

COPPER-FLOW-PLUS

Reg. No.: L6831 Act No. 36 of 1947 • Namibia Reg. No.: N-AR 0798 Act No. 36 of 1947

A copper containing solution, contact bactericide and fungicide for the preventative control of diseases as indicated.

FRAC FUNGICIDE GROUP CODE: M1

ACTIVE INGREDIENT:

Copper ammonium acetate..... 315 g/ℓ
(copper equivalent.....93 g/ℓ)

REGISTRATION HOLDER:

Arysta LifeScience South Africa (PTY) LTD
Co. Reg. No.: 2009/019713/07
7 Sunbury Office Park , Off Douglas Saunders Drive
La Lucia, 4019 • Tel: (031) 514-5600

DISTRIBUTOR:

PROTEK, a division of PE-BEE Agri (PTY) LTD
Co. Reg. No.: 2005/036308/07
P.O. Box 72, Heidelberg, 1438
Tel: (011) 812 9800 or 0861 PROTEK (0861 77 68 35)
www.proteksa.co.za

EMERGENCY NO.: 082 446 8946

UN No.: 3082



WARNINGS:

Minimum time between last application and harvest or feeding:	
Apples, Avocados, Mangoes & Peaches	14 days
Beans, Cruciferae, Cucurbits & Tomatoes	3 days
Grapes (Table)	4 to 6 weeks
Grapes (Wine)	21 days
Potatoes	14 days

- Handle with care.
- Harmful when swallowed.
- May irritate skin and eyes.
- Store away from food and feedstuffs in a cool, dry place.
- Keep out of reach of children, uninformed persons and animals.
- **Re-entry:** Do not enter treated area until spray deposit has dried unless wearing protective clothing.

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, incompatibility with other substances not indicated on the label and the occurrence of resistance of the disease to the remedy concerned as well as by the method, time and accuracy of application. The registration holder further 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 event of any uncertainty.

PRECAUTIONS:

- Do not inhale spray mist.
- Wear protective clothing, face shield and rubber gloves while handling the product.
- Wash with soap and water after use.
- Avoid drift of spray onto other crops, grazing, rivers, dams and areas not under treatment.
- Clean application equipment thoroughly after use. Dispose of wash water where it will not contaminate crops, grazing, rivers, dams and boreholes.
- Triple rinse empty containers in the following manner: Invert the empty container over the spray or mixing tank and allow to drain for at least 30 seconds after the flow has slowed down to a drip. Thereafter, rinse the container three times with a volume of water equal to a minimum of 10 % of that of the container. Add the rinsings to the contents of the spray tank before destroying the container in the described manner.
- Destroy the empty container by perforation and flattening and dispose of it in a safe manner.
- **Never** re-use the empty container for any other purpose.
- Prevent contamination of food, feeds, drinking water and eating utensils.

RESISTANCE WARNING:

For resistance management, COPPER-FLOW-PLUS is a group code M1 fungicide. Any fungus population may contain individuals naturally resistant to COPPER-FLOW-PLUS and other group code M1 fungicide. The resistant individuals can eventually dominate the fungus population if these fungicides are used repeatedly. These resistant fungi may not be controlled by COPPER-FLOW-PLUS or any other group code M1 fungicide.

To delay fungicide resistance:

- Avoid exclusive repeated use of fungicide from the same fungicide group code. Alternate or tank mix with products from different fungicide group codes.
- Integrate other control methods (chemical, cultural, biological) into disease control programmes.

For specific information on resistance management contact the registration holder of this product.

DIRECTIONS FOR USE: Use only as directed.

Compatibility:

- The stability and efficacy of COPPER-FLOW-PLUS is pH dependant and the product should preferably not be used together with acidifying agents, buffers or phosphorous agents.
- For optimum results the final tank mixture should be at a pH of 7.

IMPORTANT:

- It is essential that COPPER-FLOW-PLUS be kept agitated throughout the entire mixing and spraying operation.
- COPPER-FLOW-PLUS must be applied within one hour of the product being diluted with water.
- All containers containing the concentrated product must be sealed properly once opened to prevent the loss of ammonia and the possible formation of crystals.
- COPPER-FLOW-PLUS is a preventative spray and application must be carried out before or just as the first signs of the disease are noticed.

APPLICATION RATES:

CROP/DISEASE	DOSAGE RATE	REMARKS
APPLES Scab (<i>Venturia inaequalis</i>)	25 ml/10 ℓ water	Spray at green tip stage. Apply two applications seven days apart.
AVOCADOS Cercospora spot, Anthracnose (<i>Collectotrichum</i>) & Sooty blotch	50 ml/10 ℓ water	Use COPPER-FLOW-PLUS preferably during low infestations and preferably as a last spray in a spray programme.
BEANS Bacterial blight (Common and halo)	50 ml/10 ℓ water	Apply every 7 to 14 days depending on the disease pressure. Spray immediately after heavy rains, hail or dust storms.
CABBAGE Downy mildew (<i>Peronospora parasitica</i>)	50 ml/10 ℓ water	Apply under pressure till run-off. Apply weekly, depending on disease development. Ensure thorough wetting. Apply preventatively.
CUCURBITS Downy mildew (<i>Pseudoperonospora cubensis</i>)	40 ml/10 ℓ water	Apply at an early trailing stage or when infestation is expected. Only use as a preventative spray. After the disease has established itself, a systemic fungicide must be used. Do not spray when plants are under stress conditions i.e. hot, dry conditions.
GRAPES Nurseries Downy mildew (<i>Plasmopara viticola</i>)	50 ml/10 ℓ water	Apply approximately 10 litres spray mixture per 100 m ² . Spray at least 4 times at weekly intervals. Use as a preventative measure.
GRAPES Downy mildew (<i>Plasmopara viticola</i>)	50 ml/10 ℓ water	Apply as preventative sprays at the post blossom stage every 7 to 10 days depending on weather conditions. Apply 10 to 15 litres spray mixture per 100 m ² .
MANGOES Bacterial spot (<i>Xanthomonas campestris pv. mangiferae indiciae</i>)	50 ml/10 ℓ water	Apply at 2 to 4 week intervals from just after fruit set until harvest. The product is especially suited for application as the last two sprays at the end of a spray programme.
PEACHES Gum spot (<i>Stigmina carpophila</i>)	40 ml/10 ℓ water	Apply at approximately 50 % leaf drop stage. Add 20 grams spray lime to each 10 litres of spray mixture.
POTATOES Early blight	50 ml/10 ℓ water	Commence spraying before or when first symptoms are noticed. Apply every 7 to 10 days depending on weather conditions, which favour development of this disease. Depending on plant size apply at a rate of 5 to 15 litres spray mixture per 100m ² . Ensure that both upper and lower surfaces are treated. Repeat application after more than 13 mm of rain or overhead irrigation.
Late blight	50 ml plus 20 g mancozeb per 10 ℓ water (tank mix)	Apply the combination as a preventative spray at 7 to 10 day intervals. Depending on plant size apply at a rate of 5 to 15 litres spray mixture per 100m ² . Ensure that both upper and lower leaf surfaces are treated. Repeat application after more than 13 mm of rain or overhead irrigation.
ROSES Black spot, Downy mildew & Rust	50 ml/10 ℓ water (5 ml/1 ℓ water)	Wet the leaves thoroughly. Spray every second week. Use a systemic fungicide as a curative spray if disease is already in progress and follow up with COPPER-FLOW-PLUS.
TOMATOES Early blight	50 ml/10 ℓ water	Start application shortly after transplant when plants are 15 cm high and before symptoms appear. Apply every 7 to 10 days depending on weather conditions favourable for development of the disease. Depending on the plant size, apply at a rate of 5 to 20 litres spray mixture per 100m ² . Ensure that both upper and lower leaf surfaces are treated. Repeat application after more than 13 mm rain or overhead irrigation.
Bacterial spot & Bacterial speck	50 ml/10 ℓ water	Apply as a preventative spray at 7 to 10 day intervals. Depending on plant size apply spray at a rate of 5 to 15 litres spray mixture per hectare. Ensure that both the upper and lower leaf surfaces are treated. Repeat application after more than 13 mm of rain or overhead irrigation.
Bacterial speck (on seedlings)	50 ml/10 ℓ water (5 ml/1 ℓ water)	Spray seedlings at weekly intervals with a hollow cone spray.

COPPER-FLOW-PLUS

Reg. No.: L6831 Wet No. 36 van 1947 • Namibië Reg. Nr.: N-AR 0798 Wet Nr. 36 van 1947

'n Koperbevattende oplossing, kontak bakterie- en swamdoder vir die voorkomende beheer van siektes soos aangedui.

FRAC SWAMDODER GROEP KODE: M1

AKTIEWE BESTANDDEEL:

Koper ammonium asetaat 315 g/ℓ
(koper ekwivalent..... 93 g/ℓ)

VERSPREIDER:

PROTEK, 'n divisie van **PE-BEE Agri (EDMS) BPK**
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VERSIGTIG



WAARSKUWINGS:

Minimum tyd wat moet verstryk tussen laaste toediening en oes of voer:	
Aartappels	14 dae
Appels, Avokado's, Mango's & Perskes	14 dae
Bone, Koolgewasse, Rankgewasse & Tamaties	3 dae
Druwe (Tafel)	4 tot 6 weke
Druwe (Wyn)	21 dae

- Hanteer versigtig.
- Skadelik wanneer ingesluk.
- Kan vel en oë irriteer.
- Berg weg van voedsel en voer in 'n koel, droë plek.
- Hou buite bereik van kinders, oningeligte persone en diere.
- **Herbetreding:** Moet nie behandelde gebied betree alvorens die spuitneerslag droog is nie, tensy beskermende oorklere gedra word.

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 grond-, klimaats- en bergingstoestande, gehalte 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 effekte op mens of dier of vir 'n gebrek aan doeltreffendheid as gevolg van die versuim van die gebruiker om die etiketaanwysings na te kom of as van die ontstaan van toestande wat nie kragtens die registrasie voorsien kon word nie. Raadpleeg die verskaffer in geval van enige onsekerheid.

VOORSORGMATREËLS:

- Moet nie spuitmis inasem nie.
- Dra beskermende klere, gesigskerm en rubberhandskoene tydens hantering van die produk.
- Was met seep en water na gebruik.
- Vermoed spuitnewel op ander gewasse, weiveld, riviere, damme en plekke wat nie behandel moet word nie.
- Maak toedieningsapparaat deeglik skoon na gebruik. Uitspoelwater moet nie gewasse, weiveld, riviere, damme en boorgate besoedel nie.
- Leë houers moet driekeer uitgespoel word soos volg: Keer die leë houer om oor die spuittenk of mengbak en dreineer vir minstens 30 sekondes nadat die vloeï tot 'n gedrup verminder het. Spoel die houer daarna driekeer uit met 'n volume water gelykstaande aan 'n minimum van 10% van die inhoud van die houer. Gooi die spoelwater by die inhoud van die spuittenk voordat die houer op die voorgeskrewe wyse vernietig word.
- Vernietig die leë houer deur gate daarin te kap en plat te slaan en doen weg daarmee op 'n veilige manier.
- Moet nooit die leë houer vir enige ander doel hergebruik nie.
- Voorkom besoedeling van voedsel, voer, drinkwater en eetgerei.

WEERSTANDSWAARSKUWING:

COPPER-FLOW-PLUS is 'n groepkode M1 swamdoder. Enige populasie van 'n spesifieke swam mag individue insluit wat 'n natuurlike weerstand teen Copper-Flow-Plus of enige ander groepkode M1 swamdoder het. Indien hierdie swamdoder herhaaldelik aangewend word, kan die weerstandbiedende individue uiteindelik die swam populasie oorheers. Hierdie weerstandbiedende swamme sal waarskynlik nie deur Copper-Flow-Plus of enige ander groepkode M1 swamdoder beheer word nie.

Om weerstand teen swamdoders te vertraag:

- Vermoed die eksklusiewe herhaaldelike gebruik van swamdoders met dieselfde groepkode. Wissel af met, of gebruik tenkmengsels van produkte in verskillende swamdoder-groep kodes,
- Integreer ander beheermaatreëls (chemies, verbouing, biologies) in swambeheer programme.

Vir spesifieke inligting oor weerstandsbestuur kontak die registrasiehouer van hierdie produk.

GEBRUIKSAANWYSINGS: Gebruik slegs soos aangedui.

Verenigbaarheid:

- Die stabiliteit en werking van **COPPER-FLOW-PLUS** is afhanklik van die pH van die oplossing en die produk moet verkieslik nie saam met versuringsmiddels, buffers of fosforbevattende bymiddels gebruik word nie.
- Vir optimum werking moet die finale tenkmengsel by 'n pH van 7 wees.

BELANGRIK:

- Dit is belangrik dat **COPPER-FLOW-PLUS** gedurende die hele meng en spuitproses geroer word.
- **COPPER-FLOW-PLUS** moet binne een uur, na verdunning met water, toegedien word.
- Alle houers wat gekonsentreerde produk bevat en oopgemaak word moet weer deeglik verseël word om die verlies van ammoniak en die moontlike vorming van kristalle te verhoed.
- **COPPER-FLOW-PLUS** is 'n voorkomende middel en toediening moet gedoen word voor, of net na eerste tekens van siekte opgemerk word.

TOEDIENINGSDOSIS:

GEWAS/SIEKTE	DOSIS	OPMERKINGS
AARTAPPELS Vroeëroes	50 ml/10 ℓ water	Begin toediening net voordat, of wanneer die eerste simptome verskyn. Dien elke 7 tot 10 dae toe, afhangend van gunstige weertoestande vir die ontwikkeling van die siekte. Dien van 5 tot 15 liter spuitmengsel per 100 m ² , afhangende van plantgrootte. Verseker dat beide oppervlakke van blare bedek word. Herhaal toediening na 13 mm of meer reën of na sprinkelbesproeiing.
Laatroes	50 ml plus 20 g mankoseb per 10 ℓ water (tenkmengsel)	Dien die tenkmengsel toe met 7 tot 10 dae intervalle as 'n voorkomende bespuiting. Dien 5 tot 15 liter spuitmengsel per 100 m ² toe afhangend van die plantgrootte. Verseker dat beide oppervlakke van blare bedek word. Herhaal toediening nadat 13 mm of meer reën geval het of na sprinkelbesproeiing.
APPELS Skurfsiekte (<i>Venturia inaequalis</i>)	25 ml/10 ℓ water	Dien twee bespuitings toe, sewe dae uitmekaar. Dien toe met groenpunt stadium.
AVOKADO'S Cercospora vlek, Antraknose (<i>Collectotrichum</i>) & Roet skimmel	50 ml/10 ℓ water	Gebruik COPPER-FLOW-PLUS verkieslik gedurende 'n lae infeksie. Die produk is veral geskik vir 'n laaste bespuiting van 'n spuitprogram.
BONE Bakteriese vlek	50 ml/10 ℓ water	Dien bespuitings toe elke 7 tot 14 dae, afhangende van die siektedruk. Spuit dadelik weer na 'n reënui, haelbui of na 'n stofstorm.
DRUIWE Kwekerye Donsige skimmel (<i>Plasmopara viticola</i>)	50 ml/10 ℓ water	Spuit op steggies teen ongeveer 10 liter spuitmengsel per 100 m ² . Spuit minstens 4 keer met weeklikse tussenposes. Gebruik as voorkomende maatreeël.
DRUIWE Donsige skimmel (<i>Plasmopora viticola</i>)	50 ml/10 ℓ water	Dien as voorkomende bespuitings toe na blom, elke 7 tot 10 dae, afhangende van weerstoestande. Dien 10 tot 15 liter spuitmengsel per hektaar toe.
KOOL Donsige skimmel (<i>Peronospora parasitica</i>)	50 ml/10 ℓ water	Dien toe onder druk tot punt van afloop. Dien weekliks toe, afhangende van siektedruk. Verseker deeglike benatting. Dien voorkomend toe.
MANGO'S Bakteriese vlek (<i>Xanthomonas campestris pv. magniferae indicae</i>)	50 ml/10 ℓ water	Dien toe vanaf vrugstadium tot oes met 2 tot 4 weke tussenposes. Die produk is veral geskik vir die laaste twee bespuitings aan die einde van 'n spuitprogram.
PERSKES Gomvlek (<i>Stigmia carcophila</i>)	40 ml/10 ℓ water	Dien toe op ongeveer 50 % bladval stadium. Voeg 20 gram spuitkalk by elke 10 liter van die spuitmengsel.
RANKGEWASSE Donsige skimmel (<i>Pseudoperonospora cubensis</i>)	40 ml/10 ℓ water	Dien toe op vroeë rankstadium wanneer vermoed word dat siekte mag voorkom. Dien slegs voorkomend toe. Indien die siekte reeds gevestig is, gebruik 'n sistemiese middel. Moet nie tydens warm, droë stremmingstoestande toedien nie.
ROSE Swartvlek, Donsige skimmel & Bruinroes	50 ml/10 ℓ water (5 ml/1 ℓ water)	Benat die blare deeglik. Spuit elke tweede week. Gebruik 'n sistemiese swammiddel as 'n korrektiewe bespuiting as die siekte alreeds posgevat het. Volg dan op met COPPER-FLOW- PLUS .
TAMATIES Vroeëroes	50 ml/10 ℓ water	Begin toediening kort na saailing verplant is, wanneer plante ongeveer 15 cm hoog staan en voordat simptome verskyn. Dien elke 7 tot 10 dae toe afhangende van weerstoestande vir die ontwikkeling van die siekte. Dien 5 tot 20 liter spuitmengsel per 100 m ² toe, afhangend, van die plantgrootte. Verseker deeglike bedekking van beide oppervlakke van die blare. Herhaal toediening nadat 13 mm reën of sprinkelbesproeiing.
Bakteriese vlek & Bakteriese stip	50 ml/10 ℓ water	Dien voorkomend toe met 7 tot 10 dae tussenposes. Dien teen 5 tot 15 liter spuitmengsel per 100 m ² toe afhangend van die plantgrootte. Verseker dat beide oppervlakke van blare bedek word. Herhaal toediening nadat 13 mm reën of meer geval het of na sprinkelbesproeiing.
Bakteriese vlek (op saailinge)	50 ml/10 ℓ water (5 ml/1 ℓ water)	Bespuit die saailinge weekliks met 'n keëltype spuitstuk.