

**MAKHTESHIM-AGAN
SOUTH AFRICA (PTY) LTD**

GROUP C FUNGICIDE

GROEP C SWAMDODER

BUMPER 250 EC

Reg No. L 6034 Act / Wet 36 / 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, peaches, plums, golf courses and bowling greens.

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

ACTIVE INGREDIENT / AKTIEWE BESTANDDEEL

propiconazole (triazole) 250 g / ℓ

propikonasool (triasool)

NET VOLUME / NETTO VOLUME

REGISTRATION HOLDER / REGISTRASIEHOUER:

Makhteshim-Agan SA (Pty) LTD
Reg. No. 92/01741/07
21 Viben Street
Po Box 498, BRACKENFELL, 7561
Tel Nr. (021) 982 1460
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Batch number

Lotnommer

Date of manufacture

Datum van vervaardiging



Class III

Blue colour band.

WAARSKUWINGS:

- **Onthoudingsperiodes:** Minimum aantal dae tussen laaste toediening en oes of beweiding:
 - Gars en koring.....40 dae.
 - Perskes.....10 dae.
 - Pekanneute.....90 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.
- **Algemene waarskuwing:**

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 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 mens of dier of vir 'n 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 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.
- Vermoed kontak met die vel en die oë.
- Was met seep en water na gebruik.
- Was besoedelde klere na gebruik.
- Vermoed 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 spuitnewel voordat die houer vernietig word. Moet nie die leë houer vir enige ander doel gebruik nie.

Waarskuwing teen weerstand:

BUMPER 250 EC is 'n demitilasië inheberende (DMI) swamdoder wat aanbeveel word vir die beheer van verskeie belangrike plantsiektes. Herhaaldelike eksklusiewe gebruik van **BUMPER 250 EC** mag lei tot die opbou van weerstandbiedende rasse van swamme en die gevolglike verlies van siektebeheer. Indien behandeling nie suksesvol is na toediening van **BUMPER 250 EC** soos aanbeveel nie, mag weerstandbiedende rasse teenwoordig wees. Indien 'n DMI-weerstandbiedende ras positief geïdentifiseer word, moet oorweging onmiddellik gegee word aan die gebruik van nie-DMI swamdoders. 'n Spuitprogram met mengsels of bespuitings wat afgewissel word met nie-DMI swamdoders mag die opbou van weerstandbiedende rasse vertraag.

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 MAKHTESHIM-AGAN of verspreider in geval van enige onsekerheid.

Produkeienskappe:

BUMPER 250 EC is 'n akropetale sistemiese swamdoder wat voorkomend en ook nadat besmetting plaasgevind het, gebruik kan word. Wanneer dit in 'n voorkomende spuitprogram toegedien word, gee **BUMPER 250 EC** doeltreffende beheer van bloeiselversenging (*Monilinia laxa*) in appelkose, perskes en pruime, poeieragtige skimmel (*Sphaerotheca panossa*) in perskes, (*Oidium mangiferae*) in mango's, (*Oidium quercinum*) in akkerbome en skurfsiekte (*Fusicladium effusum*) in pekanneute. **BUMPER 250 EC** beheer ook blaarvlek (*Rhynchosporium secalis*), netvlek (*Pyrenophora teres*), blaarroes (*Puccinia hordei*) en poeieragtige skimmel (*Erysiphe graminis*) in gars en oogvlek (*Pseudocercospora herpotrichoides*), vaalblaar (*Septoria tritici*), Bruinaarsiekte (*Septoria nodorum*), blaarroes (*Puccinia recondita*), geel/streeproes (*Puccinia striiformis*) en poeieragtige skimmel (*Erysiphe graminis*), Karnalbrand (*Neovossia indica* syn. *Tilletia indica*) in koring en daalderkol (*Sclerotinia en Rhizoctonia*) in golfbane en rolbalbane.

GEBRUIKSAANWYSINGS: Gebruik slegs soos aangedui.

Verenigbaarheid:

Die verenigbaarheid van **BUMPER 250 EC** met ander produkte kan beïnvloed word deur die formulering van die produkte betrokke asook deur die kwaliteit van die verdunningswater. Aangesien die formulering van produkte kan verander sonder die medewete van MAKHTESHIM-AGAN en die kwaliteit van die water ook van plaas tot plaas kan verskil, moet 'n fisiese verenigbaarheidstoets altyd uitgevoer word voordat gespuit word.

Menginstruksies:

Plaas die houër se dop terug na gebruik. 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 by 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).

Lugtoediening:

BUMPER 250 EC kan slegs deur 'n geregistreerde Lugbespuitingsperateur met 'n korrek gekalibreerde, geregistreerde vliegtuig volgens die instruksies van SABS Kode 0118 (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 30 liter per ha word aanbeveel. Hierdie produk is nie teen 'n verlaagde volume getoets nie. Die registrasiehouer kan nie effektiwiteit 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 tot 35 druppels per cm² moet op die teikenarea herwin word.
- Druppelgrootte: 'n Druppelspektrum met 'n VMD van 280 tot 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 tot 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 tot 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 Lugbespuitingsperateur presies weet watter lande bespuit moet word.
- Dit is noodsaaklik om 'n versekering van die Lugbespuitingsperateur 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 / SIEKTE	DOSIS	OPMERKINGS
AKKERBOME Poieragtige skimmel (<i>Oidium quercinum</i>)	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 (<i>Fusicladium effusum</i>)	50 ml / 100 l water	Dien 1000 – 2000 l spuitmengsel / ha toe soos hieronder aangedui. Toediening / Stadium / Tussenposes 1stewanneer blare ontvou 2de.....10 dae na eerste 3de.....21 dae na 2de 4de.....28 dae na 3de 5de.....Afhangende van toestande kan 'n 5de bespuiting 28 dae na die 4de nodig wees. LET WEL: Die toediening van 'n geskikte geregistreerde kontakswamdoder (in mengsel of alleen) met die laaste twee of drie bespuitings (d.w.s. die 3de, 4de en 5de) sal voordelig wees vir die beheer van skurfsiekte op die vrugte.
MANGO'S Poieragtige skimmel (<i>Oidium mangiferae</i>)	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.
APPELKOSE, PERSKES, NEKATARIENS en PRUIME Bloeiselsversenging (<i>Monilinia laxa</i>)	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 & NEKTARIENS Poieragtige skimmel (<i>Spharotheca panossa</i>)	20 ml / 100 l water	MOENIE OP UITVOERVRUGTE GEBRUIK NIE. Dien toe in 'n programbespuiting en gebruik genoegsame spuitmengsel om 'n volledige bedekking te verky. Dien toe met 14 dae spuitussenposes wanneer die siekte verwag word (of met heel

GEWAS / SIEKTE	DOSIS	OPMERKINGS
		eerste tekens van siekte) en hou aan dwarsdeur die seisoen solank as wat toestand gunstig bly vir die ontwikkeling van die siekte.
<p>KORING Oogvlek <i>(Pseudocercospora herpotrichoides)</i></p> <p>Vaalblaar <i>(Septoria tritici)</i> Bruinaarsiekte <i>(Septoria nodorum)</i> Poeieragtige skimmel <i>(Erysiphe graminis)</i></p> <p>Blaarroes <i>(Puccinia recondita)</i> Geelroes <i>(Puccinia striiformis)</i></p> <p>Karnalbrand <i>(Neovossica indica syn. Tilletia indica)</i></p>	<p>400 ml / ha grondtoediening 500 ml / ha lugtoediening</p> <p>500 ml / ha grond- en lugtoediening</p> <p>400 ml / ha grond- en lugtoediening</p> <p>500 ml / ha Grondtoediening. 600 ml / ha in 45 l water Lugtoediening.</p>	<p>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.</p> <p>Gebruik die 3de 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*).</p> <p>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.</p> <p>Dien toe by 25 % hoofaarskyning. 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 aarskyning en/of blom mag die sukses van swamdoderbehandeling beïnvloed.</p>
<p>GARS Blaarvlek <i>(Rhynchosporium secalis)</i> Netvlek <i>(Pyrenophora teres)</i> Blaarroes <i>(Puccinia hordei)</i></p> <p>Poeieragtige skimmel <i>(Erysiphe graminis)</i></p>	<p>400 ml / ha grondtoediening 500 ml / ha lugtoediening</p> <p>500 ml / ha grond- en lugtoediening.</p>	<p>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 vroeër 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 blaarvlek siektedruk hoog is), sal 'n tweede toediening 18 - 21 dae later voordelig wees.</p>

GEWAS / SIEKTE	DOSIS	OPMERKINGS
		LET WEL: Waar 'n tweede toediening geregverdig is, word 400 mℓ / ha grond- en lugtoediening aanbeveel.
<p>GOLFBANE EN ROLBALBANE Daalderkol (<i>Sclerotinia</i>)</p> <p>Bruinkol (<i>Rhizoctonia</i>)</p>	<p>10 mℓ / 100 m² met 7 - 14 dae spuit tussenposes</p> <p>24 mℓ / 100 m² met 14 - 18 dae spuit tussenposes</p> <p>40 - 80 mℓ / 100 m² met 10 - 21 dae spuit tussenposes</p>	<p>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. 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.</p> <p>Slegs vir gebruik deur lede van die “Golfcourse Managers and Greenkeepers Association”</p> <p>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 toedieningshoeveelheid moet gebruik word indien nat en warm toestande met hoë lugvog voorkom. Onder hierdie toestande moet die korter spuit tussenposes gebruik word. Slegs vir gebruik deur lede van die “Golfcourse Managers and Greenkeepers Association”.</p>

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

WARNINGS:

- **Withholding periods:** Minimum number of days between last application and harvest or grazing:

Peaches.....	10 days.
Barley and wheat.....	40 days.
Pecan nuts.....	90 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.

- **General warning:**

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 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 the 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.

Warning against resistance:

BUMPER 250 EC is a demethylation inhibiting (DMI) fungicide recommended for the control of various important plant diseases. Repeated exclusive use of **BUMPER 250 EC** may lead to a build-up of resistant strains of fungi resulting in a loss of disease control. If treatment is not effective following the use of **BUMPER 250 EC** as recommended, resistant strains may be present. If a DMI-resistant strain is positively identified, consideration should be given to prompt use of non-DMI fungicides. A spray programme of mixtures or alternating with non-DMI fungicides may delay the build-up of resistant strains.

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 MAKHTESHIM-AGAN or distributor.

Product properties:

BUMPER 250 EC is an acropetal systemic fungicide allowing protective and post infection use. Applied in a protective spray programme, **BUMPER 250 EC** effectively controls **Blossom blight** (*Monilinia laxa*) in apricots, peaches and plums, **powdery mildew** in peaches (*Sphaerotheca pannosa*) and oak trees (*Oidium quercinum*), **scab** (*Fusicladium effusum*) in pecan nuts and **powdery mildew** (*Oidium mangiferae*) in mangoes. **BUMPER 250 EC** also effectively controls **leaf spot** (*Rhynchosporium secalis*), **leaf blotch** (*Pyrenophora teres*), **leaf rust** (*Puccinia hordei*) and **powdery mildew** (*Erysiphe graminis*) in barley, **eyespot** (*Pseudocercospora herpotrichiodes*), **speckled leaf blotch** (*Septoria tritici*), **glume blotch** (*Septoria nodorum*), **leaf rust** (*Puccinia recondita*), **yellow rust** (*Puccinia striiformis*), **powdery mildew** (*Erysiphe graminis*), **karnal bunt** (*Neovossia indica* syn. *Tilletia indica*) in wheat and **dollar spot** and **brown patch** (*Sclerotinia* and *Rhizoctonia*) in golf courses and bowling greens.

DIRECTIONS FOR USE: Use only as indicated.

Compatibility:

BUMPER 250 EC is compatible with most commonly used fungicides, insecticides and foliar feeds normally used with the various crops. However, the compatibility of **BUMPER 250 EC** with other products may be influenced by the formulation of the products involved as well as the quality of the dilution water. Since the formulation of other products may change without the knowledge of MAKHTESHIM-AGAN 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:

Replace cap after pouring: 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 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 the spray tank filled to its final volume. Agitation of the mixture should be kept up during mixing and application. The spray mixture should be sprayed out immediately and should not be allowed to stand overnight.

Application:**Ground application:**

BUMPER 250 EC can be applied with a 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: (Cereals only).

Aerial application:

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 SABS Code 0118 (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 litres per hectare 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 to 35 droplets per cm² must be recovered at the target area.
- Droplet size: A droplet spectrum with a VMD of 280 to 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 to 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 to 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.

CROP / DISEASE	DOSAGE	REMARKS
<p>Glume blotch (<i>Septoria nodorum</i>)</p> <p>Powdery mildew (<i>Erysiphe graminis</i>)</p> <p>Leaf rust (<i>Puccinia recondita</i>)</p> <p>Yellow rust (<i>Puccinia striiformis</i>)</p> <p>Karnal bunt (<i>Neovossia indica</i> syn. <i>Tilletia indica</i>)</p>	<p>aerial application.</p> <p>400 ml / ha ground and aerial application.</p> <p>500 ml / ha Ground application.</p> <p>600 ml / ha in 45 ℓ water. Aerial application.</p>	<p>Optimum time for application is GS 16 - 20*</p> <p>Apply at first signs of the disease. NOTE: Where a second application is justified a dosage rate of 400 ml / ha is recommended for ground and aerial application.</p> <p>Apply at 25 % main ear appearance. Ensure that all plant parts are covered thoroughly. 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.</p>
<p>BARLEY</p> <p>Leaf spot (<i>Rhynchosporium secalis</i>)</p> <p>Leaf blotch (<i>Pyrenophora teres</i>)</p> <p>Leaf rust (<i>Puccinia hordei</i>)</p> <p>Powdery mildew (<i>Erysiphe graminis</i>)</p>	<p>400 ml / ha ground application</p> <p>500 ml / ha ground and aerial application</p>	<p>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 gain momentum. Where two applications are justified (e.g where leaf blotch develops after the first application or where <i>Rhynchosporium</i> disease pressure is high) it will be beneficial to make a second application 18 - 21 days later. NOTE: Where a second application is justified a dosage rate of 400 ml / ha is recommended for ground and aerial application.</p>
<p>GOLF COURSES AND BOWLING GREENS</p> <p>Dollar Spot (<i>Sclerotinia</i>)</p> <p>Brown patch (<i>Rhizoctonia</i>)</p>	<p>10 ml / 100 m² at 7 - 14 day spray intervals</p> <p>24 ml / 100 m² at 14 - 28 day spray intervals</p> <p>40 - 80 ml / 100 m² at 10 - 21 day spray intervals</p>	<p>Apply as a preventive application if conditions are favourable for the development of the disease. Use the lower rate only in a tank mix with another unrelated registered fungicide. When using the higher rate, not more than three subsequent sprays should be applied before alternating with and alternative registered fungicide with a different mode of action. Only for use by members of the “Golf Course Managers and Green Keepers Association.”</p> <p>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</p>

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		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.