES OF MINERAL™



### **PURCHASE**

Easily accessible on the shelves in free sale with no registration;



### **USE**

Easy to use, no special knowledge required, tips of improvement always available by the producer;



### **POLLUTION**

It is harmless, not toxic to animals, people, and environment. It can be consumed without consequences, but is not tasty;



### **WITHDRAWAL PERIOD**

None, with no harmful compounds it is safe to use it in all phases of plants growth;



### **STORAGE**

No need to be stored separately, keep it in dark place and do not allow to freeze and to overheat (over 20°C);



### **DISPOSAL OF REMNANTS**

All remnants of the prepared mixtures are harmless and can be used on any plants or disposed into sewage;



### **EMPTY PACKAGING**

It is ordinary household waste, rinse and put it in the container or use is for some other purpose;



### **SAFETY**

No special safety measures or protective equipments are needed;



### **POISONING**

Poisoning is not possible. The liquid is potable. Drinking of larger quantities will not happen as the taste, due to its salinity, is not pleasant.

**For the effective use of natural remedies in growing plants one needs a lot of knowledge on the nature, plants, diseases, pest, stresses from the environment and a lot more.**

**Whenever you are in trouble send an e-mail to:  
[info@asan.si](mailto:info@asan.si) or [mineral@asan.si](mailto:mineral@asan.si).**



More information on [www.mineralnutrient.eu](http://www.mineralnutrient.eu)