



BioSafe Systems **RATES & USAGE GUIDE**

For Field, Water, and Post Harvest



Crop 
PROTECTION
& Food
& SAFETY

PROTECT YOUR CROPS. PROTECT YOUR WATER. PROTECT YOUR FUTURE.

BioSafe Systems' agricultural product line offers comprehensive crop protection, water quality, and post harvest solutions. Our activated peroxygen chemistry destroys pathogens on contact, helping conventional and organic farmers and processors kill disease and produce healthy fruits and vegetables.

FIELD APPLICATIONS



OxiDate kills bacterial and fungal pathogens on contact, and with a zero-days to harvest and zero-hour REI (4-hour in CA) growers can spray right up to harvest. Apply as a curative, preventative, or tank mix to help provide immediate knockdown control. OMRI Listed for use in organic production.



TerraClean controls a wide variety of soilborne pathogens such as *Pythium*, *Phytophthora*, *Rhizoctonia*, and *Fusarium*. Apply TerraClean at any stage of plant growth to kill disease, stimulate root development, and increase nutrient uptake.

POST HARVEST



StorOx extends shelf life and reduces spoilage. A chlorine alternative, StorOx leaves no residues and can be used in post harvest applications to kill bacteria and fungi that cause premature decay. OMRI Listed for use in organic post harvest production.



SaniDate 5.0 is a high-strength product for hard surface sanitation, disinfection, and clean-in-place applications for packing shed, food processing, and general premises. SaniDate 5.0 eliminates human health pathogens within seconds and is OMRI Listed for use on hard surfaces.

WATER TREATMENT



GreenCleanPRO treats all types of agricultural waters, eliminating algae on contact. An alternative to copper products, there are no use restrictions with treatment. OMRI Listed for use in organic production.



SaniDate 12.0 is a chlorine alternative designed for the treatment of process irrigation systems and recycled water.

INSECT CONTROL



AzaGuard offers broad spectrum insecticidal control on over 300 insect species. Formulated with the active ingredient azadirachtin, AzaGuard repels insects on treated crops, resulting in the reduction of insect damage to plants. AzaGuard meets all of the requirements of the National Organic Program (NOP). **See AzaGuard Rates and Usage for more information.**

FIELD APPLICATIONS



OXIDATE: FOLIAR SPRAY

TREATMENT	RATE	DIRECTIONS
Foliar Spray - Curative	128 fl. oz. per 100 gallons of water	Apply 30 - 100 gallons of spray solution per treated acre. Spray diseased plants. Good coverage and wetting of the foliage is required. Continue on five to seven day intervals.
Foliar Spray - Preventative	40 fl. oz. per 100 gallons of water	Apply 30 - 100 gallons of spray solution per treated acre. Five day spray intervals.

OXIDATE: SOIL DRENCH

TREATMENT	RATE	DIRECTIONS
Soil Drench	128 fl. oz. per 100 gallons of water	Apply to soil or growing media to the point of saturation. Wait fifteen minutes before planting or watering.

OXIDATE: PRE-PLANT DIP TREATMENT

TREATMENT	RATE	DIRECTIONS
Pre-Plant Dip Treatment	128 fl. oz. per 100 gallons of water	Immerse plants or cuttings; remove and allow to drain. Do not rinse.

OXIDATE: SEED TREATMENT

TREATMENT	RATE	DIRECTIONS
Seed Treatment	64 fl. oz. per 50 gallons of water	Immerse seeds and let soak for two minutes; remove and allow to drain. Do not rinse.

TERRACLEAN: SOIL TREATMENT AT PLANTING - DRENCH APPLICATION

TREATMENT	RATE	DIRECTIONS
Soil Treatment at Planting Drench	128 fl. oz. per 1,000 gallons setting/drench water	Add TerraClean to setting water and make banded or drench application at time of planting.

TERRACLEAN: DRIP IRRIGATION TREATMENT FOR PLANTINGS*

TREATMENT	RATE	DIRECTIONS
5½ - 6 ft.	128 - 192 fl. oz. per acre	Apply through irrigation systems using a 45 - 90 minute run time. Repeat applications as needed.
4 - 5 ft.	192 - 256 fl. oz. per acre	
2½ - 3½ ft.	256 - 320 fl. oz. per acre	

***NOTE:** Soil moisture of the beds should be at or near field capacity prior to TerraClean application. Apply TerraClean through the drip tape at a rate of 12 - 27 fl. oz. per 1,000 feet of row. Injection should be calibrated so that the final dilution ratio of TerraClean to water (v/v) is 1:1,000.

POST HARVEST



STOROX: WASH TANKS & DIP TANKS

TREATMENT	RATE	DIRECTIONS
Wash Tank & Dip Tank	1:1,000	Treat water containing plant pathogens with 1.25 fl. oz. per 10 gallons of water.

STOROX: HYDROCOOLER & DUMP TANK

TREATMENT	RATE	DIRECTIONS
Hydrocooler/Dump Tank - Low Organic Loading	1:5,000 - 1:10,000	For waters that contain biological and organic loading, inject at 2.5 fl. oz. - 1.25 fl. oz. for every 100 gallons of water.
Hydrocooler/Dump Tank - Clean Water	1:10,000 - 1:20,000	For clean water, inject at 1.25 fl. oz. - 0.625 fl. oz. for every 100 gallons of water to prevent the formation of algae, bacteria, and fungi.

STOROX: SPRAY LINE

TREATMENT	RATE	DIRECTIONS
Spray Line	1:100 - 1:1,000	12.5 fl. oz. - 1.25 fl. oz. per 10 gallons of water. Spray fruit or vegetables to run off using hydraulic, backpack, air-assisted, or similar sprayer or foamer.

SANIDATE 5.0: HARD SURFACE SANITATION

TREATMENT	RATE	DIRECTIONS
Hard Surface Sanitation	1.6 - 1.7 fl. oz. per 5 gallons of water	Pre-wash and rinse surfaces or equipment as usual. Apply SaniDate 5.0 solution by wiping, mopping, coarse spray, or by adding to a closed system. Allow a contact time of one minute. Allow items and surfaces to drain thoroughly. No potable water rinse is required.

SANIDATE 5.0: HARD SURFACE DISINFECTION

TREATMENT	RATE	DIRECTIONS
Hard Surface Disinfection	0.5 fl. oz. per gallon of water	Apply solution with a mop, cloth, sponge, or hand trigger spray. Wet all surfaces thoroughly and allow to remain wet for 10 minutes. Rinse with potable water.

WATER TREATMENT



GREENCLEANPRO: IRRIGATION WATER/SURFACE WATER

TREATMENT	RATE	DIRECTIONS
Blue Green Algae	3 - 16 lbs. per acre foot	Broadcast granules over entire volume of water using a hand spreader, gran-blow device, or by hand.
Blue Green Algae and Some Species of Green Algae	17 - 30 lbs. per acre foot	Broadcast granules over entire volume of water using a hand spreader, gran-blow device, or by hand. Apply where filamentous algae is apparent.
Blue Green Algae, More Species of Green Algae, and Some Species of Diatoms	31 - 50 lbs. per acre foot	Broadcast granules over entire volume of water using a hand spreader, gran-blow device, or by hand.
All Blue Green Algae, Green Algae, and Diatoms	51 - 90 lbs. per acre foot	Broadcast granules over entire volume of water using a hand spreader, gran-blow device, or by hand.

SANIDATE 12.0 MICROBIOCIDE: IRRIGATION WATER

TREATMENT	RATE	DIRECTIONS
Irrigation Water Treatment	1:1,000 - 1:5,000	On recycled or contaminated water use suggested rate and/or submit water sample to BioSafe Systems to help determine proper rate.
Preventative Treatment	1:50,000 - 1:100,000	On recycled water that has been prefiltered and has received a curative shock treatment, use suggested rate and/or submit water sample to BioSafe Systems to help determine proper rate.

SANIDATE 12.0 MICROBIOCIDE: FRUIT & VEGETABLE PROCESSING WATERS

TREATMENT	RATE	DIRECTIONS
Preventative Treatment	25.6 - 89.6 fl. oz. per 1,000 gallons of water	Mix SaniDate 12.0 with water either batch wise or continuously. This will provide 200 to 700 ppm of SaniDate 12.0 or 24 to 85 ppm 100% peracetic acid in the use solution.

TANK MIXING WITH OXIDATE

Before tank mixing with fertilizers, fungicides, or bactericides, conduct a compatibility test for each combination. Make a test solution and shake or stir vigorously. Excessive bubbling and/or pressure are indications of incompatibility.

Mixing Instructions:

1. Fill spray tank halfway with water.
2. Add OxiDate.
3. Continue filling and add other chemistries.

- Bravo
- Procure
- Kocide
- Dithane
- Champ
- TriBasic
- Azadirachtin
- Co-Ron
- Vydate
- Microplex
- Lannate
- Elevate
- Serenade
- Captan
- Kumulas Sulfur
- Cal-Bor
- Switch
- Penncozeb
- Manex
- Pristine
- Mancozeb
- Mankocide
- Cuprofix
- Xentari
- Topsin
- Prev-Am
- Daconil

Always refer to container labels. This is intended as a guide, not a complete listing of compatible products. Please contact BioSafe Systems for questions on chemicals that are not listed in the compatibility sheet. It is always recommended to test compatibility of fungicides/insecticides with a jar test.

RATE CONVERSION CHARTS



OXIDATE & STOROX

DILUTION	PERCENTAGE STRENGTH	RATE ^a	TOTAL PRODUCT PPM	H ₂ O ₂ ^b PPM	PAA ^c PPM
1:50	2%	2.5 fl.oz./gallon	20,000	5,400	400
1:100	1%	1.28 fl.oz./gallon	10,000	2,700	200
1:200	0.5%	0.64 fl.oz./gallon	5,000	1,350	100
1:300	0.3%	0.43 fl.oz./gallon	3,333	900	66.6
1:500	0.2%	0.25 fl.oz./gallon	2,000	540	40
1:1,000	0.1%	128 fl.oz./1,000 gallons	1,000	270	20

^aFluid ounces (fl.oz); ^bHydrogen Peroxide; ^cPeroxyacetic Acid

SANIDATE 5.0

DILUTION	PERCENTAGE STRENGTH	RATE ^a	TOTAL PRODUCT PPM	H ₂ O ₂ ^b PPM	PAA ^c PPM
1:50	2%	2.5 fl.oz./gallon	20,000	4,600	1,060
1:100	1%	1.28 fl.oz./gallon	10,000	2,300	530
1:200	0.5%	0.64 fl.oz./gallon	5,000	1,150	265
1:300	0.3%	0.43 fl.oz./gallon	3,333	767	177
1:500	0.2%	0.25 fl.oz./gallon	2,000	460	106
1:1,000	0.1%	128 fl.oz./1,000 gallons	1,000	230	53

^aFluid ounces (fl.oz); ^bHydrogen Peroxide; ^cPeroxyacetic Acid

TERRACLEAN

DILUTION	PERCENTAGE STRENGTH	RATE ^a	TOTAL PRODUCT PPM	H ₂ O ₂ ^b PPM	PAA ^c PPM
1:50	2%	2.5 fl.oz./gallon	20,000	5,400	1,000
1:100	1%	1.28 fl.oz./gallon	10,000	2,700	500
1:200	0.5%	0.64 fl.oz./gallon	5,000	1,350	250
1:300	0.3%	0.43 fl.oz./gallon	3,333	900	167
1:500	0.2%	0.25 fl.oz./gallon	2,000	540	100
1:1,000	0.1%	128 fl.oz./1,000 gallons	1,000	270	50

^aFluid ounces (fl.oz); ^bHydrogen Peroxide; ^cPeroxyacetic Acid

SANIDATE 12.0

DILUTION	PERCENTAGE STRENGTH	RATE ^a	TOTAL PRODUCT PPM	H ₂ O ₂ ^b PPM	PAA ^c PPM
1:3,000	0.03%	43 fl.oz./1,000 gallon	333	61.6	40
1:4,000	0.025%	32 fl.oz./1,000 gallon	250	46.25	30
1:5,000	0.02%	25.6 fl.oz./1,000 gallon	200	37	24
1:10,000	0.01%	12.8 fl.oz./1,000 gallon	100	18.5	12
1:16,000	0.00625%	8.0 fl.oz./1,000 gallon	62.5	11.6	7.5
1:20,000	0.005%	6.4 fl.oz./1,000 gallon	50	9.25	6.0
1:32,000	0.003125%	4.0 fl.oz./1,000 gallon	31.25	5.8	3.7
1:50,000	0.002%	2.56 fl.oz./1,000 gallon	20	3.7	2.0
1:100,000	0.001%	1.28 fl.oz./1,000 gallon	10	1.85	1.0

^aFluid ounces (fl.oz); ^bHydrogen Peroxide; ^cPeroxyacetic Acid

