



OROSORB[®]

DUO

READ THE ATTACHED PACKAGED LEAFLET BEFORE USE • KEEP OUT OF REACH OF CHILDREN AND ANIMALS

ZEMA Product No: LSK/PTS/00043/Z02/2018:IP-PN:4233

PESTICIDE AND SURFACTANT

A soluble liquid pesticide for the control of insects, mites, and diseases as indicated in specified crops and surfactant for use with pesticides, herbicides, and foliar nutrients.



WARNING

HAZARD STATEMENTS:

- May cause an allergic skin reaction
- Causes serious eye irritation
- Harmful if inhaled
- Harmful to aquatic life

PRECAUTIONARY STATEMENTS:

- Do not eat, drink or smoke when using this product
- Wash after use
- Avoid release to the environment
- Wear eye protection

ACTIVE INGREDIENTS

Orange oil

50 g/ℓ

Non-ionic surfactant

68 g/ℓ

MANUFACTURED BY:

Oro Agri SA (Pty) Ltd.

REG. No 2001/027414/07

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SEE CONTAINER FOR:

NETMASS/BATCHNO./MANUFACTURINGDATE

DISTRIBUTED BY:

ATS Agrochemicals Limited

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WARNING



WARNINGS

- MAY CAUSE AN ALLERGIC SKIN REACTION.
- CAUSES SERIOUS EYE IRRITATION.
- HARMFUL IF INHALED.
- HARMFUL TO AQUATIC LIFE
- STORE IN A COOL, DRY PLACE AWAY FROM FOOD AND FEEDS
- RE-ENTRY: Do not enter the treated area before the spray deposit has dried unless wearing protective clothing
- Keep out of reach of children, uninformed persons, and animals.

PRECAUTIONS

- DO NOT EAT, DRINK OR SMOKE WHEN USING THIS PRODUCT.
- WASH AFTER USE
- AVOID RELEASE TO THE ENVIRONMENT
- WEAR EYE PROTECTION
- IF SKIN IRRITATION OR RASH OCCURS: GET MEDICAL ADVICE/ ATTENTION.
- IF EYE IRRITATION PERSISTS: GET MEDICAL ADVICE/ ATTENTION
- Wash contaminated clothing daily
- Do not eat, drink, or smoke whilst applying or preparing the spray mix, or before washing your face and hands
- Prevent drift of spray mist onto other crops, grazing, rivers, dams, and areas not under treatment
- Clean applicator after use and dispose of water where it will not contaminate rivers, dams, grazing, and crops
- Prevent contamination of food, feeds, drinking water, and eating utensils.
- Empty all pesticides from the container by placing it upside down over the spray tank and holding it there for at least 30 seconds
- Triple rinse statement:
 - - Fill empty container with one quarter of clean water
 - - Shake for 30 seconds
 - - Decant into spray tank for 30 seconds
- NEVER USE THE CONTAINER FOR ANY OTHER PURPOSE. Puncture the rinsed container to render it useless and send it to a CropLife SA-approved recycler. PET containers cannot be recycled and must be incinerated after cleaning.

FIRST AID

- In case of inhalation:
- If breathed in, move person into the fresh air. If not breathing, give artificial respiration. In case of discomfort seek medical attention.
- In case of skin contact:
- Remove contaminated clothing; wash affected area with water for 15 minutes. In case of discomfort or irritation seek medical attention.
- In case of eye contact:
- Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. Seek medical advice if symptoms or irritation persist.
- In case of ingestion:
- Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Seek medical attention if you feel unwell.

DISCLAIMER: Although this remedy has been extensively tested under a large variety of conditions the registration holder does not warrant that it will be efficacious under all conditions because the action and effect thereof may be affected by factors such as abnormal climatic and storage conditions; quality of dilution water; compatibility with other substances not indicated on the label as well as by the method, time and accuracy of the application. The registration holder furthermore does not accept responsibility for damage to crops, vegetation, the environment or harm to man or animal or for lack of performance of the remedy concerned due to failure of the user to follow the label instructions or to the occurrence of conditions, which could not have been foreseen in terms of the registration.

CONSULT THE SUPPLIER OR REGISTRATION HOLDER IN THE EVENT OF ANY UNCERTAINTY.

MODE OF ACTION

USE ONLY AS DIRECTED

PESTICIDE

- When applied at rates of 200mℓ / 100ℓ and higher **OROSORB® DUO** is a contact pesticide with no residual activity.
- Orange oil breaks down protective layers on insects, mites and external mycelia of fungi. Physical disruption and breakdown of the protective layers occur only upon direct contact while the spray residue remains wet and results in the desiccation of the organism.

ADJUVANT

- At rates of 15-200mℓ / 100ℓ **OROSORB® DUO** drastically reduces the surface tension of water through the action of the non-ionic surfactant. This ensures even spreading of the spray mixture on the plant surface.
- The orange oil component assists with the wetting of hydrophobic surfaces of insects, mites and fungi and with wetting of hairy and waxy plant surfaces, such as onions, cole crops and certain weeds..

DIRECTIONS FOR USE

USE ONLY AS DIRECTED

GROUND APPLICATION

ONLY SUITABLE APPLICATION EQUIPMENT MUST BE USED

- **EVEN DISTRIBUTION OF DROPLETS IS OF THE UTMOST IMPORTANCE FOR ALL APPLICATIONS.**
- Ensure that both surfaces of the leaves (top and bottom) are thoroughly wet, up to just before the point of run-off.
- When used as a pesticide it is essential that the spray solution makes direct contact with the target organism during application.

COMPATABILITY

- Do not add any surfactants to the spray mixture when applying **OROSORB® DUO**. Buffers or acidifiers can be used with a **OROSORB® DUO** application. In such a case the buffer or acidifier must be added first, followed by the chemicals and then **OROSORB® DUO** at the end, just before reaching the final volume in the spray tank.
- **OROSORB® DUO** is compatible with most crop protection products and foliar fertilizers.
- In case of doubt do not mix **OROSORB® DUO** with other products unless prior tests including compatibility and phytotoxicity tests have shown the combination to be physically compatible, effective and non-injurious to the target crop under local conditions.
- A phytotoxicity test must also be done if visible residues of previously applied crop protection chemicals or foliar fertilizers are present on fruit as these may be loosened by the **OROSORB® DUO** application and washed down to collect in a droplet thus increasing the risk of phytotoxic blemishes on the fruit.
- If in doubt, consult the technical representative of the distributor.
- In the event of any of these prescriptions not having been followed, the manufacturer and its distributors accept no responsibility for any possible damage or harmful consequences that may ensue.
- **Although OROSORB® DUO has been exempted from maximum residue levels (MRL) and has no pre-harvest withholding period, consult the labels of tank-mix products to ensure adherence to withholding periods between the last application and harvest periods of these products.**

IMPORTANT GUIDELINES

USE ONLY AS DIRECTED

- The surfactant properties of **OROSORB® DUO** may result in dislodging residual spray material in the spray tank and hoses. Ensure that the spray tank and hoses are properly cleaned before applying **OROSORB® DUO**.
- Do not apply **OROSORB® DUO** over the crop in equipment that has previously been used for herbicides
- Do not use **OROSORB® DUO** on pear fruit, table grape bunches or persimmon fruit during the period from blossom to harvest.

DOSAGE RATES

ALL CROPS

SURFACTANT USE

	APPLICATION RATE	
Applications that require normal wetting	15 - 50 mℓ	per 100 ℓ water
Applications that require above average wetting or to enhance the efficacy of pesticide applications EG. CRUCIFERAE, ONIONS AND CITRUS	100 mℓ	per 100 ℓ water
When using OROSORB® DUO in an adjuvant role, do not exceed 100 mℓ/ha on citrus crops.		
Applications that require above average wetting to improve control of problem insects EG. MEALYBUG AND SCALE	200 mℓ	per 100 ℓ water

GARDENS

	APPLICATION RATE	
Applications that require normal wetting	15 mℓ	per 10 ℓ water

HERBICIDE USE

	APPLICATION RATE	
<ul style="list-style-type: none">Use the higher rate on weeds that are difficult to control or in applications using less than 200 ℓ of water per hectare.In mixtures with herbicides OROSORB® DUO must be applied at a minimum dosage of 200 mℓ per hectare.	100 - 200 mℓ	per 100 ℓ water

PESTICIDE USE

CUCURBITS

PEST / DISEASE	APPLICATION RATE	REMARKS
Whitefly <i>Bemisia tabaci</i>	0.5 ℓ OROSORB® DUO per 100 ℓ water 0.5% solution	<ul style="list-style-type: none">Applications should start within three weeks after emergence of seedlings and continued as a weekly spray programme (7-day intervals) as long as needed.Thorough wetting of both sides of the leaves must be ensured at all times.
Powdery Mildew <i>Sphaerotheca fuliginea</i>	0.5 ℓ OROSORB® DUO per 100 ℓ water 0.5% solution	<ul style="list-style-type: none">DO NOT SPRAY TO THE POINT OF RUN-OFF.RECOMMENDED SPRAY VOLUME: 500 ℓ/ha

CITRUS

PEST / DISEASE

APPLICATION RATE

REMARKS

Citrus Black Spot

*Guignardia
citricarpa*

0.1 ℓ **OROSORB® DUO** +
150 g mancozeb 800WP +
20-30 ml azoxystrobin 25OSC

OR

10 ml pyraclostrobin 25OEC
per 100 ℓ water

- A preventative programme for the control of citrus black spot should commence with a mancozeb 800WP application (as registered) at fruit set.
- Apply the first **OROSORB® DUO** + mancozeb 800WP + azoxystrobin 25OSC or pyraclostrobin 25OEC application no later than 24 days after the last mancozeb 800WP application, and follow up with a second **OROSORB® DUO** + mancozeb 800WP + azoxystrobin 25OSC or pyraclostrobin 25OEC application 6 weeks later.
- Complete the program with a mancozeb 800WP application (as registered) no later than 6 weeks after the second **OROSORB® DUO** + mancozeb 800WP + azoxystrobin 25OSC or pyraclostrobin 25OEC application.
- Apply as high volume applications to ensure proper coverage of fruit to be protected, and use the higher rate of azoxystrobin 25OSC if conditions are favourable for black spot development or high infection levels were experienced the previous season.
- **NOTE:** Consult the mancozeb 800WP, azoxystrobin 25OSC or pyraclostrobin 25OEC labels for details.

0.1 ℓ **OROSORB® DUO** +
150 g mancozeb 800WP
per 100 ℓ water

- Apply not later than 24 days after the mancozeb 800WP application at petal drop (as registered) and repeat 4-5 times at 24 day intervals.
- **NOTE:** Consult the mancozeb 800WP label for details.

0.1 ℓ **OROSORB® DUO** +
200 g mancozeb 800WP +
50 g benomyI 500WP
per 100 ℓ water

- Only use benomyI 500WP in orchards where benzimidazole resistance is absent.
- Precede the **OROSORB® DUO** + mancozeb 800WP + benomyI 500WP application with an application of mancozeb 800WP at 200 g / 100 liters of water (as registered) in the last week of October.
- Apply one **OROSORB® DUO** + mancozeb 800WP + benomyI 500WP application as a full cover spray between the 1st and 20th of December.
- If obtaining sufficient fruit cover is a concern, two sprays of **OROSORB® DUO (0.1ℓ)** + mancozeb 800WP (200 g) + benomyI 500WP (25g / 100 ℓ water) can be applied during the last half of November and the first week of January respectively.
- **NOTE:** Consult the mancozeb 800WP and benomyI 500WP labels for details.

PEST / DISEASE	APPLICATION RATE	REMARKS
<p>Citrus Thrips <i>Scirtothrips aurantii</i></p>	<p>0.2 l OROSORB® DUO per 100 l water 0.2% solution</p>	<ul style="list-style-type: none"> • Apply between 80% and 100% petal drop as preventative application. • Since OROSORB® DUO is not restricted by a pre-harvest interval or maximum residue level, the product can be used as a late corrective application up to harvest, once fruit has coloured up.
<p>Red Scale <i>Aonidiella aurantii</i></p>	<p>0.2 - 0.4 l OROSORB® DUO per 100 l water 0.2 - 0.4% solution</p>	<ul style="list-style-type: none"> • The use of OROSORB® DUO for the control of Red Scale should only commence once fruit has coloured up.
<p>Citrus Red Mite <i>Panonychus citri</i></p>	<p>0.2 l OROSORB® DUO per 100 l water 0.2% solution</p>	<ul style="list-style-type: none"> • Apply when the first signs of a red mite infestation are observed. • A repeat application 5 to 7 days after the first are recommended.

Do not apply **OROSORB® DUO** on Citrus crops at rates exceeding 100 ml/h_a in the period from 100% Petal Fall up to and including colour break.

PEST / DISEASE

APPLICATION RATE

REMARKS

Mealybug*Planococcus ficus*

0.5 ℓ OROSORB® DUO
per 100 ℓ water
0.5% solution

- Monitor for mealybug movement and start spray application against mealybug as soon as crawlers are observed on shoots or leaves. Repeat application after 7 days if further crawler movement is observed
- Ants must be controlled separately before mealybug control is done.
- **RECOMMENDED SPRAY VOLUME:** 750 ℓ/ha to 1000 ℓ/ha, depending on vine size.

Powdery Mildew*Uncinula necator*

0.25 - 0.5 ℓ OROSORB® DUO
per 100 ℓ water
0.25 - 0.5% solution

- A programme for the control of powdery mildew should commence when the longest shoots reach a length of 2-5 cm. Use conventional residual fungicides up to flowering.
- The optimal window for use of **OROSORB® DUO** will be after flowering up to harvest or during the period when mealybug crawler movement is expected (see mealybug recommendation).
- Apply **OROSORB® DUO** at 7-10 day intervals as part of a powdery mildew control program, alternating with products with different modes of action. **OROSORB® DUO** has a non-specific contact action and is therefore suitable for use in an anti-resistance programme against powdery mildew.
- Preferably use a disease forecasting model as well as disease history of the target vineyard as a guideline to assess risk of disease. If this information indicates low disease pressure and low risk, or no symptoms are visible, use the 0.25% dosage rate. When higher disease pressure and higher risk is indicated, or symptoms are already visible, use the 0.5% dosage rate.
- Should conditions be favourable for the infection of clusters with green berries, **OROSORB® DUO** should be alternated or combined with a suitable systemic fungicide to assist in the protection of the clusters.
- **RECOMMENDED SPRAY VOLUME:** 500 ℓ/ha to 1200 ℓ/ha, depending on vine size.

Downy Mildew*Plasmopara viticola*

0.5 ℓ OROSORB® DUO
per 100 ℓ water
0.5% solution

- A programme for the control of downy mildew should commence when the longest shoots reach a length of 10 cm. Use conventional residual fungicides for preventative control of downy mildew.
- If **OROSORB® DUO** is applied at 500 ml/100ℓ for mealybug or downy mildew, this spray will also control downy mildew which may be present at the time.
- If infection periods for downy mildew are expected after application of **OROSORB® DUO**, it should be combined with a preventative residual fungicide as registered.
- Ensure thorough wetting of underside of leaves.
- **RECOMMENDED SPRAY VOLUME:** 750 ℓ/ha to 1000 ℓ/ha, depending on vine size.

LETTUCE

PEST / DISEASE	APPLICATION RATE	REMARKS
Downy Mildew <i>Plasmopara viticola</i>	0.5 l OROSORB® DUO per 100 l water 0.5% solution	<ul style="list-style-type: none">• Start applying at first signs of disease• A spray programme with 3 - 7 day intervals is recommended.• Thorough wetting of both sides of the leaves must be ensured at all times.• DO NOT SPRAY TO THE POINT OF RUN-OFF.• In event of extreme diseases infections levels, the addition of a suitable residual fungicide (as registered) will be required.• RECOMMENDED SPRAY VOLUME: Not less than 500 l/ha

ORNAMENTALS AND ROSES

PEST / DISEASE	APPLICATION RATE	REMARKS
Thrips spp. <i>Thripidae spp.</i>	0.5 l OROSORB® DUO per 100 l water 0.5% solution	<ul style="list-style-type: none">• A spray programme with 3 - 7 day intervals is recommended.• Thorough wetting of both sides of the leaves must be ensured at all times.• Do a small scale phytotoxicity test on varieties known to be sensitive or prone to phytotoxicity or on newly developed varieties.• DO NOT SPRAY TO THE POINT OF RUN-OFF.• RECOMMENDED SPRAY VOLUME: Not less than 250 l/ha
Aphids <i>Macrosiphum rosae</i>		
Red Spider Mite <i>Tetranychus urticae</i>		
Whitefly <i>Bemisia tabaci</i>		
Leaf Hoppers <i>Jassid spp.</i>		
Powdery Mildew <i>Sphaerotheca fuliginea</i>		

TOMATOES

PEST / DISEASE	APPLICATION RATE	REMARKS
Whitefly <i>Bemisia tabaci</i>	0.5 l OROSORB® DUO per 100 l water 0.5% solution	<ul style="list-style-type: none">• Application should start within three weeks after transplanting and continued as a weekly spray programme (7-day intervals) as long as needed.• Ensure thorough wetting of both sides of the leaves at all times.• DO NOT SPRAY TO THE POINT OF RUN-OFF.• This treatment for whitefly will enhance the control of early and/or late blight, when combined in a tank mixture with a registered fungicide for blight control.• The treatment for whitefly will also control aphids and red spider mites present during an application.• RECOMMENDED SPRAY VOLUME: 500 l/ha, from flowering onwards.