

Magna-Bon[®]

AGRICULTURAL CONTROL SOLUTIONS

CS 2005

Our copper, sulfate pentahydrate in-solution formula is OMRI listed with systemic capabilities that has proven results combating disease in copper resistant strains . We're environmentally friendly by using less than an 1/8 lb to 1/4 lb per acre of metallic copper to combat agricultural diseases for a variety of specialty fruits, vegetables, citrus and tree nuts.

Less Copper, More Power!

Made in the USA

(800) 845-1357

www.MagnaBon.com



When applied to growing fruits,vegetables, citrus and tree nuts the following diseases are controlled by:

CS 2005

Alternaria Blight	Coffee Berry Disease	Pseudomonas Blight
Alternaria Leaf Spot	Collar Rot	Pseudomonas flourescens
Angular Leaf Spot	Common Blight	Pseudomonas syringae
Anthracnose	Coryneum Blight (Shot Hole)	Purple Blotch
Apple Scab	Crown Rot	Raceme Blight
Bacterial Blast	Downy Mildew	Red Algae
Bacterial Blight	Early Blight	Red Leaf Spot
Bacterial Canker	Erwinia herbicola	Rhizoctonia Foliage Blight
Bacterial Leaf Spot	European Canker	Rose Bloom
Bacterial Speck	Fire Blight	Scab
Bacterial Spot	Fruit Rot	Septoria Leaf Blight
Bacterial Stalk Rot	Gray Leaf Mold	Septoria Leaf Blotch
Bacterial Stem Canker	Greasy Spot	Septoria Leaf Spot
Ball Moss	Gummy Stem Blight	Septoria Late Blight
Black Leaf Spot	Halo Blight	Shoot Blast
Black Knot	Helminthosporium Spot Blotch	Shoot Blight
Black Pitting	Iron Spot	Shuck Rot
Black Pod	Kernel Rot	Sigatoka (Black and Yellow)
Black Rot	Late Blight	Spanish Moss
Blossom Blast	Leaf Blight	Stem Blight
Blossom Brown Rot	Leaf Rust	Tip Blight
Blotch	Leaf Scorch	Walnut Blight
Blue Mold	Leaf Spot	Watermelon Bacterial Fruit Blotch
Botryosphaeria Panicle	Leptosphaerulina Leaf Spot	(suppression)
Botytris Blight	Melanose	White Rust
Brown Rot	Phoma Leaf Spot	Yellow Rust
Brown Spot	Phomopsis	Zonate Leaf Spot
Cane Spot	Phomopsis Twig Blight	
Cherry Leaf Spot	Phyophthora Blight	
Citrus Canker (suppression)	Pink Disease	
Cercospora	Pink Pitting	
Cercospora Early Blight	Pod Spot	
Cercospora Leaf Spot	Powdery Mildew	

CS 2005

FOR USE TO CONTROL BACTERIA AND FUNGI THAT CAUSE SPOILAGE ON AGRICULTURAL COMMODITIES



Ingredients

Copper Sulfate Pentahydrate* (CAS No. 7758-99-8)	19.8%
Other Ingredients	80.2%
Total	100%

*Equivalent to 5.0% metallic copper A Chelated Copper Product

KEEP OUT OF THE REACH OF CHILDREN DANGER/PELIGRO

Si usted no entiende, busque a alguien para que se la explique a usted en detalle
(If you do not understand the label, find someone to explain it to you in detail)

First Aid	
IF IN EYES	Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, and then continue rinsing. Call a Poison Control Center or Doctor for treatment advice.
IF SWALLOWED	Call a Poison Control Center or Doctor immediately for treatment advice. Have a person sip a glass of water, if able to swallow. Do not induce vomiting unless told to do so by the Poison Control Center or Doctor. Do not give anything to an unconscious person.
IF ON SKIN OR CLOTHING	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a Poison Control Center or Doctor for treatment advice.
IF INHALED	Move a person to fresh air. If person is not breathing, call 911 or an ambulance, and then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a Poison Control Center or Doctor for treatment advice.
Have the product container or label with you when calling a Poison Control Center or Doctor or when going for treatment. You may also contact CHEMTREC 1-800-424-9300 for medical treatment advice. NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.	

EPA REG. NO. 66675-3
Lot #:

Net Contents: 2 U.S. Gallons (1 U.S. Gallon =3.78 Liters) 64 U.S Ounces 9.9 lbs. per U.S. gallons (1.188 kg/l)

EPA Est. No. 66675-FL-001
89146-CA-001

FOR EMERGENCY ASSISTANCE CALL CHEMTREC-1-800-424-9300

STORAGE AND DISPOSAL

Prohibition: Prohibition: Do not contaminate water, food or feed by storage or disposal. Storage: Store in a safe place away from PETS AND KEEP OUT OF THE REACH OF CHILDREN. Store away from excessive heat. CS 2005 will freeze. Always keep container closed. Store CS 2005 in its original container only. [Bulk CS 2005 shall be stored and handled in 316L stainless steel, fiberglass, PVC's, polypropylenes or plastic equipment. Keep away from galvanized pipe and any nylon storage handling equipment. Pesticide Disposal: Excess CS 2005 should be disposed of through label use. Do not contaminate lakes, rivers or streams as this may cause fish kill. Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance. In the event of a spill, neutralize with limestone or baking soda before disposal. Concentrate may deteriorate concrete.

Container Disposal: Please see page 10, of this label, for Container Recycling and Disposal information

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

DANGER, Corrosive. Causes irreversible eye damage. Harmful if swallowed. Do not get in eyes or on clothing. Wear protective eyewear (goggles, face shield or safety glasses). Wash thoroughly with soap and water after handling and before eating, drinking chewing gum or using tobacco. Remove and wash contaminated clothing before re-use.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish and aquatic invertebrates and may contaminate water through runoff. This product has potential for runoff for several months or more after application Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

FOR TERRESTRIAL USES: This pesticide is toxic to fish and aquatic vertebrates and may contaminate water through runoff. Do not apply directly to water or areas where surface water is present or to intertidal areas below the mean high mark. Do not contaminate water when disposing of equipment washwaters or rinsate. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. This product may contaminate water through runoff. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Waters treated with this product may be hazardous to aquatic organisms. Treatment of aquatic weeds and algae can result in oxygen loss from decomposition of dead algae and weeds. This oxygen loss can cause fish and invertebrate suffocation. To minimize the hazard, do not treat more than 1/2 of the waterbody to avoid depletion of oxygen due to decaying vegetation. Wait at least 10 to 14 days between treatments. Begin treatment along the shore and proceed outwards in bands to allow fish to move into untreated areas. Consult with the State or local agency with primary responsibility for regulating pesticides before applying to public waters, to determine if a permit is required. Certain water conditions including low pH(<6.5), low dissolved organic carbon (DOC) levels (3.0 mg/L or lower), and "soft" waters(i.e. alkalinity less than 50 mg/L), increases the potential acute toxicity to non-target aquatic organisms. Drift and runoff may be hazardous to aquatic organisms in waters adjacent to treated areas.

GENERAL INFORMATION

CS 2005 IS A COPPER SULFATE PENTAHYDRATE FORMULATION USED TO CONTROL BACTERIA AND FUNGI THAT CAN CAUSE SPOILAGE ON AGRICULTURAL COMMODITIES.
Using water containing moderate to high amounts of sulfur may cause CS 2005 to neutralize. Whenever possible, use a compatibility jar test before mixing a whole tank.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

FOR USE TO CONTROL BACTERIA AND FUNGI THAT CAUSE SPOILAGE ON AGRICULTURAL COMMODITIES: To use CS 2005 as a systematic formulation to control bacteria and fungi that cause spoilage on agricultural commodities, the following directions apply. This pesticide is toxic to fish and aquatic invertebrates. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and permitting authority has been notified prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment authority. For guidance contact your State Water Board or Regional office of the EPA. Do not contaminate water when disposing washwaters or rinsate.

GENERAL INSTRUCTIONS

CS 2005 may be applied with any type of application equipment that gives uniform coverage of all foliage, including ground, aerial and low volume sprayers as specified on this label. Equipment used for application should be PVC or 316L stainless steel. CS 2005 is compatible with most fungal and insecticidal biopesticides when applied at least two (2) days before or after application of the bio-pesticide.

Phytotoxicity - Although CS 2005 has been tested on a wide variety of fruits, vegetables and nuts without phytotoxicity, there could be some varieties and cultivars that because of environmental factors and stages of growth could possibly foster systems. The per acre use rate of CS 2005 is applicable for dilute spraying. Depending on the equipment used and the specific crop, the spray volume applied per acre will differ. Refer to the Minimum Recommended Spray Volume Table. Complete spray coverage is essential to assure optimum performance from CS 2005. When treating by aerial application or with low volume application equipment, unless you have had specific previous experience, it is advisable to test for compatibility and tolerance to crop injury prior to full scale commercial utilization. Consult CS 2005 label for specific rates and timing of application by crop. Where application rates and intervals are provided in a range (e.g., 2-4 fluid ounces and 7 to 10 days) the higher rates and shorter spray time intervals are recommended when rainfall is heavy and/or disease pressure is high. Use the higher rates for large mature tree crops. The use of a surfactant, such as Cell-U Wett™ is acceptable for plants having waxy or hairy surfaces. CS 2005 works via surface contact with the plants and materials being treated. It is important to ensure that all surfaces are thoroughly wetted. CS 2005 does not produce any visible residue or have a distinct odor. It does have a residual, especially if applied with a surfactant.

SPECIAL PRECAUTIONS

Do not mix with acidic compounds such as Alliette™ within 14 days before or after application of same.

This product may be reactive on masonry and metal surfaces such as galvanized roofing. Avoid contact with metal surfaces. Do not spray on cars, houses, lawn furniture, etc. Environmental conditions such as extended periods of wet weather, acid rain, etc., which alter the pH of the leaf surface may effect the performance of CS2005 resulting in the possible phytotoxicity or loss of effectiveness.

Do not mix with pot ash.

It must be determined in the selection process if proper application equipment is available and if the waste associated with its use can be properly handled. Materials used on the construction of application equipment is also an important factor as agricultural chemicals are often reactive with soft metals such as aluminum and even some synthetic materials such as plastics, rubbers, etc.. Therefore it is necessary when working with the equipment containing these materials, that they are thoroughly flushed with clean water after each days use.

PERSONAL PROTECTION EQUIPMENT

Personal Protective Equipment: Some materials that are chemical-resistant to this product are listed below. Applicators and other handlers must wear: Long sleeved shirt, long pants, Chemical resistant gloves made of barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinylchloride or viton, protective eyewear, shoes plus socks.

USER SAFETY REQUIRMENTS

Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables exists, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing and other absorbent material that have been drenched or heavily contaminated with product's concentrate. Do not re-use them.

USER SAFETY RECOMMENDATIONS

Users should: Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. User should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. User should remove PPE immediately after handling product. As soon as possible, wash thoroughly and change into clean clothing. Wash the outside of gloves before removing. As soon as possible wash thoroughly and change into clean clothing. Follow manufacturer's instructions for cleaning maintaining PPE if no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing and other absorbent material that have been drenched or heavily contaminated with the product's concentrate. Do not reuse them.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Workers Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, greenhouses and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), notification to workers, and restricted-entry intervals. The requirements in this box only apply to uses of this product that are covered by the Workers Protection Standard. Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 48 hours. PHI is 0 unless noted. Do not enter or allow others to enter until sprays have dried. PPE required for early entry to treated areas that is permitted under Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, water, is: coveralls, protective eyewear, chemical resistant gloves, and shoes plus socks.

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are not within the scope of the Workers Protection Standard for agricultural pesticides, 40 CFR part 170. The WP'S applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses. Do not allow re-entry into treated areas until sprays have dried.

GENERAL CHEMIGATION INSTRUCTIONS

Apply this product only through one or more of the following types of systems: Sprinkler including center pivot, lateral move, end row, side (wheel) roll, traveler, big gun, solid set or hand move; flood (basin); furrow; border or drip (trickle) irrigation and system(s). Do not apply this product through any other type of irrigation systems.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.

If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label prescribed safety device for public water systems are in place.

A person knowledgeable of the chemigation system and responsible for its operation or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise. Posting areas to be chemigated is required when 1) any part of a treated area is within 300 feet of sensitive areas such as residential areas, labor camps, businesses, day care centers, hospitals, in-patient clinics, nursing homes or any public areas such as schools, parks, playgrounds or other public facilities not including public roads, or 2) when chemigated area is open to the public such as golf courses or retail greenhouses.

Posting must conform to the following requirements. Treated areas shall be posted with signs at all usual points of entry and along likely routes of approach from the listed sensitive area. When there are no usual points of entry, signs must be posted in the corners of the treated areas and in English. Signs must be posted prior to application and must remain posted until foliage has dried and soil surface water has disappeared. Signs may remain in place indefinitely as long as they are composed of materials to prevent deterioration and maintain legibility for the duration of the posting period.

All words shall consist of letters of at least 2 1/2 inches tall, and all letters and the symbol shall be in a color which sharply contrasts with their immediate background. At the top of the sign shall be the words **KEEP OUT**, followed by an octagonal stop sign symbol at least 8 inches in diameter containing the word **STOP**. Below the symbol shall be the words **PESTICIDES IN IRRIGATION WATER**. This sign is in addition to any sign posted to comply with the Workers Protection Standard.

CHEMIGATION SYSTEMS CONNECTED TO PUBLIC WATER SYSTEMS

Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. Chemigation systems connected to public water systems must contain a functional, reduced pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete break (air gap) between the flow outlet end of the fill pipe and the top of the overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of liquid back toward the injection. The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where the pesticide distribution is adversely affected. Systems must use a metering pump, such as a positive displacement injection pump (i.e. diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock. Do not apply when wind speed favors drift beyond the area intended for treatment. When mixing, agitation is not necessary. Adjust the pH of the water to 7 or below. If using stickers, spreaders, insecticides, nutrients, etc., add CS 2005 first. If compatibility is in question, use a compatibility jar test before mixing a whole tank. Because of a wide variety of possible combinations which can be encountered, observe all cautions and limitations on the label of all products used in the mixtures. CS 2005 may be added through a traveling system continuously or at the last 30 minutes of solid set or hand moved irrigation systems. CS 2005 readily disperses and needs no agitation.

SPRINKLER CHEMIGATION

The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump. The pesticide injection pipeline must also contain a normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected. Systems must use a metering pump, such as a positive displacement pump (i.e., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock. Do not apply when wind speed favors drift beyond the area intended for treatment. When mixing, agitation is not necessary. Adjust the pH of the carrier water to 7 or below. If using stickers, spreaders, insecticides, nutrients, etc., add the CS 2005 first. If compatibility is in question, use a compatibility jar test before mixing a whole tank. Because of a wide variety of possible combinations which can be encountered, observe all cautions and limitations on the label of all products used in the mixtures. CS 2005 may be added through a traveling irrigation system or at the last 30 minutes of solid set or hand moved irrigation systems. CS 2005 readily disperses and needs no agitation.

FLOOR (BASIN), FURROW AND BORDER CHEMIGATION

Systems using a gravity flow pesticide dispensing system must meter the pesticide into the water at the head of the field and downstream of a hydraulic discontinuity such as a drop structure or weir box to decrease potential for water source contamination from back flow if water flow stops.

Systems utilizing a pressurized water and pesticide injection system must meet the following requirements:

- ▶ The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination back flow.
- ▶ The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of liquid back toward the injection pump.
- ▶ The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- ▶ The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- ▶ The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- ▶ Systems must use a metering pump, such as a positive displacement pump (i.e. diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

When mixing, agitation is not necessary. Adjust the pH of the carrier water to 7 or below. If using stickers, spreaders, insecticides, nutrients, etc., add the CS 2005 first. If compatibility is in question, use a compatibility jar test before mixing a whole tank. Because of a wide variety of possible combinations which can be encountered, observe all cautions and limitations on the labels of all products used on the mixtures. CS 2005 may be added through a traveling irrigation system continuously or at the last 30 minutes of solid set or hand moved irrigation systems. CS 2005 readily disperses and needs no agitation.

DRIP (TRICKLE) CHEMIGATION

The system must contain a functional check valve, vacuum relief valve and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow. The pesticide injection pipeline must contain a functional, automatic, quick closing check valve to prevent the flow of liquid back toward the injection pump. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor pump stops. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected. Systems must use a metering pump such as a positive displacement injection pump (i.e. diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock. When mixing, agitation is not necessary. Adjust the pH of the carrier water to 7 or below. If using stickers, spreaders, insecticides, nutrients, etc, add the CS 2005 first. If compatibility is in question, use a compatibility jar test before mixing a whole tank. Because of a wide variety of possible combinations which can be encountered, observe all cautions and limitations on the label of all products used in the mixtures. CS 2005 may be added through a traveling irrigation system continuously or at the last 30 of solid set or hand moved irrigation systems. CS 2005 readily disperses and needs no agitation.

FOR SPRAY AND SOIL DRENCH APPLICATIONS

Always spray for total foliage coverage. When re-spraying the rates and severity of the disease vary with unforeseen conditions. However, in the event of severe disease, spraying intervals can be shortened to 3 to 5 days. At times, lower rates can be as effective as higher rates and should be tried first. Usually, preventive programs may be maintained at lower rates. Use of low volume spraying is effective against Botrytis and not effective against established powdery mildew and Xanthomonas infections. Also, applications on actively growing tissue may be more effective than applications on dormant tissue.

MINIMUM RECOMMENDED SPRAY VOLUME (GALLONS) PER ACRE WHEN APPLYING CS 2005

CROP	AERIAL	Ground	
		DILUTE	CONCENTRATE*
Vegetables	3	20	30
Field Crops	3	20	30
Small Fruits	5	150	30
Vines	5	150	30
Tree Crops	10	400	50
Citrus	10	125	30

*Pesticide application equipment such as Curtec® or other similar sprayers which are capable of obtaining coverage at low volumes may be used at as low as 20 gpa of spray volume. The following specific instructions are based on general application procedures. The recommendations of the State Extension Service should be closely followed as to timing, frequency and numbers of sprays per season.

FROST INJURY PROTECTION BACTERIAL ICE NUCLEATION INHIBITOR

Application of CS 2005 made to all crops listed on this label at rates and stages of growth indicated on this label, at least 24 hours prior to anticipated frost conditions, will afford control of ice nucleating bacteria (*Pseudomonas syringae*, *Erwinia herbicola* and *Pseudomonas fluorescens*) and may therefore provide some protection against light frost. Not recommended for those geographical areas where weather conditions favor severe frost.

The chart below is used to calculate correct ppm's* of active ingredient (A.I.) per volume of carrier water. These volumes can be used for either conventional or concentrated sprays.

AMOUNT OF CS 2005 PER VOLUME OF WATER FOR PROPER PPM'S* OF APPLIED ACTIVE INGREDIENT (as copper)

ppm's* of A. I.	30 gallons per Acre	50 gallons per Acre	100 gallons per Acre	125 gallons per Acre	250 gallons per Acre	500 gallons per Acre
50	3.85 oz.	6.4 oz.	12.8 oz.	16 oz.	32 oz.	64 oz.
75	5.78 oz.	9.6 oz.	19.2 oz.	24 oz.	48 oz.	96 oz.
100	7.70 oz.	12.8 oz.	25.6 oz.	32 oz.	64 oz.	1 gal.
125	9.6 oz.	16 oz.	32 oz.	40 oz.	80 oz.	1.25 gal.
150	11.5 oz.	19.2 oz.	38.4 oz.	48 oz.	96 oz.	1.5 gal.
200	15.4 oz.	25.6 oz.	51.2 oz.	64 oz.	1 gal.	2 gal.
250	19.2 oz.	32 oz.	64 oz.	80 oz.	1.25 gal.	2.5 gal.

*ppm=parts per million (as copper)

CITRUS

Grapefruit, Kumquat, Lemon, Lime, Orange, Tangelo, Tangarine

Disease	Rate per Acre per 100 gal. of water	ppm's (copper) per 100 gal. of water	INSTRUCTIONS
Brown Rot	30-70 oz.	120-275 ppm	Apply at first indication of rain or first appearance of Brown Rot. Re-apply as needed during wet weather.
Greasy spot, Pink Pitting	25.6- 64 oz.	100-250 ppm	Apply during mid-summer.
Scab	25.6-64 oz.	100-250 ppm	Apply shortly before trees begin to flush. Re-apply at 2/3 petal fall. Re-apply 4 weeks later, if necessary.
Melanose	25.6-64 oz.	100-250 ppm	Apply 2 times per year before the onset of spring and autumn rains.
Canker (Suppression)	12.8-64 oz.	50-250 ppm	Spray flushes 7 to 14 days after shoots begin to grow. Young fruit may require additional applications. Number and timing of applications will be dependent on disease pressure. Under heavy pressure, each new flush of growth should be sprayed. Heavily infected trees should be sprayed with a minimum dosage of 250 ppm with a follow up spray in 7-14 days at 200 ppm.
12.6 lb. ²	7 days ³	3.15 lbs. ¹	

¹Maximum per Application Rate (lbs Cu²⁺/A) ²Maximum Annual Rate (lbs Cu²⁺/A) ³Minimum Retreatment Rate (lbs Cu²⁺/A) *Not Permitted in California Permitted only in Washington State and Oregon**

FIELD CROPS

Crop	Disease	Rate per Acre per 100 gal. of water	ppm's (copper) per 100 gal. of water	INSTRUCTIONS
Alfalfa	Cercospora Leaf Spot, Leptosphaerulina Leaf Spot	19.2-32 oz.	75-125 ppm	Apply 10 to 14 days before each harvest or earlier if disease threatens. NOTE: Spray injury may occur with sensitive varieties such as Lahontan.
		1.12 lb. ²	0.53lb. ¹	
Corn (Field corn, Popcorn, Sweet Corn)*	Bacterial Stalk Rot	19.2-32 oz.	75-125 ppm	Begin treatment when disease first appears and repeat every 7 to 10 days or as needed. Use the higher rates and shorter spray intervals when conditions favor disease.
		4.2 lb. ²	1.05 lb. ¹	
Peanut	Cercospora Leaf spot,	19.2-25.6 oz.	75-100 ppm	Begin spraying at 35 to 40 days after planting or when disease symptoms first appear and repeat at 10 to 14 day intervals or as needed. Reduce sprays to 7 day intervals during humid weather. Use the higher rates when conditions favor disease.
		4.74 lb. ²	0.79 lb. ¹	
Potato	Early Blight, Late Blight	19.2-32 oz.	75-125 ppm	Apply 75 to 125 ppm at 7 to 10 day intervals or as needed starting when plants are 2 to 6 inches high in locations where disease is light. Add up to 32 oz. per acre when disease is more severe.
		25 lb. ²	2.5 lb. ¹	
Sugar Beets	Cercospora Leaf Spot,	19.2-38.4 oz.	75-150 ppm	Begin applications when conditions first favor disease development and repeat at 10 to 14 day intervals or as needed. Use higher rates when conditions favor disease. Addition of a sticker/spreader is recommended.
		7.86 lb. ²	1.31 lb. ¹	
Wheat, Barley, Oats	Helminthosporium Spot Blotch, Septoria Leaf Blotch	19.2-25.6 oz.	75-100 ppm	Make first application at early heading and follow with second spray 10 days later. Use the higher rates when conditions favor disease.
		1.06 lb. ²	0.53 lb. ¹	

¹Maximum per Application Rate (lbs Cu²⁺/A) ²Maximum Annual Rate (lbs Cu²⁺/A) ³Minimum Retreatment Rate (lbs Cu²⁺/A) *Not Permitted in California Permitted only in Washington State and Oregon**

SMALL FRUITS

Crop	Disease	Rate per Acre per 100 gal. of water	ppm's (copper) per 100 gal. of water	INSTRUCTIONS
Blackberry (Aurora, Boysen, Cascade, Chehalem, Logon, Marion, Santiam, Thornless, Evergreen)	Anthracnose, Cane Spot, Leaf Spot, Pseudomonas Blight, Purple Blotch, Yellow Rust	19.2-32 oz.	75-125 ppm	Make fall application after harvest. Apply delayed dormant spray after pruning/training in the spring. If needed, agricultural-type spray oil may be added.
	Anthracnose, Cane Spot, Leaf Spot, Purple Blotch, Yellow Rust 10.0 lb. ²	19.2-32 oz. 7 days ³	75-125 ppm 2.0 lb. ¹	Apply when leaf buds begin to open and repeat when flower buds show white. If needed, agricultural-type spray oil may be added. NOTE: Crop injury may occur if applied to foliage under certain environmental conditions such as hot or prolonged moist periods. Discontinue applications if signs of crop injury appear.
Blueberry	Bacterial Canker	33-51.2 oz.	125-200 ppm	Make application before fall rains and a second application 4 weeks later. Use the higher rates when conditions favor disease.
	Fruit Rot, Phomopsis Twig Blight 8.4 lb. ²	25.6-51.2 oz. 7 days ³	100-200 ppm 2.1 lb. ¹	Dormant Application: Begin applications when bloom buds begin to swell. Make additional applications at 10 to 14 day intervals or as needed before blooms open.
Cranberry*	Fruit Rot	51.2 oz.	200 ppm	Make application in late bloom. Apply one or two additional applications at 10 to 14 day intervals or as needed depending on disease severity.
	Rose Bloom	51.2 oz.	200 ppm	Apply three sprays on 10 to 14 day schedule or as needed as soon as symptoms are observed.
	Bacterial Stem Canker	51.2 oz.	200 ppm	Apply post harvest and gain in spring at bud swell. Apply one or two additional applications at 10 to 14 intervals or as needed depending on disease severity.
	Leaf Blight, Red Leaf Spot, Stem Blight, Tip Blight (Monilinia) 6.3 lb. ²	51.2 oz. 7 days ³	200 ppm 2.1 lb. ¹	Apply delayed dormant spray in the spring. Repeat at 10 to 14 day intervals or as needed through pre-bloom.
Currant,* Gooseberry*	Anthracnose, Leaf Spot	64 oz.	250 ppm	Make initial application after first leaves have expanded. Continue on a 10 to 14 day schedule or as needed during wet conditions in the spring. Make an additional application after harvest.
	 10.0 lb. ²	 10 days ³	 2.5 lb. ¹	
Raspberry	Anthracnose, Cane Spot, Leaf Spot, Pseudomonas Blight, Purple Blotch, Yellow Rust	19.2-32 oz.	75-125 ppm	Make fall application after harvest. Apply delayed dormant spray after training in the spring. If needed, agricultural-type spray oil may be added.
	Anthracnose, Cane Spot, Leaf Spot, Purple Blotch, Yellow Rust 10.0 lb. ²	19.2-32 oz. 7 days ³	75-125 ppm 2.0 lb. ¹	Apply when leaf buds begin to open and repeat when flower buds show white. If needed, agricultural-type spray oil may be added. NOTE: Crop injury may occur if applied to foliage under certain environmental conditions such as hot or prolonged moist periods. Discontinue applications if signs of crop injury appear.
Strawberry	Angular Leaf Spot, (<i>Xanthomonas</i>), Leaf Blight, Leaf Scorch, Leaf Spot	19.2-25.6 oz	75-100 ppm	Begin application when plants are established and continue on a weekly schedule throughout the season. Apply in at least 20 gallons of water. Use the higher rates when conditions favor disease. NOTE: Discontinue applications if signs of crop injury appear.
	 8.19 lb. ²	 7 days ³	 1.5 lb. (severe disease) 1.0 lb. ¹	

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TREE CROPS

Crop	Disease	Rate per Acre per 100 gal. of water	ppm's (copper) per 100 gal. of water	INSTRUCTIONS
Almond, Apricot, Cherry, Plum, Prune	Bacterial Blast (<i>Pseudomonas</i>), Bacterial Canker Coryneum Blight (Shot Hole)	32-64 oz.	200-250 ppm	Make first application before fall rains and a second at late dormant. Use the higher rates when conditions favor disease. If needed, agricultural-type spray oil may be added. For Cherries: Where disease is severe, an additional application shortly after harvest may be required. NOTE: Foliar injury may occur from post-bloom sprays on almonds, especially on NePlus varieties.
	Blossom Brown Rot, Coryneum Blight (Shot Hole)	51.2-64 oz. on Almond, All Others 60-90 oz.	125-250 ppm	Apply during early bloom. Do not apply after full bloom or injury may occur. Use the higher rates when rainfall is heavy and disease pressure is high.
	Black Knot* (Plum)	32-64 oz.	125-250 ppm	Make application at bud swell up to early bloom for early disease suppression. Apply before full bloom. Use the higher rates when rainfall is heavy and disease pressure is high. NOTE: To avoid plant injury, do not use after full bloom.
	Cherry Leaf Spot* (Sour Cherries Only)	38.4-64 oz. Dormant/ Late Dormant 7 days Bloom/Growing Season	150-250 ppm 8.0 lb. ¹ 1.5 lb. ¹	Apply at petal fall as well as 1 to 2 times after petal fall. Use the lower rates where disease infection is light and use the higher rates for a dormant application or where disease infection is moderate to heavy. Do not apply to sweet cherry or the English Morello variety as severe injury will result. NOTE: Moderate to severe injury such as leaf spotting and defoliation may occur from post bloom applications.
Apple	Anthraxnose, Blossom Blast, European Canker (<i>Necria</i>), Shoot Blast (<i>Pseudomonas</i>)	51.2-64 oz.	200-250 ppm	Apply before fall rains. Use the higher rates when conditions favor disease. NOTE: Use on yellow varieties may cause discoloration. To avoid discoloration, pick before spraying.
	Apple Scab, Fire Blight	19.2-64 oz.	75-250 ppm	Make application between silver-tip and green-tip. Apply as a full cover spray for early season disease suppression. NOTE: Moderate to severe crop injury may occur from late application.
	Apple Scab Fire Blight	19.2-64 oz.	75-250 ppm	Extended spray schedule where fruit finish is not a concern: Continued applications may be made at 5 to 7 day intervals or as needed. NOTE: Moderate to severe crop injury may result from this extended spray schedule. It is not intended for fresh market apples or for apples where fruit finish is a concern as it is likely to cause fruit russetting.
	Collar Rot, Crown Rot	32 oz. n/a (only 1 application per season permitted ³)	125 ppm Fall, later dormant 8.0 lb. ¹ Bloom 0.5 lb. ¹	Mix 100 gallons of water. Apply 4 gallons of solution as a drench on the lower trunk area of each tree. Apply in early spring or in fall after harvest for best results. Do not apply to foliage or fruit.
Avocado	Anthraxnose, Blotch, Scab	51.2-64 oz. 18.9 lb. ²	200-250 ppm 3.15 lb. ¹	Apply when bloom buds begin to swell and continue application at monthly intervals for five to six applications. Use the higher rates when conditions favor disease.
Banana*	Sigatoka (Black And Yellow)	19.2 oz.	75 ppm	Apply by air in 3 gallons of water. If needed, agricultural-type spray oil may be added. apply on a 14 day schedule or as needed throughout the wet season. Apply at 21 day intervals or as needed during dry periods.
	Black Pitting	32 oz. 18.9 lb. ²	125 ppm 1.05 lb. ¹	Mix 100 gallons of water. Apply to the fruit stem and the basal portion of the leaf crown. Apply during the first and second weeks after fruit emergence.
Cacao*	Black Pod	19.2-64 oz. 15.75 lb. ²	75-250 ppm 2.25 lb. ¹	Begin applications at the start of the rainy season and continue while infection conditions persist.
Coffee	Coffee Berry Disease (<i>Collectotrichum coffeanum</i>)	38.4-64 oz.	150-250 ppm	Apply first spray after flowering and before onset of long rains and then at 21 to 28 day intervals or as needed until picking. Use the high rates when conditions favor disease
	Bacterial Blight (<i>Pseudomonas syringae</i>)	38.4-64 oz.	150-250 ppm	Begin spray program before the onset of long rainy periods and continue throughout the rainy season at 14 to 21 day intervals or as needed. The critical time for spraying to control disease is just before, during and after flowering(s), especially when coinciding with wet weather. Use the higher rates when rainfall is heavy and disease pressure is high.
	Leaf Rust (<i>Hemileia vastatrix</i>)	19.2-32 oz.	75 ppm	Apply before the onset of rain and then at 21 day intervals or as needed while the rains continue. Use the higher rates when rainfall is heavy and disease pressure is high.
	Iron Spot. (<i>Cerospora coffeicola</i>), Pink Disease (<i>Cortium salmonicolor</i>)	19.2 oz. 12.6 lb. ²	75 ppm 2.1 lb. ¹	Use concentrate or dilute spray. Begin treatment at the start of wet season and continue at monthly intervals for three applications.

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TREE CROPS (CON'T)

Crop	Disease	Rate per Acre per 100 gal. of water	ppm's (copper) per 100 gal. of water	INSTRUCTIONS
Filbert*	Bacterial Blight	64-128 oz.	250-500 ppm	Apply as a post harvest spray in seasons of heavy rainfall, apply a second spray when three fourths of the leaves have dropped. Use the higher rates when rainfall is heavy and disease pressure is high. If needed, agricultural type spray oil may be added**.
	Eastern Filbert Blight	64-128 oz. 24.0 lb. ²	250-500 ppm 6.0 lb. ¹	Apply as a dilute spray in adequate water for thorough coverage. Make applications starting at bud swell to bud break and continue at 2 week intervals or as needed until early May. Thorough coverage is essential. Use the higher rates when rainfall is heavy and disease pressure is high. If needed, ag type spray oil may be added.
Mango*	Anthracnose	38.4-64 oz.	150-250 ppm	Apply monthly after fruit set until harvest. Use the higher rates when rainfall is heavy and disease pressure is high.
		18.2 lb. ²	2.6 lb. ¹	
Olive*	Olive Knot, Peacock Spot	64-76.8 oz.	250-300 ppm	Make first application before winter rains begin. A second application in early spring should be made if disease is severe. Apply higher rates for heavy disease pressure or when conditions favor disease development.
		6.3 lb. ²	3.15 lb. ¹	
Peaches,* Nectarine*	Bacterial Blast (<i>Pseudomonas</i>), Bacterial Canker, Bacterial Spot (<i>Xanthomonas</i>), Coryneum Blight (Shot Hole) Leaf Curl, Blossom Brown Rot	51.2-76.8 oz.	200-300 ppm	Make first application before fall rains and a second at late dormant. For each leaf curl, late dormant application must be made before leaf buds swell. Use the higher rates when rainfall and disease pressure is high. If needed, agricultural spray oil may be added. Full cover spray at pink bud.
	Bacterial Spot	19.2 oz. Dormant, Late Dormant 7days Bloom/growing Season	75 ppm	Post-bloom application applied at first and second cover sprays. NOTE: Do not spray 3 weeks prior to harvest. Use only recommended rates. Spotting of leaves and defoliation may occur from use in cover sprays.
Pear*	Fire Blight	19.2 oz.	75 ppm	Apply 5 day intervals or as needed throughout the bloom period. NOTE: Russetting may occur in copper sensitive varieties. Excessive dosages may cause fruit russet on any variety.
		18.0 lb. ²	0.5 lb. ¹	
	Blossom Blast (<i>Pseudomonas</i>)	51.2-76.8 oz. Fall - 1 time per season ³ Bloom/growing	200-300 ppm 0.8 lb. ¹	Apply before fall rains and again during dormancy before spring growth starts. Use the higher rates when disease pressure is high or when conditions favor disease development
Pecan*	Kernel Rot, Shuck Rot (<i>Phytophthora Cactorum</i>), Zonate Leaf Spot (<i>Cristulariella Pyramidalis</i>)	19.2-32 oz.	75-125 ppm	For suppression, apply in sufficient water to ensure complete spray coverage at 2 to 4 week intervals or as needed, starting at kernel growth and continue until shucks open. Use the higher rates and shorter spray intervals if frequent rainfall occurs.
	Ball Moss, Spanish Moss	38.4-64 oz. 8.4 lb. ²	150-250 ppm 2.1 lb. ¹	Apply in 100 gallons of water in the spring when ball moss is actively growing, using 1 ½ gallons of spray per foot of tree height. Make sure to wet ball moss tufts thoroughly. The addition of a non-ionic surfactant will improve control. A second application may be required after 12 months.
Pistachio	Botryosphaeria Panicle and Shoot Blight, Botytris Blight, Late Blight (<i>Alternaria alternata</i>) Septoria Leaf Blight	32-64 oz. 14 days ³	125-250 ppm 2.1 lb. ¹	Make initial application at bud swell and repeat on a 14 to 28 day schedule or as needed. If disease conditions are severe, use the higher rates and shorter spray intervals.
Quince*	Fire Blight	19.2 oz.	75 ppm	Apply at 5 day intervals or as needed throughout the bloom period. Apply in adequate water for thorough coverage.**
		16.0 lb. ²	0.5 lb. ¹	
Walnut	Walnut Blight	32-51 oz.	125-200 ppm	Apply at first spray at early pre-bloom prior to or when catkins are partially expanded. Make additional applications during bloom and early nutlet stage or as needed when frequent rainfall or extended periods of moisture occur. Thorough coverage of catkins, leaves and nutlets is essential for effective control. NOTE: Adequate control may not be obtained when copper tolerant species of <i>Xanthomonas</i> bacteria are present.
		25.2 lb. ²	3.15 lb. ¹	

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VEGETABLES

Crop	Disease	Rate per Acre per 100 gal. of water	ppm's (copper) per 100 gal. of water	INSTRUCTIONS
Bean (Dry, Green)*	Brown Spot, Common Blight, Halo Blight 4.74 lb. ²	19.2-25.6 oz. 7 days ³	75-100 ppm 2.0 lb. ¹	For protective sprays, make first application when plants are 6 inches high; repeat on a 7 to 14 day schedule or as needed depending on environmental conditions. Use the higher rates for more severe disease.
Beet (Table Beet, Beet Greens)*	Cercospora Leaf Spot 7.86 lb. ²	19.2-32 oz. 10 days ³	75-125 ppm 1.31 lb. ¹	Begin applications when conditions first favor disease development and repeat at 10 to 14 day intervals or as needed. Use the higher rates when conditions favor disease.
Carrot	Alternaria Leaf Spot, Cercospora Leaf Spot 5.0 lb. ²	19.2 oz. 7 days ³	75 ppm 1.0 lb. ¹	Begin applications when disease first threatens and repeat at 7 to 14 day intervals or as needed depending on disease severity.
Celery*, Celeriac**	Bacterial Blight, Cercospora Early Blight, Septoria Late Blight 5.3 lb. ²	19.2 oz. 7 days ³	75 ppm 1.0 lb. ¹	Begin applications as soon as plants are first established in the field, repeating at 5 to 7 day intervals or as needed depending on disease severity and environmental conditions.**
Crucifers (Broccoli, Brussel Sprouts, Cabbage, Cauliflower, Collard Greens, Mustard Greens, Turnip Greens)	Black Leaf Spot (Alternaria) Black Rot (Xanthomonas) Downy Mildew 2.65 lb. ²	19.2-25.6 oz. 7 days ³	75-100 ppm 0.53 lb. ¹	Begin application after transplants are set in the field, or shortly after emergency of field seeded crops or when conditions favor disease development. Apply at 7 to 10 day intervals or as needed. Use the higher rates when conditions favor disease. NOTE: Reddening of older leaves may occur on broccoli and a flecking of wrapper leaves may occur on cabbage.
Cucurbits (Cantaloupe, Cucumber, Honeydew, Muskmelon, Pumpkin, Squash, Watermelon)	Alternaria Leaf Spot, Angular Leaf Spot, Anthracnose, Downy Mildew, Gummy Stem Blight, Powdery Mildew, Watermelon Bacterial Fruit Blotch (Suppression) 5.25 lb. ²	19.2-25.6 oz. 5 days ³	75-100 ppm 1.05 lb. ¹	Begin applications prior to disease development and continue while conditions are favorable for disease development. Repeat at 5 to 7 day intervals or as needed. Use the higher rates when conditions favor disease. NOTE: Crop injury may occur from application at higher rates and shorter intervals. Discontinue use if injury occurs.
Eggplant	Alternaria Blight, Anthracnose, Phomopsis 7.9 lb. ²	19.2 oz. 7 days ³	75 ppm 0.79 lb. ¹	Begin applications prior to development of disease symptoms. Repeat sprays at 7 to 10 day intervals or as needed depending on disease severity.
Okra*	Anthracnose, Bacterial Leaf Spot, Leaf Spots, Pod Spot, Powdery Mildew 5.25 lb. ²	19.2-32 oz. 5 days ³	75-100 ppm 1.05 lb. ¹	Begin treatment when disease first threatens and repeat every 5 to 10 days or as needed depending on disease severity. Use the higher rates and shorter spray intervals when conditions favor disease.
Onion, Garlic	Bacterial Blight, Downy Mildew, Purple Blotch 2.12 lb. ²	19.2 oz. 7 days ³	75 ppm 1.0 lb. ¹	Begin when plants are 4 to 6 inches high and repeat at 7 to 10 day intervals or as needed depending on disease severity. Can cause phytotoxicity to leaves.
Pea	Powdery Mildew 3.95 lb. ²	19.2-25.6 oz. 7 days ³	75-100 ppm 0.79 lb. ¹	Begin applications when disease symptoms first appear and repeat weekly intervals or as needed. Use the higher rates when conditions favor disease.
Pepper	Anthracnose, Bacterial Spot, Cercospora Leaf Spot 11.85 lb. ²	19.2-25.6 oz. 3 days ³	75-100 ppm 0.79 lb. ¹	Begin applications when conditions first favor disease development and repeat at 7 to 10 day intervals or as needed depending on disease severity. Use the higher rates when conditions favor disease.
Spinach	Anthracnose, Blue Mold, Cercospora Leaf Spot, White Rust 3.95 lb. ²	19.2-25.6 oz. 7 days ³	75-100 ppm 0.79 lb. ¹	Begin application when disease first appears or when conditions favor disease development. Repeat at 7 to 10 day intervals or as needed. Use the higher rates when conditions favor disease. NOTE: Flecking may occur on spinach leaves.
Tomato	Anthracnose, Bacterial Speck, Bacterial Spot, Early Blight, Gray Leaf Mold, Late Blight, Septoria Leaf Spot 17.4 lb. ²	19.2-32 oz. 3 days ³	75-125 ppm 0.53 lb. ¹	Begin applications when disease first threatens and repeat at 5 to 10 day intervals or as needed depending on disease severity. Use the higher rates when conditions favor disease.
Watercress	Cercospora, Leaf Spot 2.12 lb. ²	19.2 oz. 7 days ³	75 ppm 0.53 lb. ¹	Begin applications when plants are first established in the field, repeating at 7 to 14 day intervals or as needed depending on disease severity. Do not exceed four applications per crop. Apply using ground spray equipment at no less than 50 gallons of spray solution per acre.*

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Not Permitted Celeriac in California**
Permitted only in Washington State and Oregon**

VINE

Crop	Disease	Rate per Acre per 100 gal. of water	ppm's (copper) per 100 gal. of water	INSTRUCTIONS
Grapes	Brown Rot, Downy Mildew, Phomopsis, Powdery Mildew	19.2-32 oz.	75-125 ppm	Begin applications at bud break with subsequent applications throughout the season depending on disease severity. Use the higher rates when conditions favor disease. NOTE: Foliage injury may occur on copper sensitive varieties such as Concord, Delaware, Niagara and Rosette. NOTE: For table grapes, spraying up until harvest is acceptable. For all others discontinue spraying 15 days before harvest.
	20.0 lb. ²	3 days ³	3.0 lb. ¹	
Hops*	Downy Mildew	19.2 oz.	75 ppm	Make crown treatments after pruning, but before training. After training, additional treatments are needed at about 10 day intervals. NOTE: Discontinue use 2 weeks before harvest.
	2.65 lb. ²	10 days ³	0.53 lb. ¹	
Kiwi*	<i>Erwinia herbicola</i> , <i>Pseudomonas fluorescens</i> , <i>Pseudomonas syringae</i>	38.4 oz.	150 ppm	Apply in 200 gallons of water per acre. Make applications on a Monthly basis. A maximum of 3 applications may be made.
	6.3 lb. ²	30 days ³	2.1 lb. ¹	

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MISCELLANEOUS

Crop	Disease	Rate per Acre per 100 gal. of water	ppm's (copper) per 100 gal. of water	INSTRUCTIONS
Atemoya*	Anthracnose	25.6-38.4 oz.	100-150 ppm	Make initial application just before flowering and repeat on a weekly schedule until just before harvest. Apply in sufficient water for thorough coverage. Use the higher rates for severe disease.*
	12.6 lb. ²	7 days ³	3.15 lb. ¹	
Carambola*	Anthracnose	38.4-51.2 oz.	150-200 ppm	Make initial application before flowering and repeat on a weekly schedule until just before harvest. Apply sufficient water for thorough coverage. Use the higher rates for severe disease.*
	10.5 lb. ²	7 days ³	2.1 lb. ¹	
Chives	Downy Mildew	19.2 oz.	75 ppm	Begin application when plants are established in the field. Repeat every 7 to 10 days or as needed depending on disease conditions.*
	2.65 lb. ²	7 days ³	0.53 lb. ¹	
Dill	Phoma Leaf Spot, Rhizoctonia Foliage Blight	19.2-25.6 oz.	75-100 ppm	Begin applications when plants are first established in the field and repeat at 7-10 day intervals or as needed depending on disease severity and environmental conditions. Use the higher rates for severe disease.*
	3.95 lb. ²	7 days ³	0.79 lb. ¹	
Guava*	Anthracnose, Red Algae	25.6-38.4 oz.	100-150 ppm	Make initial application just before flowering and repeat on a weekly schedule until just before harvest. Apply in sufficient water for thorough coverage. Use the higher rates for severe disease.
	4.92 lb. ²	7 days ³	1.23 lb. ¹	
Litchi*	Anthracnose	25.6-38.4 oz.	100-150 ppm	Make initial application just before flowering and repeat on a weekly schedule until just before harvest. Use the higher rates for severe disease.
	4.92 lb. ²	7 days ³	1.23 lb. ¹	
Macadamia*	Anthracnose	38.4-64 oz.	150-250 ppm	Initiate sprays at first sign of flowering and repeat on a weekly schedule until just before harvest. Apply in sufficient water for thorough coverage. Use the higher rates for severe disease.
	Phytophthora Blight (<i>P. capsici</i>), Raceme Blight (<i>Botrytis cinerea</i>)	38.4-64 oz.	150-250 ppm	
Mamey Sapote*	Algal Leaf Spot	38.4-64 oz.	150-250 ppm	Apply when conditions favor disease development. Repeat on a 14 to 30 schedule or as needed as disease severity and environmental conditions dictate. Use the higher rates when conditions favor disease.*
	8.4 lb. ²	7 days ³	2.1 lb. ¹	
Pitahaya (Dragon fruit)*	<i>Xanthomonas campestris</i> , <i>Dothiorella</i>	32-51 oz.	125-200 ppm	Begin applications at the start of the rainy season and continue while infection conditions persist.
	4.92 lb. ²	7 days ³	1.23 lb. ¹	

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GREENHOUSE AND SHADEHOUSE CROPS

Notice to Users: CS 2005 may be used in greenhouses and shade houses to control diseases on crops which appear on this label, and specific instructions have been developed for crops listed. The grower should bear in mind the sensitivity of crops grown in greenhouses and shadehouses differs greatly from crops grown under field conditions. Neither the manufacturer nor the seller has determined whether or not CS 2005 can safely be used on greenhouse and shadehouse grown crops. Consequently, injury arising from the use of CS 2005 on these types of greenhouse and shadehouse crops is the responsibility of the user. The user should determine if CS 2005 can be used safely prior to commercial use. In a small area, apply the recommended rates to the plants in question, i.e. foliage, fruit etc., and observe for 7 to 10 days for symptoms of phytotoxicity prior to commercial use.

Apply CS 2005 according to specific rates given for those crops in ounces per acre. **One fluid ounce = 29.5 milliliters = 6 teaspoons per 1,000 square feet is equivalent to 21.5 ounces per acre.** CS 2005 should be applied in adequate water for thorough coverage of plant parts. Begin application at first sign of disease and repeat at 7 to 14 day intervals or as needed; use shorter spray intervals during periods when severe disease conditions persist.

NOTE: Phytotoxicity may occur on young tender flush when CS 2005 is applied to citrus seedlings grown in greenhouses or shadehouses.

Crop	Disease	Rate per Acre	INSTRUCTIONS
Citrus (Non-Bearing Nursery)	Brown Rot, Citrus Canker, Greasy Spot, Melanose, Pink Pitting, Scab	15 milliliters	Begin applications when disease first threatens. Repeat at 30 day intervals or as needed depending on disease severity.
Cucumber	Angular Leaf Spot, Downy Mildew	5-12 milliliters	Apply weekly when plants begin to vine. Use the higher rates when conditions favor disease.
Eggplant	Alternaria Blight, Anthracnose, Phomopsis	9 milliliters	Begin applications prior to development of disease symptoms. Repeat at 7 to 10 day intervals or as needed depending on disease pressure.
Peppers	Bacterial Spot	9-15 milliliters	Begin applications when conditions favor disease development and repeat at 5 - 10 day intervals or as needed depending on severity. Use the higher rates when conditions favor disease.
Tomatos	Anthracnose, Bacterial Speck, Bacterial Spot, Early Blight, Gray Leaf Mold, Late Blight, Septoria Leaf Spot	9-15 milliliters	Begin applications when disease first threatens and repeat at 5 to 10 day intervals or as needed depending on disease severity. Use the higher rates when conditions favor disease.

CONTAINER RECYCLING AND DISPOSAL INFORMATION

Container Recycling and Disposal Information: Non-refillable containers: Do not reuse or refill this container. Offer for recycling, if available. Do not reuse the container to hold materials other than pesticides or dilute pesticides (rinsate). After emptying and cleaning, it may be allowable to temporarily hold rinsate or other pesticide related materials in the container. Contact your state regulatory agency to determine allowable practices in your state. For containers 5 gallons or less: Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after flow begins to drip. Repeat two more times. For containers of more than 5 gallons, i.e. drums: Triple rinse as follows: Empty the remaining contents into the application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll back and forth, ensuring at least one complete revolution, for 30 seconds. Stand container on end and tip back and forth several times. Turn the container over on its other end and tip back and forth several times. Empty rinsate into application equipment or mix tank or store rinsate for later use or disposal. Repeat procedure two more times. For large containers, i.e. IBC's or totes: Pressure washing may be an alternative. Pressure rinsing is as follows: Empty remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after flow begins to drip. Rinsing and reuse of totes is permissible.

LIMITED WARRANTY AND LIMITATION OF REMEDIES

Seller warrant that the product conforms to the chemical description and is reasonably fit for the purpose stated on the label for use under normal conditions, but makes no other warranties of FITNESS or MERCHANTABILITY expressed or implied, or any other warranty if the product is used contrary to the label instructions or abnormal conditions not foreseeable to the seller. In no case shall the seller be liable for more than the cost of the product to the buyer, and will in no event be liable for any consequential, special or indirect damages connected with the use or handling of this product. This product is offered and the buyer or user accepts its subject to the foregoing terms which may not be varied.



Walnut Blight Research

Efficacy of new copper and non-copper based treatments for managing walnut blight on cv. Tulare under natural rainfall conditions.

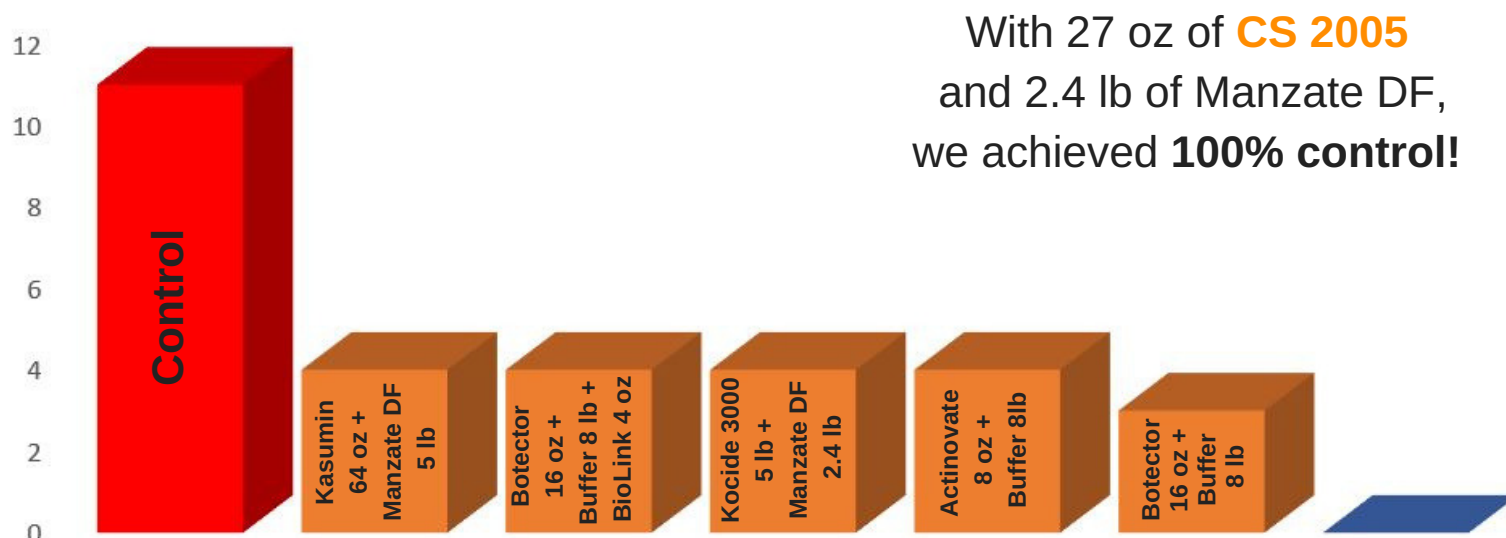
Solano County 2014 conducted by Dr. Jim Adaskaveg - UC Riverside

Populations of *X.arboricola* pv. *Junlandis* partially resistant to copper



CS 2005 advanced copper formula offers an alternative to antibiotics with its systemic capabilities! With low metallic copper, it helps preserve the environment by using 1/8 to 1/4 lb. of copper per acre and **94% control** in this trial!

Evaluation of new antimicrobial and biological products for management of walnut blight on cv. Chandler -Kearney Ag Center 2014 Inoculation with a Copper-Resistant Strain of *X. arboricola* pv. *juglandis*



With 27 oz of **CS 2005** and 2.4 lb of Manzate DF, we achieved **100% control!**

Applications were done on 4/6, 4/14, 4/23, and 5/1/14.

Inoculations were done on 4/15, 4/25, and 5/2/14.

Simulated rain was applied for 5h to 7 h each on 4/4, 5/5, 5/9, and 5/12/14.

Disease was evaluated on 6/6/14

Effect on Bacterial Spot in Almonds

Efficacy of in-season bactericide treatments for management of Bacterial Spot

cv. Fritz Almonds in San Joaquin County, 2014.

Data provided by Dr. Jim Adeskaveg, UC Riverside



CS 2005 Spray Program for Season

Full Bloom	2/18	64 fl oz + 6 lb Manzate 75 DF
Petal Fall	3/5	27 fl oz + 4lb Manzate 75 DF
2 Weeks APF	3/20	27 fl oz + 4lb Manzate 75 DF
4 Weeks APF	4/3	27 fl oz + 4lb Manzate 75 DF

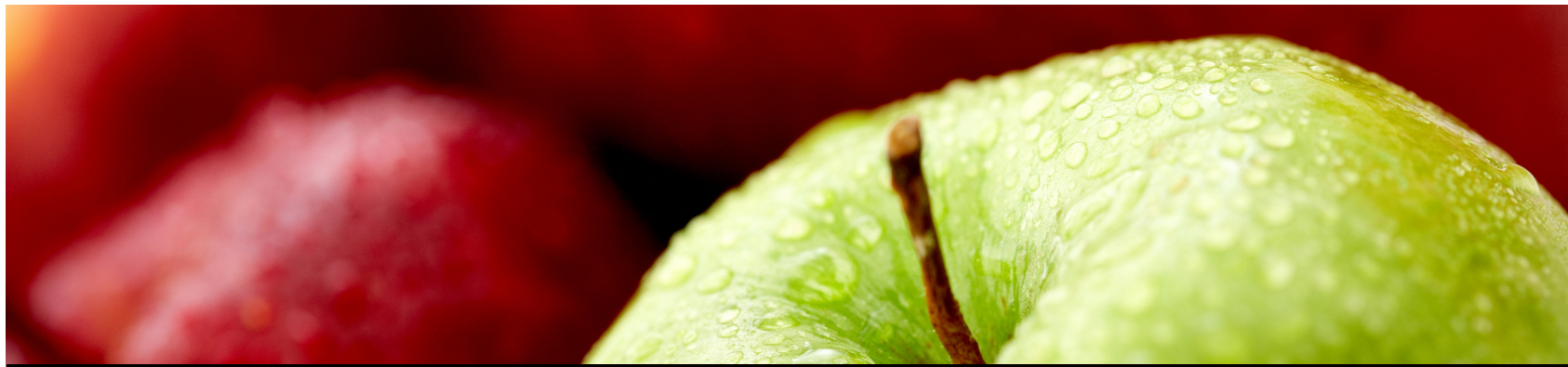
With less than 3/4 pound of metallic copper per acre for the entire growing season, **CS 2005** had a 95% success rate against Almond Bacterial Spot!

Treatments were applied at a rate of 100 gal/A using air-blast sprayer

Blueberry Pre-Harvest Spray

60 Days Later





Magna-Bon[®]

AGRICULTURAL CONTROL SOLUTIONS

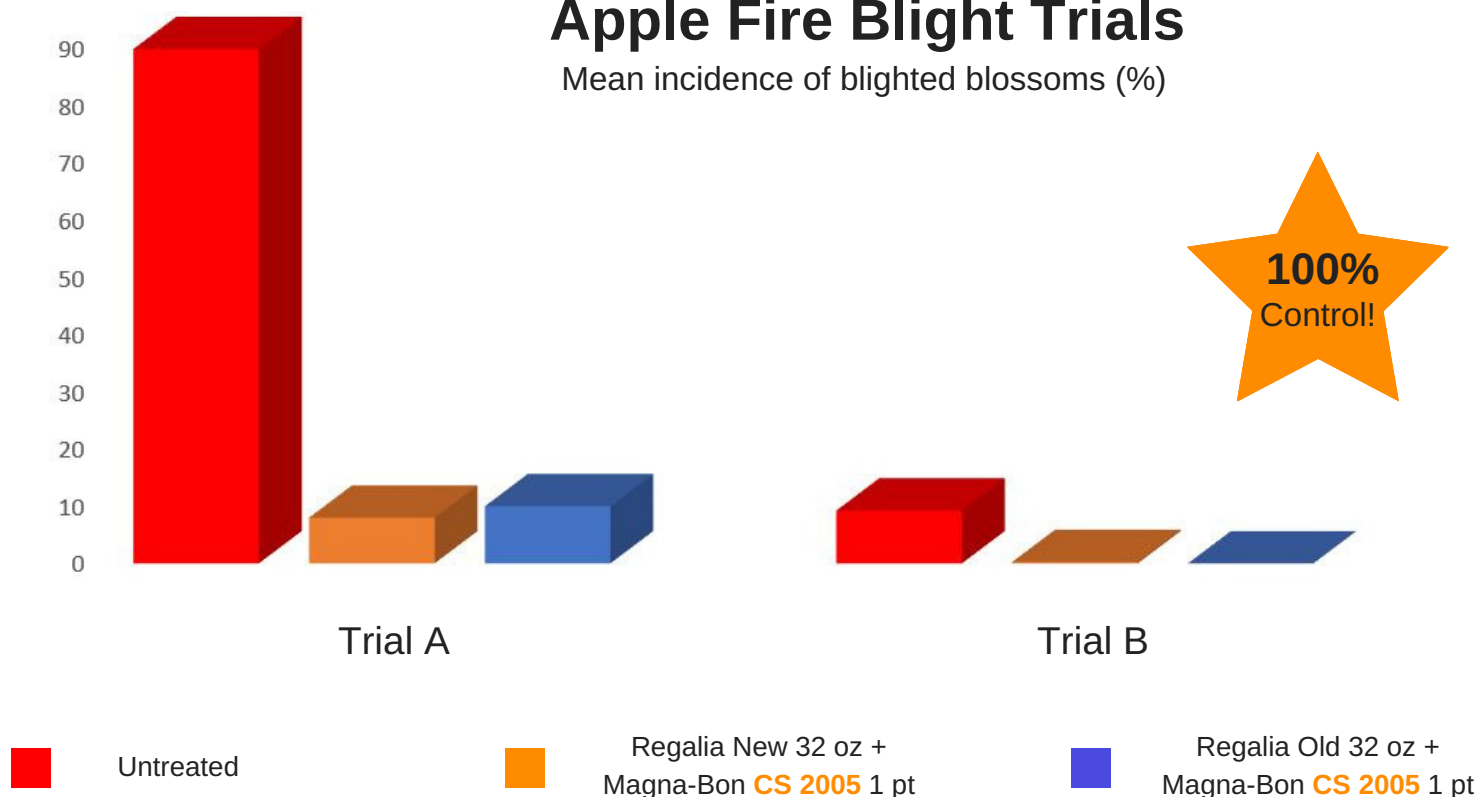
CS 2005

Evaluation of bactericide and chemical regulator programs for the management of fire blight on 12-yr-old 'Idared' trees on B.9 rootstocks.

New York State Agricultural Experiment Station in Geneva, NY 2015

Apple Fire Blight Trials

Mean incidence of blighted blossoms (%)



Treatments were applied dilute to runoff using a gas powered backpack sprayer (200 PSI). Most treatments were made at 20% bloom (9 May), 50% bloom (10 May), 80% bloom (10 May), full bloom/petal fall (20 May), and during terminal shoot growth (5 Jun).

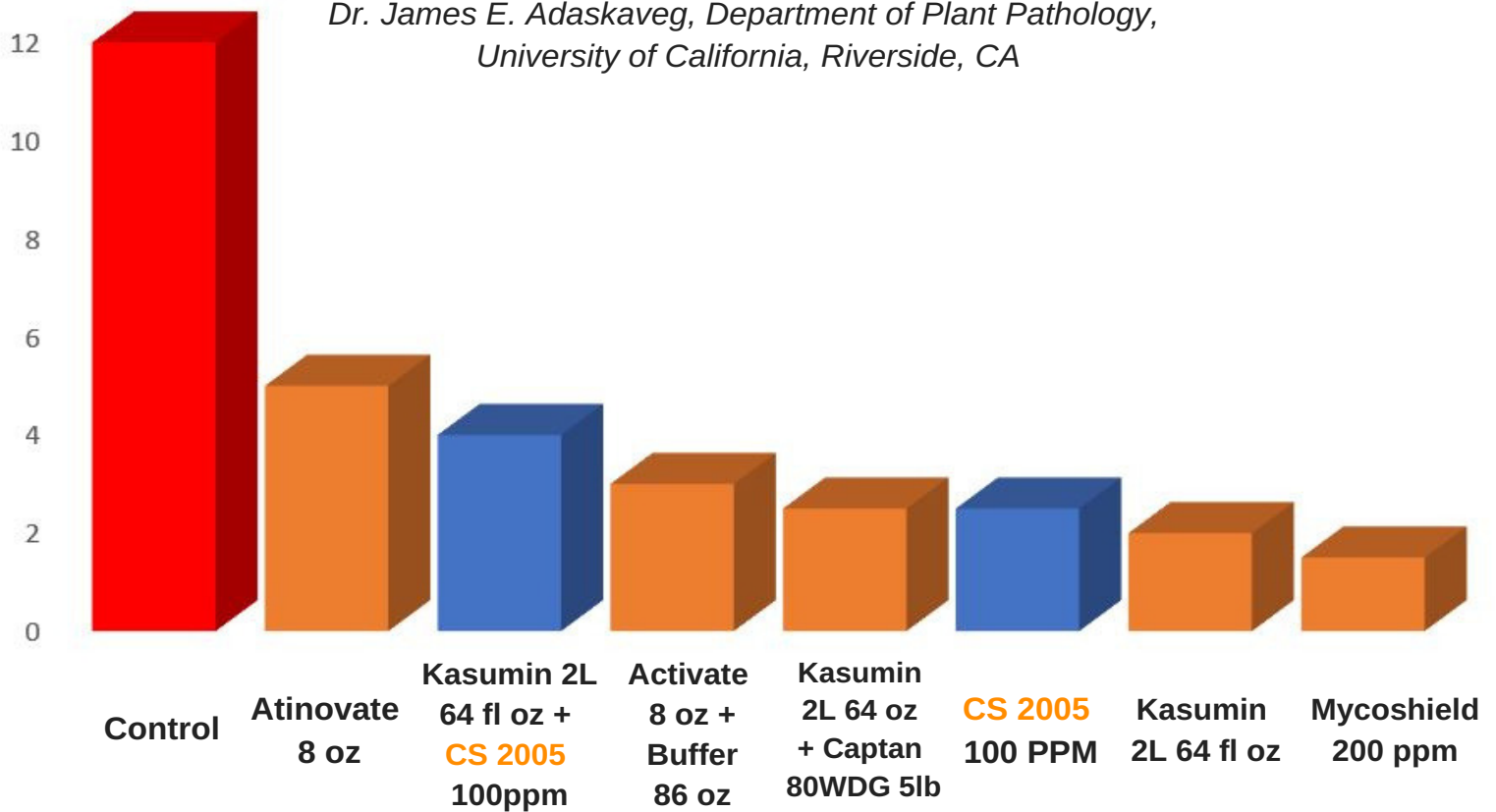
Application Rates for Fire Blight:

Extended spray schedule where fruit finish is not a concern: Continued applications may be made at 5 to 7 day intervals or as needed between ½ inch green-tip and first cover spray. NOTE: Moderate to severe crop injury may result from this extended spray schedule. It is not intended for fresh market apples or for apples where fruit finish is a concern as it is likely to cause fruit russetting.

Rate/Acre:
19.2 - 25.6 oz
PPM's (copper)
per 100 gallons of water
75 - 100 PPM

Evaluation of antibacterial treatments for protection of cv. Coral Cherry Fruit from bacterial blast

Dr. James E. Adaskaveg, Department of Plant Pathology,
University of California, Riverside, CA



Applications were done on 3-11-14 at 50% bloom using an airblast backpack sprayer at a rate of 100 gal/A. Inoculated with *copper-resistant strain* fruit were evaluated for the presence of blast symptoms in mid-April.



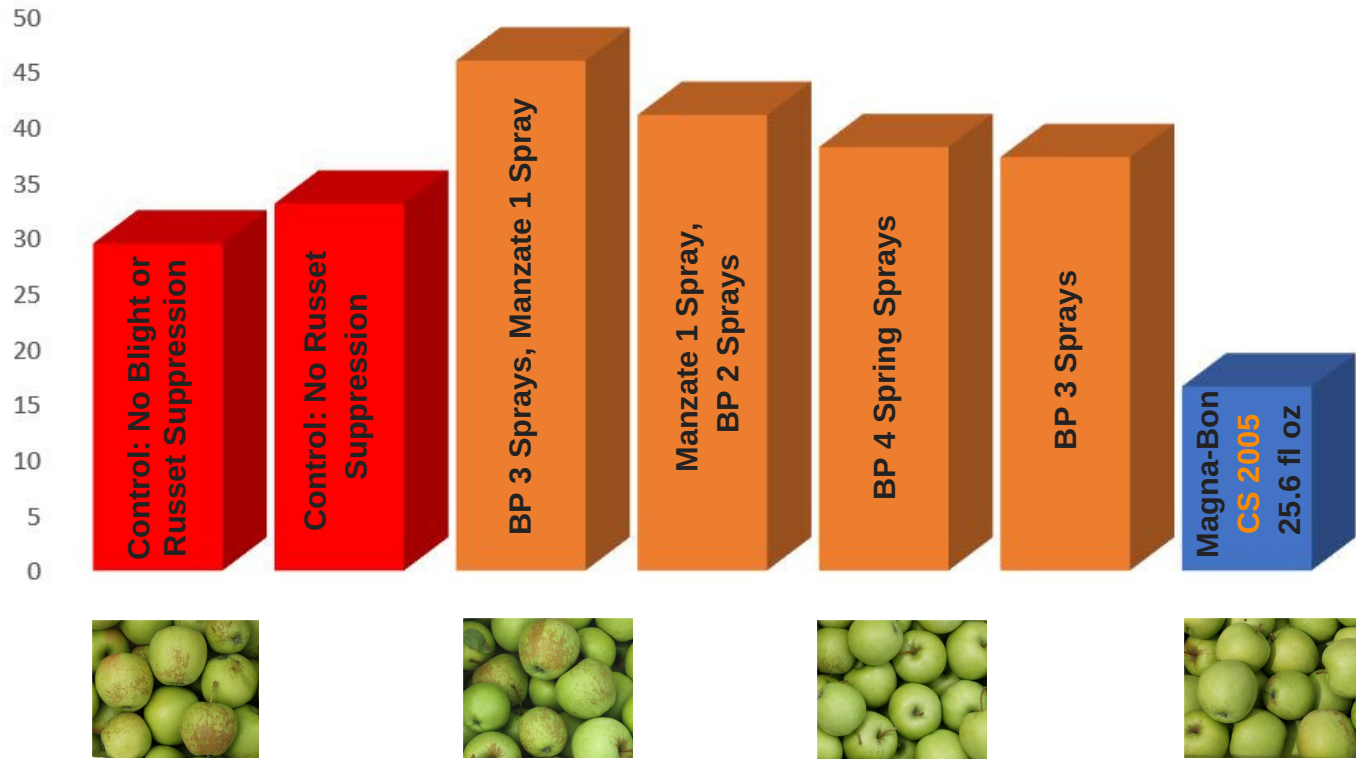
Testimonial



- Magna Bon CS 2005 saved our Sweet Cherry Orchards from a severe case of bacterial canker in 2012. Since then we harvested two consecutive record value crops of top quality cherries. We used CS 2005 on all our tarts and sweet orchards on a regular basis.
 - Gene Veliquette principle Cherry Ke, Inc.
 - (3000-5000 Acres of Cherry Orchards)

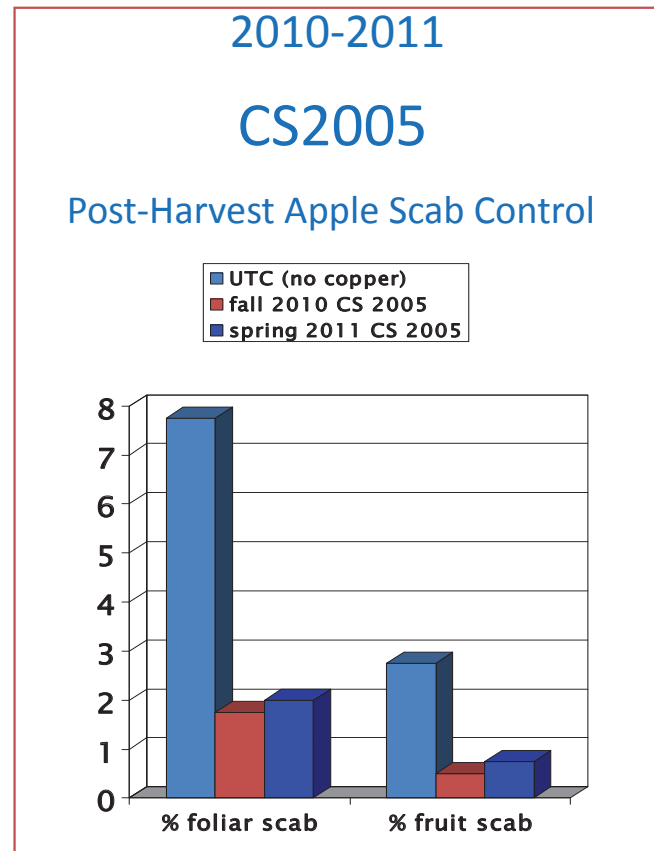
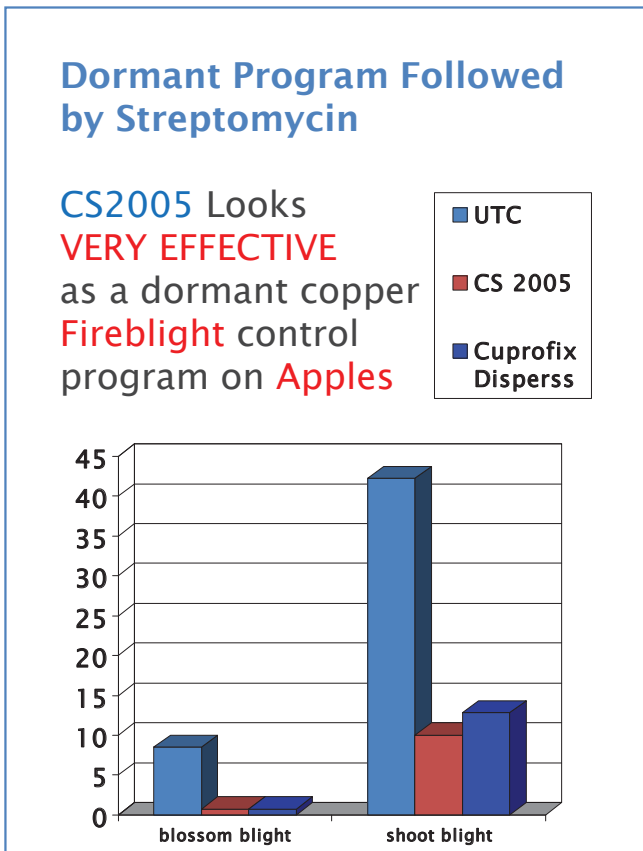
Impact of blossom sprays on fruit russet evident on Golden Delicious Apples

Evaluation on August 8, 2013 by Cornell University - Hudson Valley Laboratory



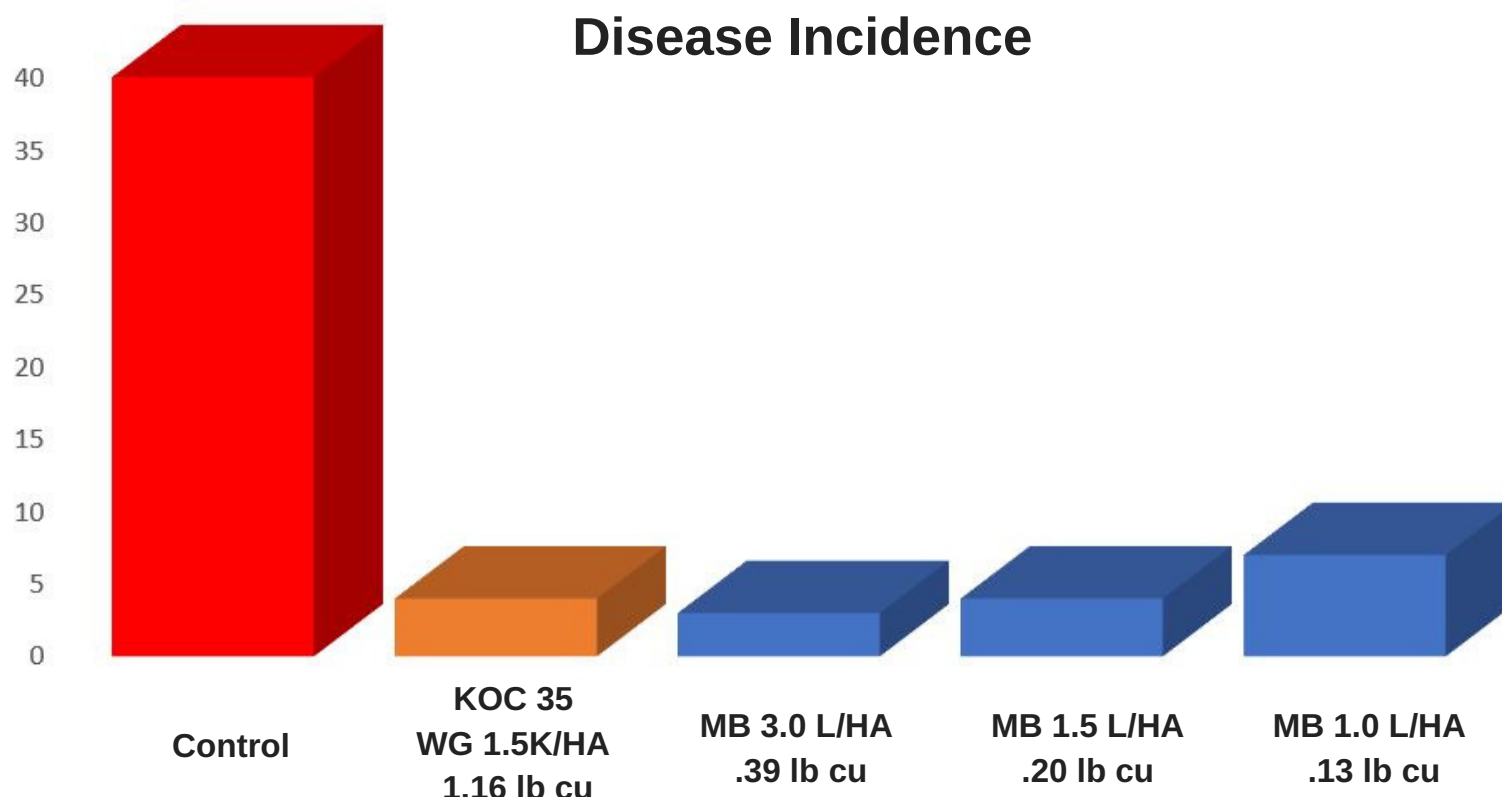
*Pictures shown are correlated with the spray programs directly above.

Research conducted by Jeff Alicandro of agr.assistance



Biological evaluation of Magna-Bon 19.8% SA (copper sulfate pentahydrate) to control Rust (*Hemileia vastatrix*) in *Coffea Arabica*

Research conducted in Costa Rica

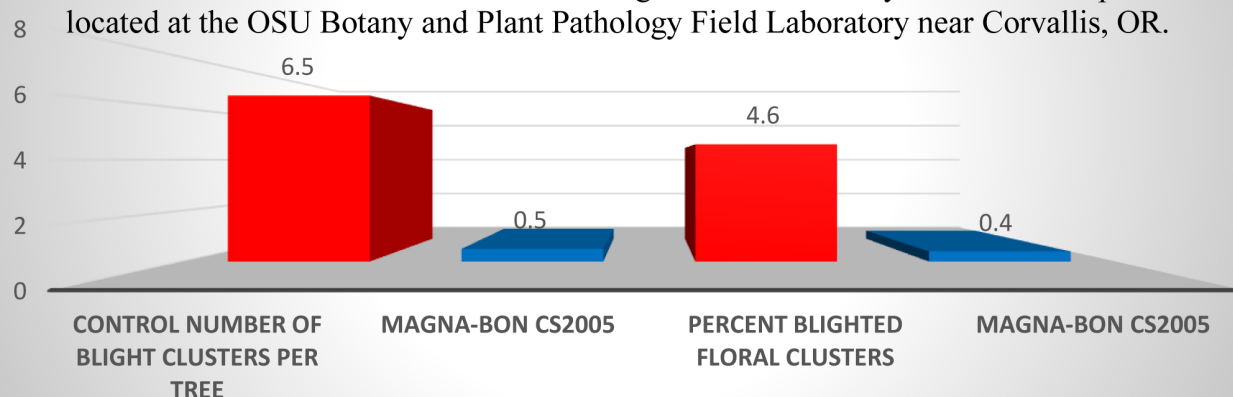


Pear ('Bartlett') Blight: *Erwinia Amylovora*

CONTROL OF PEAR FIRE BLIGHT

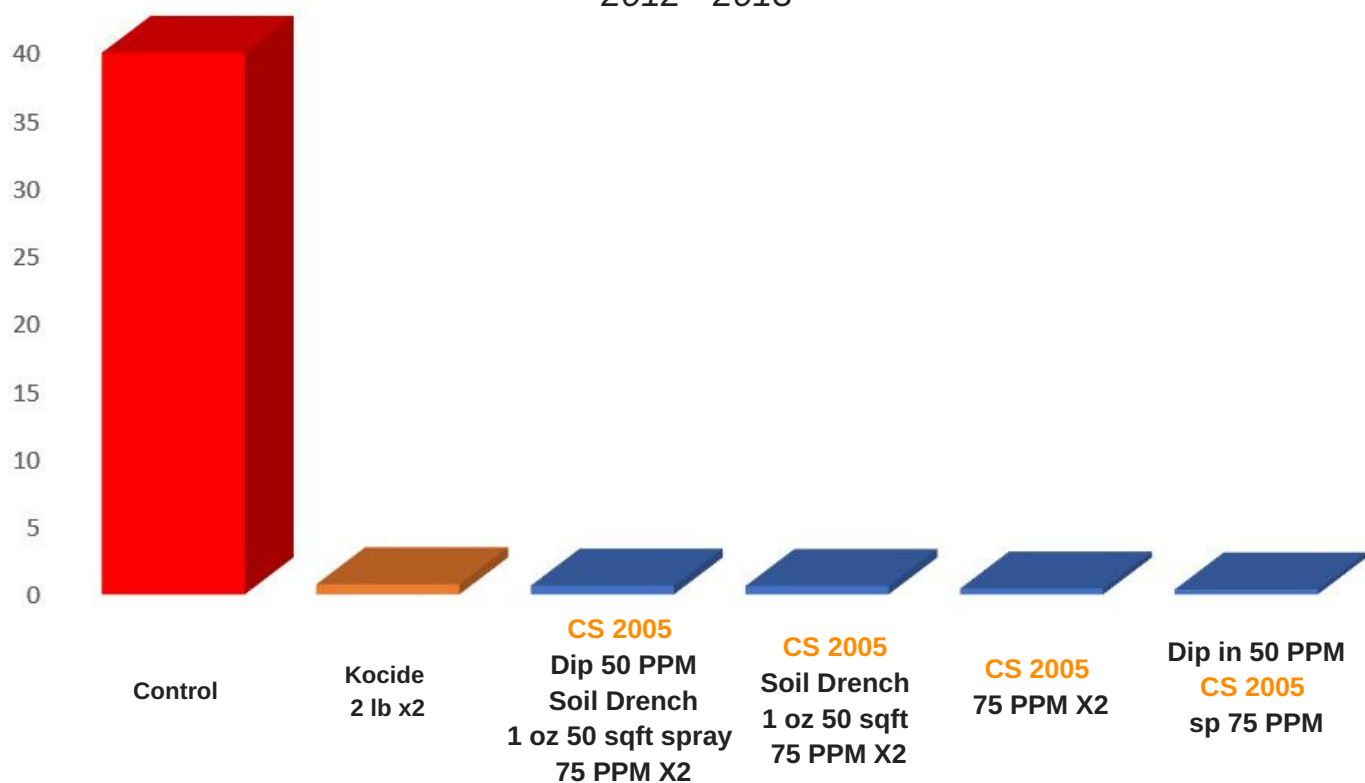
Ken Johnson and T.N. Tempel

Non-antibiotic materials were evaluated for fire blight control in a 17-yr-old 'Bartlett' pear orchard located at the OSU Botany and Plant Pathology Field Laboratory near Corvallis, OR.

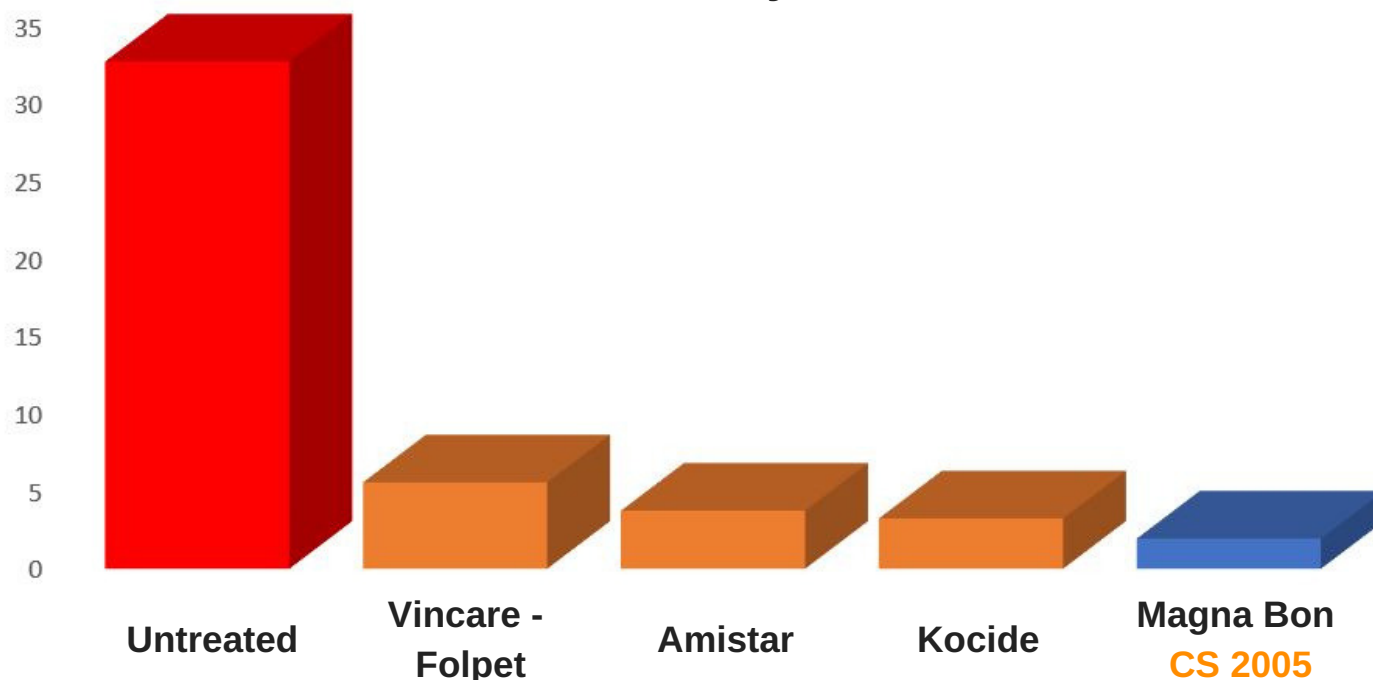


Vidalia Sweet Onions Research on Center Rot and Botrytis

University of Georgia
2012 - 2013



Grapes Research Percentage of Leaf Coverage with Downy Mildew



With Magna Bon **CS 2005**, we had 98% control against downy mildew in grapes!

MAGNA-BON PROGRAM

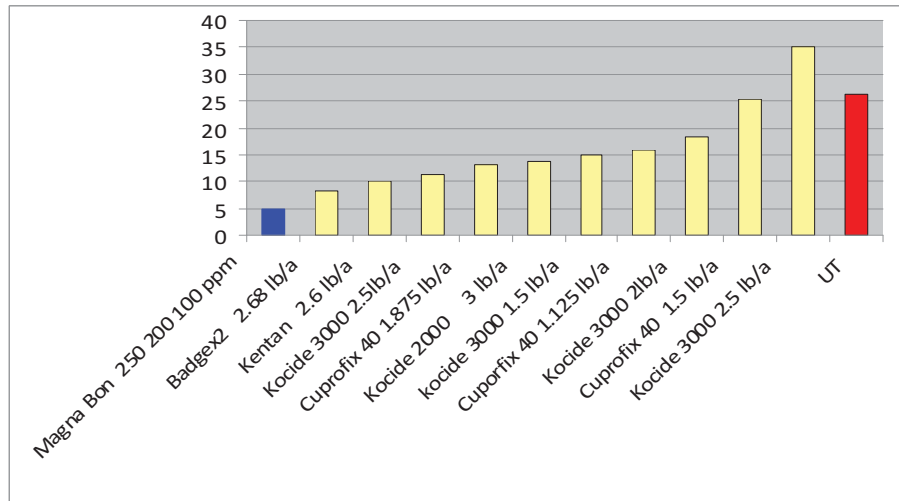
The Magna-Bon program was used in the test block for Hamlin's in 2009 showing the **Lowest** % of Fruit w/Canker.

Six (6) sprays applied on a 21 day spray program:

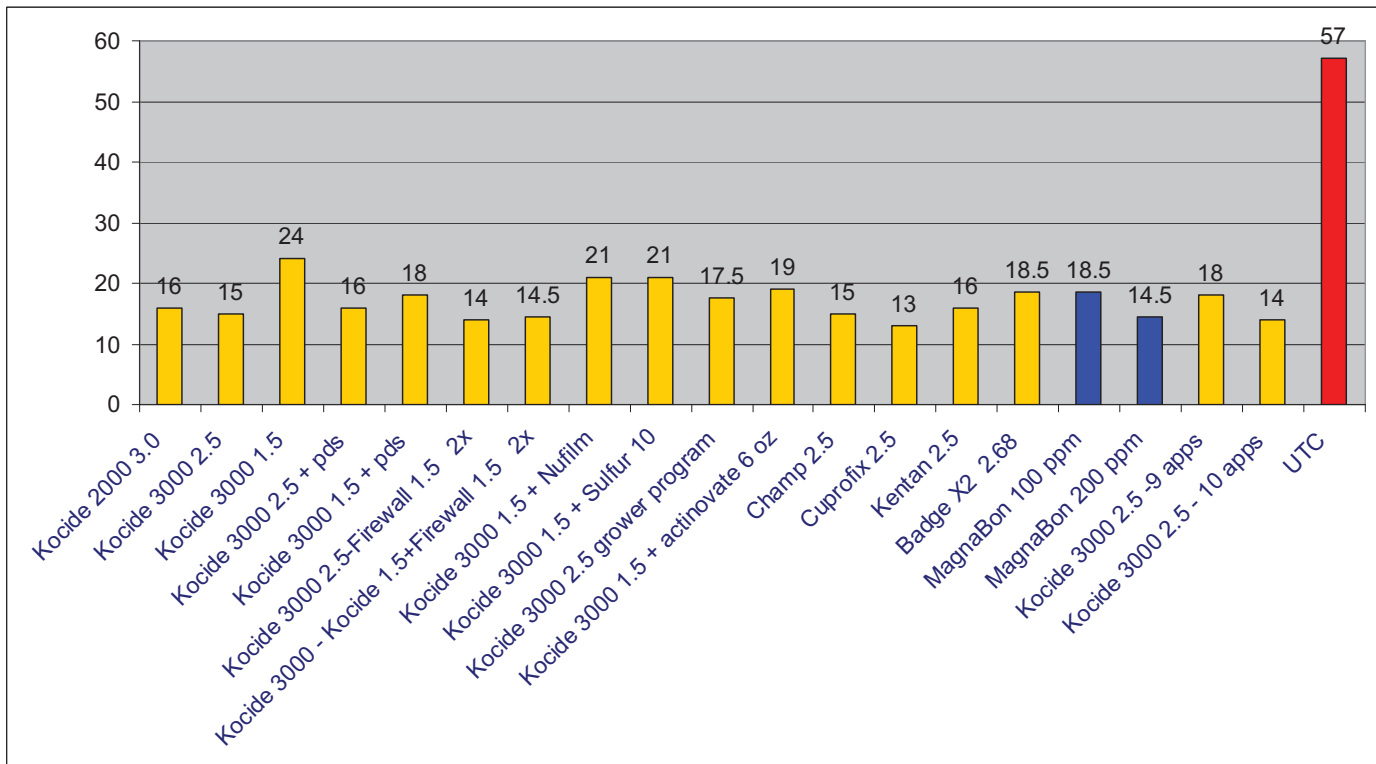
- 1st Spray 4/8 @ 250ppm
- 2nd Spray 4/29 @ 200ppm
- 3rd Spray 5/25 @ 100ppm
- 4th Spray 6/9 @ 100ppm
- 5th Spray 7/1 @ 100ppm
- 6th Spray 7/22 @ 100ppm

LOWEST % FRUIT WITH CANKER

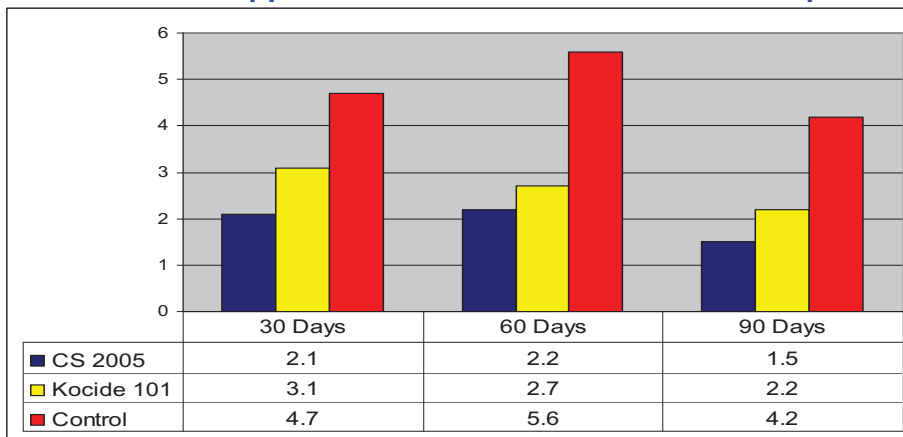
2009 Canker Control Testing on Hamlin's in Zolfo Springs, Fl



Data Provided by University of Florida, 11 Sprays, 21 Days apart on Grapefruit*



Bell Peppers inoculated with Bacterial Leaf Spot



Magna-Bon CS 2005
In Solution not Suspension

No Agitation Needed

Will not Clog Nozzles

Minimal Particle Size

Maximum Coverage

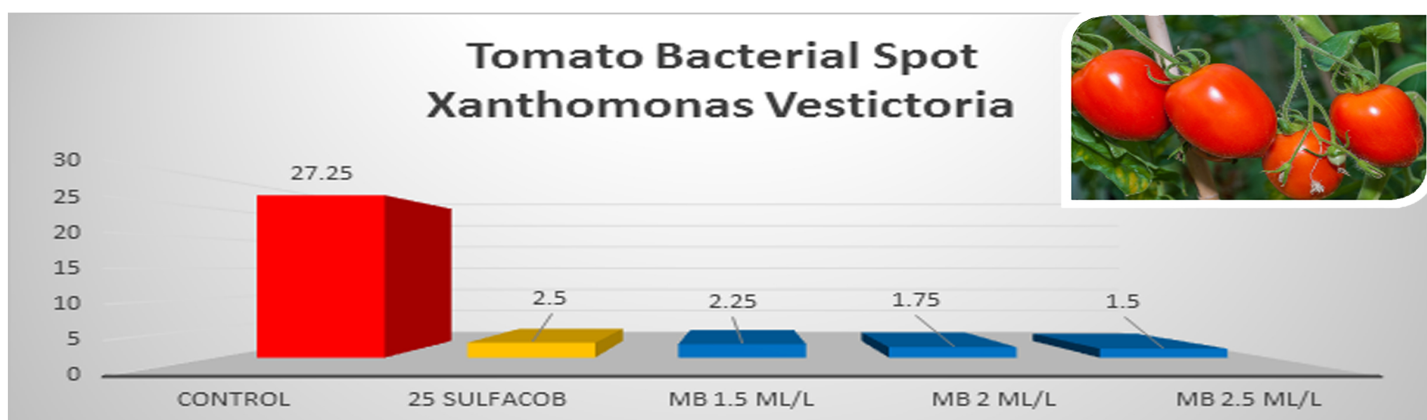
Uses Less Copper per Acre

Test conducted by A & L Laboratories, Inc.

FIRST ASSESSMENT

With the first application, the percentages of infection for treatments 1 to 4 were significantly reduced with regards to the untreated control, showing significant statistical differences (Table 5). The greatest control was achieved by treatment Magna Bon 2.5 ml/L of water, which had a percentage infection of 1.50% and 94.50% efficacy, followed by Magna Bon treatment 2: dosage of 2.0 ml/L of water, with a percentage infection of 1.75% and 93.58% efficacy, followed by Magna Bon at 1.5 ml/L of water, with infection percentage of 2.25% and 91.74% efficacy, and finally the regional control Sulfacob 25, at 2.5 kg / ha, with infection of 2.50%, for the lowest percentage efficacy, of 90.83%.

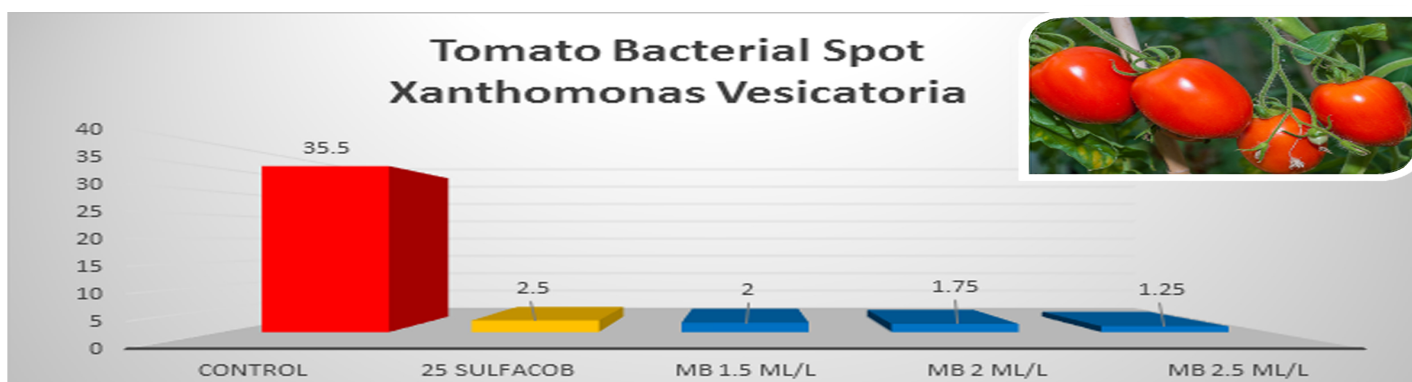
Treat.	Product	Dosage in ml/L of water	% of infection	efficacy %	Significance Tukey at 95%
1	MAGNA BON	1.5	2.25	91.74	B
2	MAGNA BON	2.0	1.75	93.58	B
3	MAGNA BON	2.5	1.50	94.50	B
4	25 SULFACOB	2.5 kg / ha	2.50	90.83	B
5	Absolute control	-	27.25	-----	A



SECOND ASSESSMENT

In the second assessment, the effect of the different applied dosages was more evident, since in treatment 3, MAGNA Bon at 2.5 ml/L of water, the infection percentage was 1.25% and efficacy was 96.48%, then ranked the intermediate rate of Magna Bon: 2.0 ml/L of water, with 1.75% infection and 95.07% efficacy, followed MAGNA BON at 1.5 ml/L of water, with 2.00% infection and 94.37% efficacy, and finally ranked the regional control Sulfacob, at 2.5 kg / ha, with 2.50% infection and 92.96% efficacy, while in the untreated control the infection reached 35.50% (Table 6).

Treat.	Product	Dosage in ml/L of water	% of infection	efficacy %	Significance Tukey at 95%
1	MAGNA BON	1.5	2.00	94.37	B
2	MAGNA BON	2.0	1.75	95.07	B
3	MAGNA BON	2.5	1.25	96.48	B
4	25 SULFACOB	2.5 kg / ha	2.50	92.96	B
5	Absolute control	-	35.50	-----	A





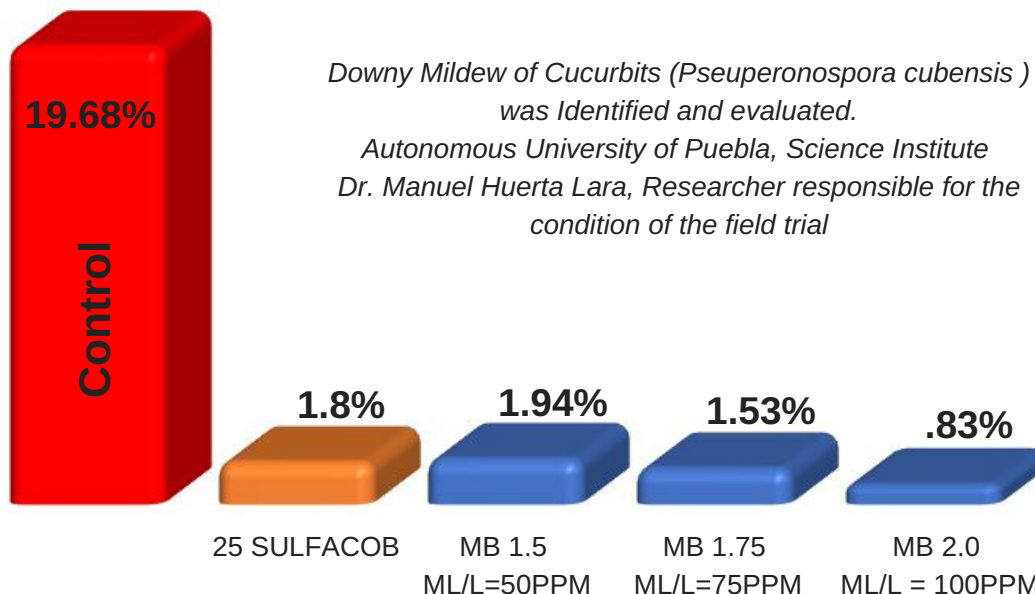
Magna-Bon®

AGRICULTURAL CONTROL SOLUTIONS

CS 2005

Our copper sulphate pentahydrate is designed to help combat disease in cucurbits! With less than an 1/8 lb of copper per acre, **CS 2005** is more environmentally friendly than our competitors!

Evaluation of the Biological effectiveness of Magna Bon **CS 2005** for the control of Downy Mildew on cucurbits in cucumber evaluated pathogen



Conclusion

With dosages of 1.5, 1.75 and 2.0 mL/L of water, **CS 2005** achieved outstanding control of Downy Mildew of Cucurbits (*Pseudoperonospora cubensis*), after three consecutive applications. At 7 day intervals, reaching levels of efficacy of 90 to 96% and maintaining outstanding control.

Application Instructions

*Alternaria Leaf Spot
Angular Leaf Spot
Anthracnose
Downy Mildew
Gummy Stem Blight
Powdery Mildew
Watermelon Bacterial Fruit Blotch*

Begin applications prior to disease development and continue while conditions are favorable for disease development.

Repeat at 5 to 7 day intervals or as needed. Use the higher rates when conditions favor disease.

*Rate/Acre
per 100 gallons of water
19.2 - 25.6 oz*

*PPM's (copper)
per 100 gallons of water
75 - 100 ppm*

LIMITED WARRANTY AND LIMITATION OF REMEDIES

Seller warrants that the product conforms to the chemical description and is reasonably fit for the purpose stated on the label for use under normal conditions, but makes no other warranties of fitness or merchantability expressed or implied, or any other warranty if the product is used contrary to the label instructions or under abnormal conditions not foreseeable to the seller. In no case shall the seller be liable for more than the cost of the product to the buyer, and will in no event be liable for any consequential, special or indirect damages connected with the use or hanging of this product. This product is offered and the buyer or user accepts it's subject to the foregoing terms which may not be varied.

For product information call: 1-800-845-1357

For Internet Information: www:magnabon.com

OR

magna1@strato.net

Amount of CS 2005 per Volume of Water for Proper ppms* of Applied Active Ingredient

ppms* of A.I.	30 gallons per acre	50 gallons per acre	100 gallons per acre	125 gallons per acre	250 gallons per acre	500 gallons per acre
50	3.85 oz.	6.4 oz.	12.8 oz.	16 oz.	32 oz.	64 oz.
75	5.78 oz.	9.6 oz.	19.2 oz.	24 oz.	48 oz.	96 oz.
100	7.70 oz.	12.8 oz.	25.6 oz.	32 oz.	64 Oz.	1 gal.
125	9.6 oz.	16 oz.	32 oz.	40 oz.	80 oz.	1.25 gal.
150	11.5 oz.	19.2 oz.	38.4 oz.	48.oz	96 oz.	1.5 gal.
200	15.4 oz.	25.6 oz.	51.2 oz.	64 oz.	1 gal.	2 gal.
250	19.2 oz.	32 oz.	64 oz.	80 oz.	1.25 gal.	2.5 gal.

*ppms=parts per million

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Chad Gillyard

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AGRICULTURAL CONTROL SOLUTIONS