

# OxiDate® 5.0

## Tank-Mix and Product Compatibility Guide



This guide serves as a reference for OxiDate 5.0 only, and it should **not** be used to determine compatibility for OxiDate 2.0 or any other peroxyacetic acid material.

### Sprayer Guidelines

OxiDate 5.0 is an oxidizing agent with a low pH (<1.5) that reacts negatively with chemistries that have a metal ion in their formulation. It is important to rinse out spray tanks prior to using OxiDate 5.0 to prevent any reaction with residues in the tank.

### Tank-Mixing Instructions

1. Fill the tank  $\frac{1}{2}$  full of the required water volume.
2. Start agitation when the tank is  $\frac{1}{2}$  full before adding OxiDate 5.0 and continue agitation through the mixing process.
3. Add the needed amount (recommended % v/v) of OxiDate 5.0 for total tank-mix volume.
4. Add additional water to bring the tank to  $\frac{3}{4}$  full of the total desired solution volume.
5. Add any compatibility agents and anti-foamers, as necessary.
6. Begin adding the remaining pesticides to the tank in the following order based on formulation type: water-soluble packets; dry formulations, dry or solid anti-drift agents; dispersed liquid formulations, liquid drift retardants; remaining liquid formulations, then add any additional necessary adjuvants and compatible fertilizers last.
7. Be sure to wait 3–5 minutes before adding each formulation type to ensure proper mixing.
8. Add the remaining water needed to fill the tank to the total solution volume.

### Tank-Mixing Notes

1. Wait at least 48–72 hours after a metal-based foliar application has been made before applying OxiDate 5.0. It is recommended that no more than 2–3 additional products are added to a tank-mix solution for ground applications and only 1–2 additional products in low water volume for aerial or electrostatic applications.
2. Metal-based pesticides/fertilizers can be applied after an application of OxiDate 5.0 once leaf surfaces have fully dried.
3. Do not tank-mix with biological-based biopesticides such as, *Gliocladium* species, *Beauveria* species, and *Bt* species.
4. Coverage is critical, use appropriate nozzles and solution volume (GPA) based on crop and canopy density. Thoroughly apply solution to ensure full coverage of plant tissue. The use of a non-ionic surfactant is recommended to improve results. Do not use any surfactant/adjuvant, other than non-ionic surfactants, without consulting BioSafe Systems.

**Caution:** Never add OxiDate 5.0 to a super concentrated solution containing other pesticides. OxiDate 5.0 must be 80% diluted prior to adding any other pesticides to the tank-mix, especially in low water volume mixtures like aerial applications.

### Additional Notes

OxiDate 5.0 is physically compatible with many commonly used pesticides, fertilizers, and surfactants/adjuvants. However, since the formulations of products change, it is important to test the physical compatibility of desired tank mixes and check for undesirable physical effects, including settling out or flocculation. A jar compatibility test is recommended prior to tank mixing with other pesticides and/or adjuvants/additives, to ensure the compatibility. The products listed were tested for compatibility in a one-on-one mixture with OxiDate 5.0 to determine overall physical compatibility. Tank-mix solutions with more than one additional product were not evaluated, thus loaders/mixers/applicators should take precautions with creating these types of multiple material mixtures by conducting jar tests.

Chemical incompatibility is a change in the performance of products resulting from chemical interactions that occur in the spray tank. In these cases, the products can be mixed and applied with no visible signs of incompatibility, however, the effectiveness of the products may be affected. BioSafe Systems can make no guarantee to the occurrence of any chemical incompatibility during mixture and application with another material, when mixed with OxiDate 5.0.

**Plant Sensitivity:** not all plants and their varieties have been tested for phytotoxicity; therefore, a small site application should be made on the crop to be treated to ensure that a phytotoxic response will not occur because of application.

## Fungicides & Bactericides

Active Ingredient	Brand Name(s)	Compatibility	Notes
Acibenzolar-S-methyl	Actigard 50WG	●	<b>Only compatible</b> when using a rate of 2 oz/10 gals of Actigard 50WG and OxiDate 5.0 at 1:200.
Azoxystrobin	Quadris, Abound	●	
Azoxystrobin + difenconazole	Qaudris Top	●	
Azoxystrobin + propiconazole	Avaris, Avaris 2XS	●	
Benzovindiflupyr + azoxystrobin + propiconazole	Trivapro	●	
Benzovindiflupyr + difenoconazole	Aprovia Top	●	<b>Only compatible</b> at 1:200 with OxiDate 5.0.
Boscalid	Endura	●	
Boscalid + pyraclostrobin	Pristine	●	
Captan	Captan Gold 80WDG, Captan Gold 4L	●	
Chlorothalonil	Bravo Weather Stik	●	
Cyazofamid	Ranman	✗	
Cyprodinil + fludioxonil	Palladium	✗	
Cyprodinil + difenoconazole	Inspire Super	●	<b>Only compatible</b> at 1:200 with OxiDate 5.0.
Famoxadone	Tanos	●	
Fenhexamid	Elevate, Decree	●	
Fludioxonil	Scholar Max	✗	
Fluopicolide	Presidio	●	
Fluopyram + difenoconazole	Luna Flex	●	
Fluopyram + pyrimethanil	Luna Tranquility	●	
Fluopyram + tebuconazole	Luna Experience	●	<b>Only compatible</b> at 1:200 with OxiDate 5.0.
Fluopyram + trifloxystrobin	Luna Sensation	●	
Fluxapyroxad + pyraclostrobin	Priaxor Xemium	●	
Fosetyl-aluminum	Aliette	✗	
Iudioxonil + pydiflumetofen	Miravis Prime	●	<b>Only compatible</b> at 1:200 with OxiDate 5.0.
Mancozeb	Manzate, Penncozeb, Dithane	/	Contact your BioSafe Systems technical representative for further instructions.
Mancozeb & copper	Mankocide	/	Contact your BioSafe Systems technical representative for further instructions.
Mandipropamid	Revus	●	
Mefenoxam	Ridomil Gold SL	✗	
	Ultra Flourish	●	Need to spray solution within 4-6 hours.
Metconazole	Quash	●	
Myclobutanil	Rally, Eagle 20EW	●	

## Fungicides & Bactericides

Active Ingredient	Brand Name(s)	Compatibility	Notes
Oxathiapiprolin + mandipropamid	Orondis Ultra	●	
Salts of phosphorus acid	OxiPhos, Kphite, Phostrol, Fosphite	●	<b>Only compatible</b> at 1:200 with OxiDate 5.0.
Potassium phosphite + tebuconazole	Viathon	●	
Picoxystrobin	Approach	●	
Propamocarb hydrochloride	Previcur FLEX	●	
Propiconazole	Tilt, Bumper, Banner, Quilt	●	
Prothioconazole	Proline	●	
Prothioconazole + trifloxystrobin	Stratego YLD	●	
Pydiflumetofen + azoxystrobin + propiconazole	Miravis Neo	✘	
Pyraclostrobin + metconazole	Headline Amp	●	
Pyrimethanil	Scala	●	
Quinoxifen	Quintec	●	<b>Only compatible</b> at 1:200 with OxiDate 5.0.
Tebuconazole	Folicur	●	
Tetraconazole	Domark, Eminent, Minerva	●	
Thiophanate-methyl	Topsin	●	
Thiram	Thiram SC	✘	
Triphenyltin hydroxide	Super Tin 4L	●	
Trifloxystrobin	Flint, Gem	●	
Triflumizole	Procure	●	

## Copper Fungicides & Bactericides

Copper octanoate	Cueva	●	<b>Only compatible</b> with Cueva rates 2 gals/30 gals and 2 gals/100 gals with OxiDate 5.0 at 1:256 and 1:500.
Copper sulfate pentahydrate	Maga-Bon CS 2005	●	<b>Only compatible</b> with Magna-Bon CS 2005 at 32 fl. oz/100 gals when combined with OxiDate 5.0 at 1:400-1:100.
Cuprous oxide	Nordox 30-30	●	<b>Only compatible</b> with NORDOX 30/30 WG rate 1 lb/100 gals and OxiDate 5.0 at 1:200.
	Nordox 75 WG	●	<b>Only compatible</b> with NORDOX 75 WG rate of 1-2 lbs/100 GPA when combined with OxiDate 5.0 at 1:200.
Copper hydroxide	Nu-Cop 50 WP	✘	
Copper hydroxide	Champ DP, ChampION++, Kocide 3000-O	✘	

## Copper Fungicides & Bactericides

Active Ingredient	Brand Name(s)	Compatibility	Notes
Copper hydroxide + copper oxychloride	Badge SC, Badge X2	✘	Wait 48-72 hours after copper application before applying OxiDate 5.0
Copper Sulfate	Agri Star Basic Copper 53, Cuprofix Ultra	✘	Wait 48-72 hours after copper application before applying OxiDate 5.0

**Plant Sensitivity:** not all plants and their varieties have been tested for phytotoxicity; therefore, a small site application should be made on the crop to be treated to ensure that a phytotoxic response will not occur when tank mixing with OxiDate 5.0.

## Sulfur Fungicides

Sulfur	Golden Micronized Sulfur	●	Only compatible with Sulfur at 5 lbs/100 gal when combined with OxiDate 5.0 at 1:256.
	Microthiol Disperss	✘	
Sulfur, dusting	Misc. brands	✘	Apply OxiDate 5.0 before or 72 hours after dusting sulfur application.

**Plant Sensitivity:** not all plants and their varieties have been tested for phytotoxicity; therefore, a small site application should be made on the crop to be treated to ensure that a phytotoxic response will not occur when tank mixing with OxiDate 5.0.

## Biological and Biorational Fungicides & Bactericides

	<b>Foliar Applications:</b> Serenade, Sonata, Double Nickel		Foliar applications of <i>Bacillus</i> spp. products are compatible, when the mode of action (MOA) is primarily by metabolites triggering ISR/SAR and other antimicrobial properties. When the (MOA) is dependent on spore colonization on leaf surface, mixture is not compatible.
<i>Bacillus</i> species	<b>Foliar Applications:</b> all other brands not listed above		Multiple <i>Bacillus</i> spp. based products are commercially available, as a result the varying primary MOAs and their compatibilities with OxiDate 5.0 have not all been verified. Contact your BioSafe Systems technical representative for further instructions.
	<b>Soil Applications:</b> all brands		<i>Bacillus</i> spp. in soil applications is not tank-mix compatible; however, an application of OxiDate 5.0 can be applied to the soil prior to the applications of <i>Bacillus</i> -based products. Contact your BioSafe Systems technical representative for further instructions.
Eugenol, Geraniol, Thymol	Mevalone	✘	
<i>Gliocladium</i> species	Prestop, SoilGard	✘	
Laminarin	Vacciplant	●	
Lime sulfur	Multiple brands	✘	
Oxytetracycline	MycoShield, Fireline	●	<b>Only compatible</b> at 1 lb/100 gals when combined with OxiDate 5.0 at 1:100 to 1:256. Agitate continuously and spray within 4-6 hours.
Paraffinic oil	JMS Stylet Oil	●	<b>Only compatible</b> at 1:200 with OxiDate 5.0.
Potassium bicarbonate	Kaligreen, Carb-O-Nator	✘	

## Biological and Biorational Fungicides & Bactericides

Active Ingredient	Brand Name(s)	Compatibility	Notes
Polyoxin D zinc salt	Oso, Ph-D	●	
<i>Pseudomonas chlororaphis</i>	Howler	●	
<i>Reynoutria sachalinensis</i>	Regalia	●	
<i>Saccharomyces cerevisiae</i>	Romeo	/	<b>Only compatible</b> at 0.91 lbs/100 gallons with OxiDate 5.0 at 1:100.
<i>Streptomyces</i> sp.	Actinovate, MycoStop	✘	Contact your BioSafe Systems technical representative for further instructions.
Streptomycin sulfate	AgriMycin, Harbour, Firewall	●	
Sodium carbonate peroxyhydrate	<b>PerCarb</b>	✘	Not compatible due to a high pH.
Tea tree oil	Timorex Gold	✘	
Thyme oil	<b>Guarda</b>	●	Other thyme oil products have not been evaluated.

## Insecticides & Miticides

Abamectin	Avid 0.15EC	●	
Abamectin + cyantraniliprole	MinectoPro	●	
Acetamiprid	Assail 30SG	●	
Beta-Cyfluthrin	Baythroid XL	●	
Bifenazate	Floramite SC	✘	
Carbaryl	Sevin SL	●	
Chlorantraniliprole	Altacor, Coragen	●	
Cyclaniliprole	Harvanta 50 SL	●	Need to spray solution within 4-6 hours.
Diflubenzuron	Cavalier, Dimilin, Micromite 2L	●	
Dimethoate	Dimethoate LV-4	✘	
Dinotefuran	Venom	●	
Emamectin benzoate	Proclaim	●	
Flupyradifurone	Sivanto	●	
Horticultural oils	Dormant Oil 435	●	<b>Only compatible</b> at 1:200 with OxiDate 5.0.
Imidacloprid	Admire, Merit	●	
Indoxacarb	Avaunt eVo	●	<b>Only compatible</b> at 1:200 with OxiDate 5.0.
Lambda-cyhalothrin	Lambda T-2	●	Need to spray solution within 4-6 hours.
Methoxyfenozide	Intrepid 2F	●	
Spiromesifen	Oberon 2 SC	●	
Spirotetramat	Movento	●	
Thiamethoxam	Actara	●	
Tolfenpyrad	Apta	●	
Zeta-cypermethrin	Mustang	●	

## Biological and Biorational Insecticides & Miticides

Active Ingredient	Brand Name(s)	Compatibility	Notes
Azadirachtin	<b>AzaGuard</b> , Aza-Direct, Neemix 4.5	●	
<i>Bacillus thuringiensis</i> species	<b>BT NOW</b> , Agree, Javelin, Dipel, XenTari	✘	
<i>Beauveria bassiana</i>	<b>BioCeres WP</b> , BotaniGard, BoteGHA ES	✘	
<i>Burkholderia</i> species	Venerate	/	
Chromobacterium subtsugae	Grandevo	/	
<i>Isaria fumosorosea</i>	PFR-97	✘	
Metarhizium anisopliae	Met 52 EC	✘	
Geraniol/peppermint oil/rosemary oil	Ecotec Plus	●	<b>Only compatible</b> at 1:200 with OxiDate 5.0.
Mineral oil	TriTek, Sol-oil 97, BioCover MLT, PureSpray Green	●	<b>Only compatible</b> at 1:200 with OxiDate 5.0.
Neem oil	Triology, Triact 70	●	<b>Only compatible</b> at 1:200 with OxiDate 5.0.
Paraffinic oil	JMS Stylet Oil	●	<b>Only compatible</b> at 1:200 with OxiDate 5.0.
Potassium salts of fatty acids	M-Pede	/	<b>Only compatible</b> with M-Pede at 2% when combined with OxiDate 5.0 at 1:100 and 1:200. M-Pede spray solution requires a minimum 8.0 pH; apply within one hour of mixing.
Pyrethrins	Pyganic EC	●	
Spinetoram	Radiant SC	●	
Spinosad	Entrust	●	
Virus-based	AgriPhage, CYD-X HP, GemStar, Madex HP	/	Contact your BioSafe Systems technical representative for further instructions.
<b>Adjuvants</b>			
Alkyl aryl polyoxyalkane ethers, alkanolamides, dimethyl siloxane, free fatty acids	Induce	●	
Alkyl phenol ethoxylate	Activator 90	●	
Alcohol ethoxylate	Wetcit, Oroboost, Vintre	●	
Blend of ammonium polyacrylates, hydroxy carboxylates and sulphates	ReQUEST	●	
Inert ingredients	Argosy RF	✘	
Modified vegetable oil, polyoxyethylene sorbitan fatty acid ester, vegetable oil, and soybean oil, ethoxylated	Masterlock	●	
N/A	Black Label	●	
Non-ionic surfactants	Attach, Dyne-Amic, LI-700, Liberate, Leaf Life Widespread Organic, Induce, Regulaid	●	Combination of OxiDate 5.0 and these materials must be used within 1-3 hours of mixing.

## Adjuvants

Active Ingredient	Brand Name(s)	Compatibility	Notes
Spreader/stickers	Cohere	●	
Oil based surfactant	Cide Winder	●	<b>Only compatible</b> at 1:200 with OxiDate 5.0.
Organosilicone	Kinetic, Silwet L-77, Widespread Max, Tactic	●	Use the lowest rate of the surfactant with OxiDate 5.0 at 1:200 (0.5% v/v).
Polymers	AquaBoost AG30, AquaBoost AG30 NWS	●	
Polyether modified heptamthyltrisloxane	Stik-Kote	●	
Quillaja	QuillajaChoice	●	
Yucca (Saponin)	Yucca Ag-Aide	●	

## Biostimulants

CalOx FT		●	
eXploit		●	
Kelp	Maritime <i>(Ascophyllum nodosum)</i>	●	
	Oceano Max <i>(Ecklonia maxima)</i>	●	
	Misc. brands	/	Not all sea kelp products are formulated the same and must be jar tested prior to tank-mixing with OxiDate 5.0.
OmniPro (humic acid)		●	

## Fertilizers

AGRO-MOS Copper	●
Black Label 6-22-0	●
Black Label Zn (6-20-0 + 0.77Zn)	✘
Calcium nitrate	●
Calcium sulfate	✘
Calcium metalosate (CML)	●
FertiRain 12-3-3	✘
Foli-Gro Tidalwave 5-0-0	●
Grower's Mineral Solutions	✘
KaMin	●
Keyplex 120	●
LiberateCa	✘
LOKOMOTIVE (2-0-25)	✘

## Fertilizers

Active Ingredient	Brand Name(s)	Compatibility	Notes
Metalosate Calcium 2-0-0		●	
Metalosate Copper		●	
Metalosate Iron		✘	
Metalosate Magnesium		●	
Metalosate Manganese		/	<b>Only compatible</b> with Metalosate Manganese at 32 fl. oz/100 gals when combined with OxiDate 5.0 at 1:256.
Metalosate Zinc		●	
MicroLink Boron		●	
Mg sulfate 9.8% (Epsom Salt)		●	
Mn sulfate 32%		●	Needs to be sprayed within 4 hours.
Potassium acetate (Ace 29)		/	<b>Only compatible</b> with ACE 29 at 8 qt/100 gallons with OxiDate 5.0 at 1:200. Use within 1 hour of mixing.
NACHURS Finish Line		●	
NACHURS K-Fuel		●	
NACHURS Triple Option		●	
Nutri-Leaf 20-20-20		/	<b>Only compatible</b> with NUTRI-LEAF 20-20-20 at 5-10 lbs/100 gallons with OxiDate 5.0 at 1:100.
NutriSync 3D		●	
Oceano Max, kelp ( <i>Ecklonia maxima</i> )		●	
<b>Parka</b>		●	
Sure-K 2-1-6		●	
UAN (28-32)-0-0		●	<b>Only compatible</b> at 1:200 with OxiDate 5.0.
Urea		●	<b>Only compatible</b> at 1:200 with OxiDate 5.0.
Utilize PK 0-3-2		●	
Zn Sulfate 35.5%		●	

OxiDate 5.0 has been shown to be tank-mix compatible with many fertility products; however, not all materials and their varying formulations have been tested. It is highly recommended that you contact your local BioSafe Systems technical representative for further guidance on specific tank mixes with these materials.

## Plant Growth Regulators (PGRs)

Indolebutyric acid + cytokinin as kinetin	Radiate	●	
Gibberellic acid	ProGibb LV Plus	●	



## Herbicides

Active Ingredient	Brand Name(s)	Compatibility	Notes
Dicamba	Engenia	●	
2,4-dichlorophenoxyacetic acid, butoxyethyl ester + triclopyr BEE: 3,5,6-trichloro-2-pyridinyloxyacetic acid, butoxyethyl ester	Crossbow	●	
2,4-D, choline salt	Enlist One	●	
Cloransulam-methyl	First Rate	●	
Clopyralid	Spur	●	
Fomesafen	Sinister	●	Needs to be sprayed within 1 hours.
Sodium salt of acifluorfen	Ultra Blazer	●	
2-Ethylhexyl ester of 2, 4-Dichlorophenoxyacetic acid	Barrage HF	●	
Lactofen	Cobra	●	Needs to be sprayed within 4 hours.
Caprylic acid + capric acid	Homeplate	●	
Pelargonic acid	Scythe	●	
Atrazine	Atrazine	●	Needs to be sprayed within 4 hours.
Indaziflam	Alion	●	
Saflufenacil	Treevix	●	

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