BUMPER® 250 EC

Reg. no. L6034 Act/Wet 36 of/van 1947
N-AR 0504

An emulsifiable concentrate systemic fungicide for the control of diseases as indicated in mangoes, oak trees, pecan nuts, barley, wheat, apricots, cherries, peaches, plums, golf courses and bowling greens.

'n Emulgeerbare konsentraat sistemiese swamdoder vir die beheer van siektes soos aangedui in akkerbome, koring, gars, appelkose, kersies, perskes, pruime, pekanneute, mango's, golfbane en rolbalbane.

FRAC FUNGICIDE GROUP CODE **3** **FRAC SWAMDODERGROEPKODE**

ACTIVE INGREDIENT/AKTIEWE BESTANDDEEL

propiconazole (triazole) …….. 250 g/L ……. propikonasool (triasool)

NET VOLUME/NETTO VOLUME

…… L

REGISTRATION HOLDER/REGISTRASIEHOUER

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CONTACT IN EMERGENCY/KONTAK IN NOOD

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Batch number ..... Lotnommer
Date of Manufacture ..... Datum van Vervaardiging

UN no.: 3082

ADAMA
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WARNINGS

Withholding periods (minimum number of days between last application and harvest):

Peaches ……..	10 days
Barley, wheat ……	40 days
Pecan nuts …….	90 days
Cherries ……..	14 days

- Harmful when swallowed, inhaled or absorbed through the skin.
- May irritate the eyes and skin.
- Toxic to fish and wildlife.
- Store in a cool, well ventilated place.
- Store away from food and feed.
- Keep out of reach of children, uninformed persons and animals.

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 soil, climatic and storage conditions; quality of dilution water, compatibility with other substances not indicated on the label and the occurrence of resistance of the disease against the remedy concerned as well as by the method, time and accuracy of 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 in the event of any uncertainty.

PRECAUTIONS

- Do not eat, drink or smoke whilst mixing or applying the product or before washing hands and face.
- Prevent contamination of food, feed, drinking water and eating utensils.
- Wear rubber gloves and face shield when mixing.
- Do not inhale spray mist.
- Avoid contact with skin and eyes.
- Wash contaminated clothing after use.
- Wash with soap and water after use.
- Avoid spray drift onto other crops, grazing, rivers, dams and areas not under treatment.
- Clean applicator after use.

- Dispose of wash water where it will not contaminate crops, grazing, rivers, dams and boreholes.
- Rinse the empty container three times with a volume of clean water equal to a minimum of 10% of the container. Add the rinsings to the contents of the spray tank before destroying the container. Do not use the empty container for any other purpose.

RESISTANCE WARNING

For the purpose of resistance management, **BUMPER® 250 EC** is classified as a group code 3 fungicide. Any fungus population may contain individuals naturally resistant to **BUMPER® 250 EC** and other group code 3 fungicides. The resistant individuals can eventually dominate the fungus population if these fungicides are used repeatedly. These resistant fungi may not be controlled by **BUMPER® 250 EC** or any other group code 3 fungicide.

To delay fungicide resistance:

- Avoid exclusive repeated use of fungicides from the same fungicide group code. Alternate or tank-mix with products from different fungicide group codes.
- For tank mixing or alternation with products in fungicide group code X or Y, refer to applicable individual product labels.
- Integrate the control methods (chemical, cultural, biological) into fungicide control programmes.
- For specific information on resistance management contact the registration holder of this product.

USE RESTRICTIONS

The uptake and activity of systemic compounds may be reduced when crops are under severe drought and/or fertility stress conditions. It is therefore not advisable to apply **BUMPER® 250 EC** during such periods. If in doubt, consult a representative of ADAMA South Africa (Pty) Ltd or a distributor.

DIRECTIONS FOR USE

Use only as indicated.

Compatibility

BUMPER® 250 EC is compatible with most commonly used fungicides, insecticides and foliar feeds. However, the compatibility of **BUMPER® 250 EC** with other products may be influenced by the formulation of the relevant products as well as the quality of the dilution water. Since the formulation of other products may change without the knowledge of ADAMA South Africa (Pty) Ltd and the quality of water may vary from farm to farm, a physical compatibility test should always be carried out prior to application.

Mixing instructions

Add the required amount of **BUMPER® 250 EC** to the water in the spray tank. Stir continuously while mixing and during application. When a wettable powder or a mineral oil is sprayed as tank-mix with **BUMPER® 250 EC**, the wettable powder (creamed in advance) should be mixed first and well agitated after which the **BUMPER® 250 EC** is added and then the spray tank is filled to its final

volume. Agitation of the mixture should be continuous during mixing and application. The spray mixture should be sprayed out immediately and not allowed to stand overnight.

APPLICATION

Ground application

BUMPER® 250 EC can be applied with conventional high-volume spray equipment. Calibrate the apparatus before application to ensure that the correct dosage is applied. The distribution of the spray solution must be uniform throughout the target area.

Aerial application (FOR CEREALS ONLY)

Aerial application of **BUMPER® 250 EC** may only be done by a registered Aerial Application Operator using a correctly calibrated, registered aircraft according to the instructions of SANS Code 10118 (Aerial Application of Agricultural Pesticides). Ensure that the spray mixture is distributed evenly over the target area and that the loss of spray material during application is restricted to a minimum. It is therefore essential that the following criteria be met:

- Volume: A spray mixture volume of 30 L/ha is recommended. As this product has not been evaluated at a reduced volume rate, the registration holder cannot guarantee efficacy, or be held responsible for any adverse effects if this product is applied aerially at a lower volume rate than recommended above.
- Droplet coverage: 25–35 droplets/cm² must be recovered at the target area.
- Droplet size: A droplet spectrum with a VMD of 280–300 microns is recommended. Limit the production of fine droplets less than 150 microns (high drift and evaporation potential) to a minimum.
- Flying height: Maintain the height of the spray boom at 3–4 metres above the target. Do not spray when aircraft dives, is in a climb or when banking
- Use suitable atomising equipment that will produce the desired droplet size and coverage, but which will ensure the minimum loss of product. The spraying system must produce a droplet spectrum with the lowest possible Relative Span.
- Position all the atomisers within the inner 60–75 % of the wingspan to prevent droplets from entering the wingtip vortices.
- The difference in temperature between the wet and dry bulb thermometers, of a whirling hygrometer, should not exceed 8 °C.
- Stop spraying if the wind speed exceeds 15 km/h.
- Stop spraying under turbulent, unstable and dry conditions during the heat of the day.
- Spraying under temperature inversion conditions (spraying in or above the inversion layer) and/or high humidity conditions (relative humidity 80 % and above) may lead to the following:
  a) Reduced efficacy due to suspension and evaporation of small droplets in the air (inadequate coverage).
  b) Damage to other sensitive crops and/or non-target areas through drifting of the suspended spray cloud away from the target field.
- Ensure that the Aerial Spray Operator knows exactly which fields to spray.

- Obtain an assurance from the Aerial Spray Operator that the above requirements will be met and that relevant data will be compiled in a logbook and kept for future reference.
- It is important to obtain an assurance from the aerial spray operator that the above requirements will be met.

APPLICATION RATES

CROP AND TARGET	DOSAGE	REMARKS
Oak trees Powdery mildew (*Oidium quercinum*)	20 ml/100 L water 20 ml/100 L water	**Old established trees:** Apply a single high volume spray at full leaf set when leaves have fully developed (approximately mid-September). **Young actively growing trees:** Apply two high volume applications. Apply the first spray at full leaf set when leaves have fully developed (approximately mid-September) and the second spray eight weeks later.
Pecan nuts Scab (*Fusicladium effusum*)	50 ml/100 L water	Apply 1000–2000 L spray mixture/ha as indicated below: **Application stage and interval:** 1st When leaves unfold 2nd 10 days after 1st 3rd 21 days after 2nd 4th 28 days after 3rd 5th 28 days after 4th depending on conditions **Note:** The application of a suitable registered contact fungicide (in mixture or alone) with the last two to three applications (i.e. the 3rd, 4th and 5th) will be beneficial for the control of fruit scab.
Mangoes Powdery mildew (*Oidium mangiferae*)	20 ml/100 L water	Apply every 10–14 days starting at the first signs of the disease, usually at 50 % flowering and continue until 100 % petal drop.
Apricots, cherries, peaches and plums Blossom blight (*Monilinia laxa*)	20 ml/100 L water	Commence application when 5 % of blossoms have reached the full balloon stage and repeat at 7-day intervals until after blossoming.
Peaches and cherries	20 ml/100 L water	Apply in a spray programme using sufficient spray mixture to obtain complete coverage.

CROP AND TARGET	DOSAGE	REMARKS
Powdery mildew (*Sphaerotheca pannosa*)		Apply at 14-day intervals when the disease is expected (or at very first signs of disease) and continue throughout the season as long as conditions remain favourable for the disease. **Note: Cherries:** Do not make more than 5 applications of propiconazole per season.
Wheat Eyespot (*Pseudocercosporella herpotrichoides*)	400 ml/ha ground application 500 ml/ha aerial application	Apply during the elongation stages up to the formation of the 2nd node (GS 9-14*). Do not apply after GS 14* for eyespot control.
Speckled leaf blotch (*Septoria tritici*) Glume blotch (*Septoria nodorum*) Powdery mildew (*Erysiphe graminis*)	500 ml/ha ground and aerial application	Use the 3rd leaf as indicator. Apply before more than 5 % of the surface of this leaf is infected. Optimum time for application is GS 16–20*.
Leaf rust (*Puccinia recondita*) Yellow rust (*Puccinia striiformis*)	400 ml/ha ground and aerial application	Apply at first signs of disease. **Note:** Where a second application is justified a dosage rate of 400 ml/ha is recommended for ground and aerial application.
Karnal bunt (*Neovossia indica* syn. *Tilletia indica)*	500 ml/ha ground application 600 ml/ha in 45 L water aerial application	Apply at 25 % main ear appearance. Ensure that all plant parts are thoroughly covered. Follow-up with a second application 10 days later. Combine fungicide treatment with other disease management practices that will reduce the risk of infection. Uneven ear emergence and/or flowering may influence the success of fungicide treatment.
Barley Leaf spot (*Rhynchosporium secalis*) Leaf blotch (*Pyrenophora teres*) Leaf rust (*Puccinia hordei*)	400 ml/ha ground application 500 ml/ha aerial application	Leaf spot is best controlled by an application made between the 7th and flag leaf stages (GS 12-18*). Earlier applications may, however, be necessary if the disease develops earlier. Other diseases are generally well controlled by applications made for the control of leaf spot. For all diseases, treatments should be applied before the disease gains momentum. Where two applications are justified (e.g. where leaf

CROP AND TARGET	DOSAGE	REMARKS
Powdery mildew (*Erysiphe graminis*)	500 ml/ha ground and aerial application	blotch develops after the first application or where *Rhynchosporium* disease pressure is high) it will be beneficial to make a second application 18 to 21 days later. **Note:** Where a second application is justified a dosage rate of 400 ml/ha is recommended for ground and aerial application.
Golf courses and bowling green Dollar spot (*Sclerotinia*)	10 ml/100 m² at 7- to 14-day spray intervals 24 ml/100 m² at 14 to 28 day spray intervals	Apply as a preventive application if conditions are favourable for the development of disease. Use the lower rate only in tank mix with another unrelated registered fungicide. When using the higher rate, not more than three subsequent sprays should be applied before alternating with a registered fungicide with a different mode of action. **Only for use by members of the "Golf Course Managers and Green Keepers Association."**
Brown patch (*Rhizoctonia*)	40–80 ml/100 m² at 10-21 day spray intervals	Apply as a preventive application in spring or early summer. If the disease is already present at application, **BUMPER® 250 EC** should be mixed with a non-related registered fungicide. The higher dosage rate should be used if wet conditions with high humidity and high temperatures occur. Use the shorter spray intervals under these conditions. **Only for use by the members of the "Golf Course Managers and Green Keepers Association."**

* Growth stage (GS) according to the Department of Agronomy and Pastures, Faculty of Agricultural Science, University of Stellenbosch.

WAARSKUWINGS

Onthoudingsperiodes (minimum aantal dae tussen laaste toediening en oes):

Perskes ……..	10 dae
Gars, koring ……..	40 dae
Pekanneute ……	90 dae
Kersies ……	14 dae

- Skadelik indien ingesluk, ingeasem of deur die vel geabsorbeer word.
- Kan die oë en vel irriteer.
- Giftig vir visse en natuurlewe.
- Berg in ‘n koel goed geventileerde plek.
- Berg weg van voedsel en voer.
- Hou buite bereik van kinders, oningeligte persone en diere.

Alhoewel hierdie middel omvattend onder 'n groot verskeidenheid toestande getoets is, waarborg die registrasiehouer nie dat dit onder alle toestande doeltreffend sal wees nie aangesien die werking en effek daarvan beïnvloed kan word deur faktore soos abnormale klimaats- en bergingstoestande; kwaliteit van verdunningswater, verenigbaarheid met ander stowwe wat nie op die etiket aangedui is nie en die voorkoms van weerstand van die siekte teen die betrokke middel, sowel as die metode, tyd en akkuraatheid van toediening. Verder aanvaar die registrasiehouer nie verantwoordelikheid vir skade aan gewasse, plantegroei, die omgewing of vir nadelige effek op mense of diere of vir die gebrek aan prestasie van die betrokke middel as gevolg van die versuim van die gebruiker om etiketaanwysings na te kom of as gevolg van die ontstaan van toestande wat nie kragtens die registrasie voorsien kon word nie. Raadpleeg die verskaffer in die geval van enige onsekerheid.

VOORSORGMAATREËLS

- Moet nie eet, drink of rook tydens vermenging of toediening van die produk of voordat hande en gesig gewas is nie.
- Voorkom besoedeling van voedsel, voer, drinkwater en eetgerei.
- Dra rubberhandskoene en gesigskerm wanneer produk gemeng word.
- Moet nie die spuitnewel inasem nie.
- Vermy kontak met die vel en die oë.
- Was met seep en water na gebruik.
- Was besoedelde klere na gebruik.
- Vermy wegdrywing van spuitnewel na ander gewasse, weiveld, riviere, damme en gebiede wat nie behandel moet word nie.

- Maak toedieningsapparaat skoon na gebruik.
- Uitspoelwater moet nie gewasse, weiveld, riviere, damme en boorgate besoedel nie.
- Spoel die leë houer na gebruik drie keer uit met ‘n volume skoon water gelykstaande aan 10 % van die houer. Gooi die spoelwater by die inhoud van die spuittenk voordat die houer vernietig word. Moet nie die leë houer vir enige ander doel gebruik nie.

WEERSTANDSWAARSKUWING

Vir die bestuur van weerstand word **BUMPER® 250 EC** as ‘n groepkode 3 swamdoder geklassifiseer. Enige populasie van ‘n spesifieke swam mag individue insluit wat ‘n natuurlike weerstand teen **BUMPER® 250 EC** of enige ander groepkode 3 swamdoder het. Indien hierdie swamdoders herhaaldelik aangewend word, kan die weerstandbiedende individue uiteindelik die swampopulasie oorheers. Hierdie weerstandbiedende swamme sal waarskynlik nie deur **BUMPER® 250 EC** of enige ander groepkode 3 swamdoder beheer word nie.

Om weerstand teen swamdoders te vertraag:

- Vermy die eksklusiewe herhaaldelike gebruik van swamdoders met dieselfde groepkode. Wissel af met, of gebruik tenkmengsels van produkte in verskillende swamdodergroepkodes.
- Raadpleeg toepaslike individuele produketikette wanneer daar afgewissel word, of tenkmengsels gemaak word, met produkte in swamdodergroepkodes X of Y.
- Integreer ander beheermaatreëls (chemies, verbouing, biologies) in swamdoderprogramme.
- Vir spesifieke inligting oor weerstandsbestuur kontak die registrasiehouer van hierdie produk.

GEBRUIKSBEPERKINGS

Die opname en aktiwiteit van sistemiese middels kan verlaag word wanneer die gewas aan vogstremming en/of voedingsgebrek ly. Wanneer die gewas dus in hierdie toestand verkeer, moet **BUMPER® 250 EC** nie toegedien word nie. Raadpleeg ‘n verteenwoordiger van ADAMA South Africa (Pty) Ltd of verspreider in geval van enige onsekerheid.

GEBRUIKSAANWYSINGS

Gebruik slegs soos aangedui.

Verenigbaarheid

BUMPER® 250 EC is verenigbaar met die mees algemene swamdoders, insekdoders en onkruiddoders wat gebruik word. Die verenigbaarheid van **BUMPER® 250 EC** met ander produkte kan beïnvloed word deur die formulasie van die produkte betrokke asook deur die kwaliteit van die verdunningswater. Aangesien die formulasie van produkte kan verander sonder die medewete van ADAMA South Africa (Pty) Ltd en die kwaliteit van die water ook van plaas tot plaas kan verskil, moet ‘n fisiese erenigbaarheidstoets altyd uitgevoer word voordat gespuit word.

Menginstruksies

Voeg die benodigde hoeveelheid **BUMPER® 250 EC** by die water in die spuittenk. Roer aanhoudend terwyl gemeng word. Wanneer ‘n benatbare poeier of minerale olie in ‘n tenkmengsel met **BUMPER® 250 EC** gespuit word, moet die benatbare poeier (wat vooraf verroom is) of minerale olie, eerste in die tenk gevoeg word en die mengsel goed geroer word waarna die **BUMPER® 250 EC** bygevoeg en die spuittenk tot die finale volume met water gevul word. Die spuitmengsel moet tydens vermenging en toediening voortdurend in roering gehou word. Spuitmengsels moet onmiddellik uitgespuit word en nie toegelaat word om in die spuittenk oor te staan nie bv. oornag.

TOEDIENING

Grondtoediening

BUMPER® 250 EC kan met ‘n konvensionele hoëvolume spuitapparaat toegedien word. Kalibreer die apparaat voor toediening om te verseker dat die regte toedieningshoeveelheid gelewer word. Verspreiding van die spuitmengsel moet egalig oor die teikengebied wees.

Lugtoediening (SLEGS KLEINGRAAN)

BUMPER® 250 EC kan slegs deur ‘n geregistreerde Lugbespuitingsperateur met ‘n korrek gekalibreerde, geregistreerde vliegtuig volgens die instruksies van SABS Kode 10118 (Aerial Application of Agricultural Pesticides) uit die lug bespuit word. Verseker dat die spuitmengsel eweredig oor die teikenarea versprei word, en die verlies aan spuitmengsel tydens toediening tot ‘n minimum beperk word. Dit is daarom belangrik om aan die volgende vereistes te voldoen:

- Volume: ‘n Spuitmengsel volume van 30L/ha word aanbeveel. Hierdie produk is nie teen ‘n verlaagde volume getoets nie. Die registrasiehouer kan nie effektiteit waarborg, of verantwoordelik gehou word vir enige nadelige effekte indien hierdie produk teen ‘n laer volume, as hierbo aanbeveel, toegedien word nie.
- Druppel bedekking: 25-35 druppels per cm² moet op die teikenarea herwin word.
- Druppelgrootte: ‘n Druppelspektrum met ‘n VMD van 280-300 mikrons word aanbeveel. Beperk die produksie van druppels kleiner as 150 mikrons (hoë drywing en verdampingspotensiaal) tot ‘n minimum.
- Vlieghoogte: Handhaaf die hoogte van die spuitbalk bo die teiken op 3-4 meter. Moet nie spuit wanneer die vliegtuig duik nie, uitklim of draai nie.
- Gebruik geskikte atomiseringsapparaat wat die vereiste druppelgrootte en bedekking sal produseer, maar die minste verlies van produk verseker. Die spuitstelsel moet ‘n druppelspektrum met die kleinste moontlike Relatiewe Span produseer.
- Plaas al die atomiseerders in die binnste 60-75 % van die vlerkspan om te verhoed dat druppels binne-in die vlerkpuntvorteks beweeg.
- Die verskil in temperatuur tussen die nat- en droëboltermometer van ‘n swaaihigrometer, moet nie 8 °C oorskry nie.
- Stop bespuiting indien die windspoed 15 km/h oorskry.
- Stop bespuiting tydens turbulente, onstabiele en droë toestande gedurende die hitte van die dag.
- Bespuiting onder temperatuur inversie toestande (deur bo of binne die inversie laag te spuit) en/of hoë lugvog toestande (relatiewe humiditeit 80 % en meer) mag tot volgende probleme aanleiding gee:

a) verlaagde effektiwiteit aangesien die druppels as ‘n wolk in die lug bly hang en moontlik verdamp (onvoldoende bedekking op teiken).
b) skade aan nie-teiken gewasse of sensitiewe areas as gevolg van wegdrywing van die spuitwolk na nie-teiken area.

- Verseker dat die Lugbespuitingsoperateur presies weet watter lande bespuit moet word.
- Dit is noodsaaklik om ‘n versekering van die Lugbespuitingsoperateur te verkry dat aan al die bogenoemde vereistes voldoen sal word en dat data van belang in ‘n logboek saamgevat is vir toekomstige verwysing.

TOEDIENINGSHOEVEELHEDE

GEWAS EN TEIKEN	DOSIS	OPMERKINGS
Akkerbome Poeieragtige skimmel (*Oidium quercinum)*	20 ml/100 L water 20 ml/100 L water	**Ou gevestigde bome:** Dien ‘n enkele hoëvolume bespuiting toe wanneer al die blare ten volle ontwikkel het (ongeveer middel September). **Jong aktiefgroeiende bome:** Dien twee hoëvolume bespuitings toe. Dien die eerste bespuiting toe wanneer al die blare ten volle ontwikkel het (ongeveer middel September) en die tweede bespuiting agt weke later.
Pekanneute Skurfsiekte (*Fusicladium effusum)*	50 ml/100 L water	Dien 1000-2000 L spuitmengsel/ha toe soos hieronder aangedui. **Toedieningstadium en tussenposes** 1ste wanneer blare ontvou 2de 10 dae na 1ste 3de 21 dae na 2de 4de 28 dae na 3de 5de 28 dae na die 4de afhangende van toestande **Nota:** Die toediening van ‘n geskikte geregistreerde kontakswamdoder (in mengsel of alleen) met die laaste twee of drie bespuitigs (d.w.s. die 3de , 4de en 5de) sal voordelig wees vir die beheer van skurfsiekte op die vrugte.
Mango’s Poeieragtige skimmel *(Oidium mangiferae)*	20 ml/100 L water	Dien elke 10–14 dae toe. Bespuiting moet begin met die eerste tekens van die siekte, gewoonlik tydens 50 % blom en hou daarna aan tot 100 % blomblaarval.

GEWAS EN TEIKEN	DOSIS	OPMERKINGS
Appelkose, kersies, perskes en pruime Bloeiselversenging (*Monilinia laxa)*	20 ml/100 L water	Begin bespuiting wanner 5 % van die bloeisels die volle ballonstadium bereik het en herhaal elke 7 dae tot na blom.
Perskes en kersies Poeieragtige skimmel (*Sphaerotheca panossa)*	20 ml/100 L water	Dien toe in 'n programbespuiting en gebruik genoegsame spuitmengsel om 'n volledige bedekking te verky. Dien toe met 14 dae spuittussenposes wanneer die siekte verwag word (of met heel eerste tekens van siekte) en hou aan dwarsdeur die seisoen solank as wat toestande gunstig bly vir die ontwikkeling van die siekte. **Nota: Kersies**: Moenie meer as 5 toedienings propiconazole per seisoen maak nie.
Koring		
Oogvlek (*Pseudocercosporella herpotrichoides*)	400 ml/ha grondtoediening 500 ml/ha lugtoediening	Dien bespuiting toe gedurende die verlengingstadium tot die verskyning van die 2de node (GS 9 - 14*) Moet nie na stadium GS 14*) vir die beheer van oogvlek spuit nie.
Vaalblaar (*Septoria tritici)* Bruinaarsiekte (*Septoria nodorum)* Poeieragtige skimmel (*Erysiphe graminis)*	500 ml/ha grond- en lugtoediening	Gebruik die derde blaar as aanwyser. Dien toe voordat meer as 5 % van die oppervlakte van hierdie blaar besmet is. Die optimale tyd van toediening is stadium (GS 16 - 20*).
Blaarroes (*Puccinia recondita)* Geelroes (*Puccinia striiformis)*	400 ml/ha grond- en lugtoediening	Dien toe wanneer die eerste tekens van die siekte verskyn. **LET WEL:** Waar 'n tweede toediening geregverdig is, word 400 ml/ ha vir beide grond- en lugtoediening aanbeveel.
Karnalbrand (*Neovossica indica* syn. *Tilletia indica)*	500 ml/ha grondtoediening 600 ml/ha in 45 L water lugtoediening	Dien toe by 25 % hoofaarverskyning. Verseker dat 'n deeglike bedekking verkry word. Volg op met 'n tweede bespuiting 10 dae later. Kombineer swamdoderbehandeling met siektebestuur praktyke wat die risiko van besmetting sal verlaag. Ongelyke aarverskyning en/of blom mag die sukses van swamdoderbehandeling beïnvloed.
Gars		

GEWAS EN TEIKEN	DOSIS	OPMERKINGS
Blaarvlek (*Rhyncosporium secalis)* Netvlek *(Pyrenophora teres)* Blaarroes *(Puccinia hordei)* Poeieragtige skimmel (*Erysiphe graminis*)	400 ml/ha grondtoediening 500 ml/ha lugtoediening 500 ml/ha grond- en lugtoediening	Blaarvlek word die beste beheer deur ‘n bespuiting tussen die 7de en vlagblaarstadium (GS 12-18*) toe te dien. Vroeëre bespuitings mag egter nodig wees as die siekte vroëer ontwikkel. Die ander siektes word oor die algemeen goed beheer deur toedienings wat gemaak word vir die beheer van blaarvlek. Vir alle siektes moet behandeling toegedien word voordat die siekte begin toeneem. Waar twee toedienings geregverdig is (bv. waar netvlek na die eerste toediening ontwikkel of waar *Rhynchosporium* siektedruk hoog is), sal ‘n tweede toediening 18-21 dae later voordelig wees. **LET WEL:** Waar ‘n tweede toediening geregverdig is, word 400 ml/ha grond- en lugtoediening aanbeveel.

GEWAS EN TEIKEN	DOSIS	OPMERKINGS
Golfbane en rolbalbane Daalderkol (*Sclerotinia)*	10 ml/100 m² met 7 tot 14 dae spuittussenposes	Dien voorkomend toe as toestande gunstig is vir die ontwikkeling van die siekte. Gebruik die laer toedieningshoeveelheid slegs in ‘n tenkmengsel met ‘n ander onverwante geregistreerde swamdoder.
	24 ml/100 m² met 14 tot 28 dae spuittussenposes	Indien die hoër toedieningshoeveelheid gebruik word moet nie meer as drie agtereenvolgende bespuitings gedoen word nie voordat dit afgewissel word met ‘n ander onverwante geregistreerde swamdoder met ‘n ander metode van werking as **BUMPER® 250 EC**. **Slegs vir gebruik deur lede van die “Golfcourse Managers and Greenkeepers Association”.**
Bruinkol (*Rhizoctonia*)	40–80 m/100 m² met 10 tot 21 dae spuittussenposes	Dien as ‘n voorkomende bespuiting toe in die lente of vroeë somer. As die siekte alreeds teenwoordig is tydens toediening, moet **BUMPER® 250 EC** in ‘n tenkmengsel met ‘n onverwante geregistreerde swamdoder toegedien word. Die hoër toedienings-hoeveelheid moet gebruik word indien nat en warm toestande met hoë lugvog voorkom. Onder hierdie toestande moet die korter spuittussenposes gebruik word. **Slegs vir gebruik deur lede van die “Golfcourse Managers and Greenkeepers Association”.**

* Groeistadium (GS) volgens Departement Akkerbou en Weiding, Fakulteit Landbouwetenskappe, Universiteit van Stellenbosch.