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Active Colloidal Silver

How does Colloidal Silver Work?

Silver naturally holds onto oxygen molecules which readily react with the sulfhydryl (H) groups that surround bacteria and viruses. This blocks cellular respiration from occurring in the offending bacteria and has a sterilizing effect on the body. Silver molecules can also bind directly to bacteria and virus cell membranes causing a blockage in the reproduction of these infiltrators. Silver can cling to the DNA of bacteria, keeping them from replicating.

Colloidal silver near a virus, fungus, bacterium or any celled pathogen disables its oxygen within minutes, the pathogen suffocates and dies, and clears the body through the lymphatic system.

INTERNAL USE: Ingestion, allow the silver suspension to stay in the mouth, swish it around and let it reside under the tongue (sublingually) for at least one or two minutes. In the first five days of acute conditions it is recommended that the 30 ml daily dose be split into equal quantities, about one tablespoon or 15 ml each morning and night. The colloidal silver may taste a little bitter and metallic. It is important to drink at least six glasses of pure water daily to assist in the elimination of destroyed pathogens.

INHALATION: Colloidal silver water may be nebulized as a mist with our optional nebulizer, and inhaled into the lungs for respiratory ailments, and for fast absorption into the blood through lung tissues.

EXTERNAL USE: Apply directly to cuts, cold sores, burns, open sores and other lesions. Dab on eczema, mosquito bites, acne and dandruff. Colloidal silver works best when placed in contact with the source of infection. Spray on athlete's foot and diaper rash. Use as a gargle for sore throats, or as a mouth rinse. Use as drops in the eyes and ears. For sinusitis, draw in through the nostrils. Spray on contaminated surfaces.

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AMAZING BENEFITS OF COLLOIDAL SILVER

Colloidal silver is the single most effective bactericidal and antiviral agent known. Silver complements the body's immune system by providing exceptional protection against pathogenic bacteria, fungi, parasites and viruses. Colloidal silver water has been used for centuries by aristocracy to treat many conditions, both internally and externally, as follows:

- treatment of hundreds of different disease causing pathogens
- professionally made has no adverse contraindications or side effects does not interfere with other medicines silver resistant strains of pathogens are not known to develop or exist can be taken orally for adults, children, babies, pets and animals
- use for water, wine, milk and other beverage preservation
- can be applied directly to cuts, burns, bites, acne, sores, lesions, etc. useful for oral, ear, nose, eye, and throat health. Use colloidal silver in topical lotions, creams, salves, with aloe vera, etc.

It is an effective all natural antibiotic, disinfectant, and germ fighter that kills bacteria, fungi and viral infections. All metals are antimicrobial, but silver, as the most conductive, carries more electron charge (Zeta Potential) to block all pathogens.

Most people don't hear about colloidal silver water since this remarkable treatment is suppressed because it is not in the patentable interests of the pharmaceutical industry.

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SILVER - A POWERFUL ANTIBIOTIC

Silver is a very powerful natural antibiotic. It has been used for thousands of years in its less effective solid form, but in more recent times it has been used in its colloidal form without any side effects. It is a catalyst, disabling the particular enzyme that all single celled bacteria, fungi and viruses use for their oxygen metabolism. This means they suffocate or starve. Many others are bacterial destroyed because the electric charge (zeta potential) on the silver particles cause their internal protoplast to collapse, and still others are rendered unable to reproduce.

A colloid refers to a substance that consists of ultra fine particles that do not dissolve, but remain suspended in the purified water. These ultra-pure particles are larger than most molecules, but so small they cannot be seen by the naked eye. Colloidal silver is not a chemical compound containing silver, but a pure metallic silver in clusters in the size range of less than 10 nm (nanometer). They are held in suspension by a small electric charge (zeta potential) on each atom.

Colloidal silver can be administered in many ways - orally, gargling, rectally, vaginally, nasally, intravenously.

Common uses for colloidal silver are:

Wound dressings - adding colloidal silver to wounds and dressings prevents infection.

Endotracheal tubes - using colloidal silver in these tubes prolong the time bacteria are not present. Surgical masks - silver coated masks result in major reductions in the transmission of E. coli and S. aureus.

Clothing fibers - adding colloidal silver to clothing keeps killing bacteria even after many washings. Drinking water - colloidal silver disinfects drinking water and other beverages.

Food packaging - Silver helps to extend shelf life of foods and fight bacteria around the food.



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APPLICATIONS OF COLLOIDAL SILVER

Colloidal silver has antibacterial, antiviral and antiinflammatory properties.

Use colloidal silver daily for:

- Wound care / skin health
- Pink eye / ear infections Sinusitis
- Common throat ailments such as strep
- Daily silver has been shown to boost the immune system to fight infection
- Swishing silver in the mouth has been shown to prevent plaque buildup, tooth decay, and bleeding gums
- Applying silver products on cuts, sores, and boils promotes healing
- Applying silver to rashes can aid in soothing itches
- Silver can combat food poisoning silver has the ability to kill mold and mildew on surfaces throughout the home
- Use to wash fruits and vegetables
- Pneumonia - antibiotics are limited in their ability to fight bronchitis or pneumonia.
- Colloidal silver can fight a variety of pathogens. It works when ingested internally or when breathed it into the lungs using a nebulizer.

Babies, infants and children: Colloidal silver is safe to use for common problems such as: chicken pox, colds and flu, croup, diarrhea, ear ache, enlarged tonsils and adenoids, eye infections, fever, German measles, mouth ulcers, mumps, nappy or diaper rash, oral thrush, pink eye (conjunctivitis), pimple rash (impetigo), sties, whooping cough.

Animal, pet and veterinary applications: Colloidal silver can be used for all kinds of pets, including dogs, cats, horses, reptiles, birds, rabbits, hamsters, goats, ferrets, cows, fish, and many more veterinary applications. It is a wonderful pet care immune system booster. Also use for sanitation and eliminating pet odors.

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INFORMATION ABOUT COLLOIDAL SILVER

In recent decades the world has experienced a number of epidemics such as the Bird Flu, Swine Flu, MERS and SARS. This trend is approaching pandemic proportions with recent news about the “killer Chinese coronavirus”, 2019-nCoV, recently renamed ‘Covid-19’ by the WHO. It is vitally important to investigate methods of mitigating and treating this disease, beyond or in addition to conventional microbiology and laboratory vaccine developments. Colloidal silver is the way, since it can be used effectively as both a remedy and a preventive.

Viruses such as the Coronavirus (Covid-19) are very small, sub-microscopic entities that are about 1,000 times smaller than bacteria. A virus must have a host cell or bacteria in which to live and make more viruses. Viruses cannot function outside a host cell and are opportunistic in looking for a cell to invade. They can enter the body through the nose, mouth or breaks in the skin. However, the Coronavirus preferentially seeks out lung cells.

Upon entering the lung cells, the Covid-19 virus particle attaches to a host cell and releases genetic instructions into the cell that interacts with the host cell’s enzymes to make new virus particles. These newly created viruses can break out of the cell and are free to infect other parts of the body. Colloidal silver is an effective method of neutralizing or in fact killing the Coronavirus. Colloidal silver reacts with the oxygen metabolizing enzyme in the cell wall, effectively blocking its ability to receive oxygen that rapidly kills the self-replicating process of the virus – the virus has effectively been asphyxiated.

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INFORMATION ABOUT COLLOIDAL SILVER

Colloidal silver can be used as a remedy, as described above in killing the Coronavirus. An effective way of doing this is through inhalation, since the Coronavirus selectively seeks lung cells. Colloidal silver water can be used in nebulizers, atomizers and ultrasonic humidifiers to produce a fine mist of moist, silver laden air for inhalation into the lungs. Depending on the device, the face and nose can be positioned close to the source of the mist, or some devices have special masks and fittings to place over the nose. Breathe deeply and inhale the colloidal silver laden mist in an effort to kill or mitigate the virus.

Internal use – ingestion, take one tablespoon or 15 ml each morning and night. Allow the silver suspension to stay in the mouth, swish it around and let it reside under the tongue (sublingually) for at least one or two minutes.

For acute conditions, take it more frequently. It is important to drink at least six glasses of pure water daily to assist in the elimination of destroyed pathogens. Colloidal silver can also be used as a preventive measure for topical use as a spray in a convenient finger pump spray bottle. Apply directly to cuts, cold sores, burns, open sores and other lesions. Colloidal silver works best when placed in contact with the source of infection. Spray on hands and face, and surfaces for disinfection.

External use - spray, wash or immerse masks, wound dressings, handkerchiefs, clothing and endotracheal tubes in silver water to disinfect them.

Food packaging – silver helps to extend shelf life of foods and fight bacteria around the food, and disinfects water and other beverages.

Colloidal silver has no adverse contra indications or side effects, and does not interfere with other medicines. Silver resistant strains of pathogens are not known to develop or exist. Can be used for adults, children, babies, pets and animals. Many people do not hear about colloidal silver since this remarkable treatment is considered a “natural”, unpatentable method that is not in the interests of the pharmaceutical industry.

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INFORMATION ABOUT COLLOIDAL SILVER

Doyin Holistics offers a broad range of colloidal (nano) silver (and other metal) for every type of disinfection and treatment application. There are a number of characteristics about the manufacture and use of colloidal silver to consider. A very important characteristic is particle size. The general term “colloidal” typically means a particle size range of less than one micrometer ($1\ \mu\text{m}$ or $6-10\ \mu\text{m}$), suspended in a liquid. However, recent manufacturing technology permits the silver particles to be even smaller – in the “nano” range, where one nanometer is one thousandth of a micrometer ($1\ \text{nm}$ or $6-10\ \text{nm}$). It is important to have a silver particle size range of less than $10\ \text{nm}$ to ensure a stable, consistent, high purity suspension, and for disinfection efficacy.

It is also important to have this small size range so that the Colloidal silver can pass through the blood brain barrier (BBB) – a highly selective semi-permeable border that separates the circulating blood from the brain and extracellular fluid in the central nervous system. This permits treating brain disorders such as meningitis and other diseases with colloidal silver, where regular antibiotics cannot penetrate.

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INFORMATION ABOUT COLLOIDAL SILVER

Dental infections can cause cancer and more. Only daily colloidal silver can penetrate deep inside the cells to protect us. 97% of all terminal cancer

patients previously had a recent root canal procedure. Root canaled teeth are essentially "dead" teeth that can become silent incubators for highly toxic anaerobic bacteria that can make their way into your bloodstream to cause a number of serious medical conditions, many not appearing until decades later. Many chronic degenerative diseases, including Alzheimer's, originate from infected teeth and gums, the most frequent being heart, brain, joints and circulatory diseases. 16 different causative bacterial agents have been found for these conditions and most can cross the blood brain barrier (BBB). Most antibiotic molecules are too large (over 20 nm) to cross the BBB. Highest quality small colloidal silver nanoparticles can. Dental infections can cause cancer and more. Only daily colloidal silver can penetrate deep inside the cells to protect us. 97% of all terminal cancer patients previously had a recent root canal procedure. Root canaled teeth are essentially "dead" teeth that can become silent incubators for highly toxic anaerobic bacteria that can make their way into your bloodstream to cause a number of serious medical conditions, many not appearing until decades later. Many chronic degenerative diseases, including Alzheimer's, originate from infected teeth and gums, the most frequent being heart, brain, joints and circulatory diseases. 16 different causative bacterial agents have been found for these conditions and most can cross the blood-brain barrier (BBB). Most antibiotic molecules are too large (over 20 nm) to cross the BBB. Highest quality small colloidal silver nanoparticles can.

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SILVER PROTECTS AGAINST ALZHEIMER'S DISEASE

More articles are appearing which connect Alzheimer's with long term bacterial or viral infections and genetic predisposition. Organisms responsible include Borrelia (Lyme), herpes, chlamydia, all of which can be inactivated by colloidal silver. We all should be taking our minimal daily requirement of silver of 300 micrograms. However CS quality is important. Nanoparticles of CS must be small enough (less than 20 nm) to pass through the blood brain barrier and have strong enough Zeta Potential to inactivate the vicious pico-viruses and prions (Mad Cow Disease). Our professional colloidal generators produce the highest Zeta Potential in our industry.



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INFORMATION ABOUT COLLOIDAL SILVER

We know that colloidal silver effectiveness is very dependent on the electrical charge on each nanoparticle, called Zeta Potential. Recent colloidal research from King Abdullah University of Science and Technology (KAUST) is revealing how nanoparticles work as catalysts to inactivate viruses and bacteria. We at Doyin Holistics for several years have included high frequency waveforms in our technology to produce a range of the smallest nanoparticles down to mono atomic size in order to combat the most vicious small viruses which cause brain damage. However, it now appears that this range must include slightly larger particles carrying a specific optimal number of atoms unique to each colloidal mineral, which for silver is 25. According to KAUST "Nanoparticles with an atomically precise number of constituent atoms have properties based on the particular number of atoms of each individual nanoparticle with unique energetic states and catalytic properties. These atomically precise nanoclusters are the key to understanding catalysis. This allows the clusters to remain in an energetically excited state for a long time whereby the electrons of the metal atoms are shared across the entire cluster, having unique optical and electronic properties". KAUST also found that surrounding silver nanoclusters with negatively charged hydrogen rich shells offers new opportunities in catalysis and opto-electronics. "Simple organic citrate ions, derived from readily available citric acid, can interact with and stabilize colloidal gold nanoparticles to yield the stable nanoparticles needed as powerful catalysts and anti cancer agents". The unique healing properties of the combination of Silver and gold, called Electrum by ancient alchemists, may be explained.

Altering a single atom in a silver nanocluster considerably changes its properties, creating an exciting opportunity to design these clusters. Replacing a single atom in a cluster of 25 silver atoms with one gold atom fundamentally changes its properties.

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INDEPENDENT LABORATORY ANALYSIS

We sent samples for Independent laboratory analysis of our colloidal products made using our high tech commercial grade colloidal generator, charged at 48 volts for 48 hours, with 2 large 2" x 6" pure silver and gold electrodes, alternating polarity, constant current stirrer, spinning double neodymium magnet and, pulse modulation with proprietary waveforms. Results showed a stable clear colloidal silver product with 45.4 parts per million (ppm). The TEM picture (Transmission Electron Microscopy) shows spherical particles in a range of sizes from 2 to 8 nm. This is an impressive achievement due to the high frequencies we use to induce a high Zeta Potential. CS at this high concentration would generally become cloudy due to agglomeration of nanoparticles. Our product was also tested and found to be highly potent against MRSA.

The following are unedited reports for our Colloidal Silver and Colloidal Gold:

SILVER: These spectacular results show that the silver particle size is no more than 8 nanometers and furthermore is demonstrated to be active against methicillin resistant staphylococcus aureus (MRSA) within 8 minutes. In this experiment, the efficacy of colloidal silver and colloidal gold was tested against the bacteria staphylococcus aureus at four and eight minutes. The subject sample BP (24.20 ppm), showed signs of antibacterial activity equally against both the S1 and S2 strains. At four minutes BP began to inhibit the bacterial growth, while at eight minutes BP significantly reduced the bacterial growth.

Gold Results for our colloidal gold show that nanoparticles of our sample #1 have size of 2-3 nm. Concentration could be increased from 0.56 ppm with charging for 10 to 20 days instead of only 2 days.

These impressive high quality results are likely due to the use of the above special conditions, which we have been researching for the last 20 years. Research literature indicates that charged nano sized particles smaller than 10 nm exhibit greatly enhanced antimicrobial activity compared with larger particles over 100 nm. Quantum phenomena and non-locality effects on consciousness, mitochondria and DNA may also be playing a part at these small dimensions. Particles of this small size will exhibit Quantum effects.

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WHY COLLOIDAL?

Colloidals are the smallest particles that matter can be divided into while still keeping its individual characteristics, without going atomic, becoming an ion and locked into an inactive sulphate, oxide, chloride or fluoride molecule. They are nanoparticles in permanent suspension because of the Zeta Potential electrical charge (up to 60 millivolts), on each particle causing mutual repulsion, preventing aggregation into large ineffective particles. Ions have a much smaller charge which rapidly becomes neutralized in the body.

SIZE MATTERS

The smallest nanoparticles come from the largest electrodes, with the largest area, such as our 2" x 6" sheets, with area = 12 sq inches. This is why we never use wires or rods. A rod of length $H = 6"$ of #12 gauge has a diameter of $D = 0.081"$ (2 mm) which has a surface area of only $\pi DH = 3 \times 0.08 \times 6 = 1.44$ sq inches. Nanoparticle size is directly dependent on Current Density = milliamperes per square inch of area. This means that if current is too large or area too small, then the electrodes will be overdriven producing large ineffective particles and ions.

The more effective nanoparticles range in size from less than 1 nanometer to 10 nanometers, which is 30-60 times smaller than the wavelength of light (300-600 nm). Consequently they cannot be seen with any light microscope and will not give a Tyndall Effect using a laser beam. If there is a color or Tyndall, then those particles are too large to be fully effective against the small more dangerous viruses which cause neurological damage. The small size gives colloidal minerals enormous surface area, and special properties of absorption for the human or animal body, as opposed to rock and shell based minerals, which are always combined with some other radical, such as in oxides, and have no Zeta Potential charge. Dr Joel Wallach says "One teaspoon of colloids can have a total surface area of over 127 acres".

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Electrical Charge (Zeta Potential)

Because of our proprietary technology, which includes magnetic vortex, high frequencies, current control, alternating polarity, our nanoparticles have been measured to carry a very high Zeta Potential electrical charge of 60 millivolts.

According to Wikipedia this potential is in the highest range to ensure excellent long-term stability.http://en.wikipedia.org/wiki/Zeta_potential.

Absorption and Excretion

Superior absorption is another characteristic of colloids, since the finely divided colloidal particles having a large surface area exposed to interact with our cells and still able to penetrate the **Blood Brain Barrier**. Excretion of colloidal nanoparticles is all too rapid, so that ingestion should be done on a daily basis.

According to Dr Joel Wallach "Colloidal minerals are truly the most efficient way to get your minerals. You can absorb 98% of them. They are liquid. They have a small particle size. To give you a comparison: a red blood cell is 7 microns. A colloidal mineral particle is 0.01 micron (or less): that is 1/7000th the size of a red blood cell. Minerals move around in our bodies through our blood, and we store minerals in our cells. The small size of colloidal minerals is ideal. The electrical charge means they stay in solution or suspension- they don't settle out. They are very absorbable. Instead of having to break down bulky, compressed tablets or gelatin capsules, the body can immediately go to work using your self-made colloidal minerals. Which will not interfere with any other supplemental or therapeutic program. Instead, they assist any and all diets, medication or herbs to work faster and more efficiently".

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Dangerous Viruses

Viruses play a role in causing some cancers and may be responsible in Alzheimer's, MS, Parkinson's, diabetes, chronic fatigue (Epstein-Barr Virus), and mononucleosis. They can be so small as to enter and infect bacteria. Even smaller, <20 nm, are the prions which cause Mad Cow Disease and possibly other brain disorders. There is considerable evidence that silver nanoparticles of less than 10 nanometers are likely to inactivate most viruses and prions.



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Importance of Silver in Agriculture

A Google search reveals almost 500,000 references to the agricultural benefits of electrically activated silver. Colloidal silver is being used to stimulate growth and to protect fruit trees, plants, beans, vegetables. One of our customers in Panama is spraying his Arabica coffee plants against Coffee Rust fungus and Pseudomonas while another in Florida spraying orange trees. It seems that plants (even cut flowers) have an immune system that responds dramatically to electrically activated silver atoms.

Adding colloidal silver and other essential minerals like zinc, magnesium, copper to the soil, is a way of boosting its nutrient content. Unlike pesticides and chemical fertilizers, colloidal silver does not evaporate, leaves no residues and keeps garden plants safe to eat. It kills bacteria, viruses and other pathogens that attack plants, and it also eliminates parasites. A small amount of colloidal silver used in spray application for plants (fruits and vegetables included) has been confirmed as safe for human consumption.

Colloidal silver is a tasteless, odorless, nontoxic, pure, natural substance consisting of submicroscopic clusters of silver atoms, suspended in water by a tiny electric charge on each particle. The molecules size usually ranges from 0.01 to about 0.001 micron in diameter (10 to 1 nanometers). The particles do not settle but remain suspended since the electric charge (Zeta Potential) exerts more force than gravity on each particle. Colloidal is the most bioavailable form of choice since all biological fluids are colloidal and must convert a crystalline salt solution to colloidal before it can be used. Taking our daily trace requirement of 0.5 mg is a powerful adjunct to our immune systems, by killing harmful disease causing organisms, aids healing and has been confirmed to aid in the treatment of cancer and Alzheimer's.

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Importance of Quality

Quality and effectiveness of a colloid is defined as the smallest diameter of silver atoms and molecules (nanoparticles) combined with electrical charge (Zeta Potential).

Most store bought colloidal silver is of poor quality and effectiveness for several important reasons discussed at <http://www.silver-colloids.com/Reports/reports-euro-.html> and at <https://beforeitsnews.com/v3/immigration/2018/2458080.html>.

Accordingly, cultivators should buy our quality nanoparticle colloidal waters. We offer other essential minerals, such as gold ,zinc, copper, magnesium and iron.

Silver Science:

Minerals in the electrolyte ionic inorganic form, such as silver nitrate, are generally caustic and difficult to absorb. The colloidal form is not ionic, does not interact chemically and has long lasting effectiveness. The presence of liquid colloidal silver has benefits for humans by disabling the oxygen metabolism enzyme of a virus, fungus, bacterium or any other single celled pathogen. Within a few minutes, the pathogen suffocates and dies, and is cleared out of the body by the immune, lymphatic and elimination systems. One of the primary colloidal silver benefits is that unlike pharmaceutical antibiotics that destroy beneficial enzymes, colloidal silver leaves these tissue-cell enzymes intact, as they are radically different from the enzymes of primitive single celled life. Thus colloidal silver is absolutely safe for humans, animals, plants and all multi celled living matter.

Colloidal silver has been used in horticulture as an ethylene inhibitor. Because it competes to bind to sites on the ethylene receptors of plants, solutions with silver particles are used by florists to maintain flower freshness. Horticulturists also may use colloidal silver to treat topical fungal infections on plants. When fruits and vegetables are grown on chemical fertilizers, we may not receive the necessary quantity of vitamins, minerals and trace elements which occur naturally. This may result in a decreased immune function over time. Dr. Robert Backer has also found a positive correlation between low silver levels and sickness. Some biochemists suspect that a silver deficiency is possibly one of the main reasons cancer exists and is increasing at such a rapid rate today. Dr. Bjorn Nordstrom of the Karolinska Institute, Sweden, has used silver in his cancer treatment for many years. He says it has brought on rapid remission in many patients whom other doctors had given up on.

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How to use Colloidal Silver

Soaking seeds in colloidal silver before planting, increases germination and reduces mold growth in sprouts. In addition, small amounts of colloidal silver diluted with pure water can be sprayed on soil. The plant may absorb the microscopic silver particles and become more resistant to soil-based pathogens. Treating soil around younger plant roots allows them to grow more vigorously.

Cut Plants and Flowers

Adding colloidal silver to cut plants allows the plant to live longer and prevents it from falling victim to bacteria, viruses and fungi. Plants placed in water with colloidal silver added to it wither and die less than those placed in normal water which may contain bacteria and pathogens. Spraying a small amount of colloidal silver onto the stem and leaf surfaces, allows the plant to absorb silver ions and prevent fungi, viruses and bacteria from colonizing the outer surface. The colloidal silver is absorbed into the plant and as a result, kills any pathogens inside itself as well as any embedded insect eggs. However, colloidal silver does not affect mature insects, therefore pollinators such as bees and ladybugs are not harmed.

In our experience, adding colloidal silver to plants and sprouts has decreased the growing time for maturation. These plants and sprouts also grow to be significantly bigger than those untreated with colloidal silver.

Cut flowers remain fully alive for many days. Colloidal silver can be used to greatly extend the time before decaying begins on cut flowers. Probably due to the bacteria and other pathogens in water, cut flowers will tend to wither and die much more quickly than cut flowers that are placed in water which has colloidal silver added to it. The colloidal silver not only kills the pathogens in the water but is subsequently absorbed into the flowers and taken to the cellular level where colloidal silver works internally to kill remaining pathogens and to stimulate the plant's immune system.



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REFERENCES:

20% of California marijuana products failing tests for potency and purity, Friday, September 14, 2018 Testing companies licensed by the state are finding unacceptable levels of pesticides, solvents and bacteria, including E. coli and salmonella.

<https://beforeitsnews.com/v3/immigration/2018/2458080.html>

Coffee rust is a disease with the power to cripple, or even wipe out, the country's national product,

<http://www.bbc.com/future/story/20171106-the-disease-that-could-change-how-we-drink-coffee>



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Nano silver as a potential biostimulant for plants – A review

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<http://www.worldscientificnews.com/wp-content/uploads/2017/08/WSN-863-2017-180-192-3.pdf>

ABSTRACT

Nanotechnology, as one of the most promising fields of science, brings unlimited possibilities of development in many areas, including agriculture and horticulture. Nano-silver is one of the nanomaterials that its effect on plants are under investigation nowadays. Numerous experiments conducted by scientists evaluated the possibility of using nano silver as a potential plant growth regulator for crops, and also as a means to extend the post-harvest longevity of cut flowers and ornamental foliage. This paper summarizes a comprehensive and systematic study of the data on nano silver activity and its application in horticulture, postharvest handling and storage of cut flowers and florist greens.

Effect Of Nano Silver On Crops

This extensive review gathers information on nano silver provided by recent research, especially when it is used in horticulture. Applications of nano silver resulted in an increase in plant height, leaf number, root weight, biomass of plant, seed germination, seed yield, quality of fruit, stem length, diameter of canopy area, root length, growth and development of explants under in vitro culture condition and number of protoplasts. The addition of an appropriate nano silver concentration increased chlorophylls content, carotenoids, flavonoids, photosynthetic quantum efficiency, enzymatic activity, content of para hydroxybenzoic acid, α -terpinyl acetate, as well as antioxidative enzymes activities. Experimental results on the use of nano silver in crops are summarized in a Table.



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Gardeners: Colloidal silver kills plant fungus, produces larger and healthier crops

A solution of 10 ppm strength colloidal silver mixed at the rate of 1 pint colloidal silver to 2.5 gallons of water and 1/4 teaspoon household detergent was applied to affected trees (in various states of challenge, from 10% to 50% foliage involvement). Visually detectable improvement manifested within 48 hours. Marked improvement and pathogenic stabilization evidenced within 72 hours. New leaf growth started to appear within 7 days.

<https://thegrownetwork.com/colloidal-silver-kills-plant-fungus-produces-larger-and-healthier-crops/>

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The Effect of Nano-Silver Liquid against the White Rot of the Green Onion Caused by *Sclerotium cepivorum*:

Nano silver treated green onion plants, once harvested, were demonstrated to have grown larger and to weigh more than the non treated green onion plants. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3741593/>

In this breakthrough study, published in the March 2010 issue of the journal *Mycobiology*, researchers found that applying varying levels of silver nanoparticles to the roots of green onion plants completely eradicated *Sclerotium cepivorum* fungal infections known to destroy the plants.

Not only did the application of silver nanoparticles destroy the pathogenic plant fungus, but according to the study authors, it caused no harm whatsoever to beneficial soil microbes needed by the green onion plants for growth, nor was there any negative change in the soil chemistry or composition. What's more, the nanosilver-treated green onion plants, once harvested, were demonstrated to have grown larger and to weigh more than the non-treated green onion plants. Finally, the study researchers pointed out that the more they increased the use of nanosilver on the green onion plants, the lower the level of silver being absorbed into the plant itself. The researchers stated, "When the amount of nano-silver was calculated in the plants grown in nano-silver treated soil, it was found that the concentration of nano-silver used for treatment and the concentration of nano-silver found in the plants was inversely proportional." In other words, the plants themselves apparently reduce absorption of the nanosilver when higher levels are used on them to control the plant blight.

The conclusion drawn by the study researchers was staggering in its implications: "Nano silver liquid for the prevention of various plant pathogenic fungi is highly recommended to farmers. Additionally, the use of nano silver does not cause any harm to human beings, and it is safe for the environment and agricultural products. In conclusion, we can say that by using nano silver liquid, environmental pollution and the excessive use of chemical compounds in the field can be reduced. It is expected that the application of nano silver at low concentrations will be economic, eco friendly, and decrease farm management costs."



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NEW STUDY

Silver Nanoparticles do NOT harm the environment. "The Impact of Silver Nanoparticles on the Composting of Municipal Solid Waste," published in December 2013 in the journal Environmental Science & Technology, "the composting of municipal solid waste" and found that "...functional performance was not significantly affected..." when silver nanoparticles were added.

<http://thesilveredge.com/new-study-silver-nanoparticles-do-not-harm-environment/#.UzNqpVldV8E>

Marijuana plants show very heavy increase in growth and production with live silver

"Experiments were made with tomatoes and medical marijuana. Both produced about six times the weight as well as the sinsemilla in the marijuana. The sinsemilla is the THC product growers really want," says Mr. Marvin Lee Robey, of live silver. "Plants were very healthy and tomatoes had excellent flavor." Plants raised in soil also produced over five times the weight of control plants when the plant roots were watered with one cup of electrically charged silver when the plants were ten inches high; similar increased growth and production of green beans and peas. Tests are continuing. The strength of the electrical charge on the silver seems to be the controlling factor. The stronger the electrical charge the greater the growth.

https://www.send2press.com/wire/plants-show-very-heavy-increase-in-growth-and-production-with-live-silver_2014-01-0113-002/

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Making Your Own Feminized Marijuana Seeds

Feminized seeds are found to be the newest kind of marijuana seeds. The secret for creating your own feminized seeds is the substance called colloidal silver.

<https://www.cropkingseeds.com/making-your-own-feminized-marijuana-seeds/>

How To Make Feminized Marijuana Seeds

Spray them with silver water every day after they have reached their flowering stage, my free marijuana grow guide at this link for more growing tips.

<http://www.ilovegrowingmarijuana.com/how-to-make-feminized-marijuana-seeds/>

A Guide To Colloidal Silver How does Colloidal Silver work on cannabis plants

<https://www.rollitup.org/t/a-guide-to-colloidal-silver.865536/>

Russian Report on CS

Silver water is used successfully by gardeners and farmers in Russia to improve and preserve the harvest, increase immunity of plants to harmful microorganisms and extend the life of cut flowers.

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CS soaking tubers and seeds before sowing:

Soaking in a silver water tubers and plant seeds before sowing increases the immunity of plants to pathogens and increases the germination of seeds. For the soaking of seeds and tubers, use the water of the same concentration as for soaking seeds for germination. Soaking is done for 2-3 hours.

Watering and spraying plants and seedlings

When watering the plants with silver water, disinfection of the soil takes place against most microorganisms, mold, fungi. To use the irrigation water prepare as follows: use concentrated (30-50 ppm) silver water. Do not dilute CS water because unlike bulk water, the CS water is hexagonally structured and carries an electrical charge (Zeta Potential).

Safety of domestic preparations

Silver ions inhibit microorganisms that cause fermentation and mold spores. Therefore, home-made, cooked in a silver water - pickles, jams, composts, etc. - Are kept much longer and do not lose their flavor.

Long-term preservation of cut flowers up to 2-3 weeks

Silver water extends the life of cut flowers. Use cut flower water of the same concentration as for watering plants. Change the water everyday.