



MOSQUIRON[®] 10 EC

Reg. no. L7818 Act/Wet 36 of/van 1947

An emulsifiable concentrate chitin inhibitor stomach insecticide for the control of mosquito larvae and fly maggots. 'n Emulsifiseerbare konsentraat chitien inhibeerende maaginsekododer vir die beheer van muskietlarwes en maaiers van vlieë.

IRAC INSECTICIDE GROUP CODE

15

IRAC INSEKDODER GROEPKODE

ACTIVE INGREDIENT/AKTIEWE BESTANDDEEL

Novaluron (benzoylurea)..... 100 g/lNovaluron (bensoïelureum)

NET VOLUME/NETTO VOLUME

..... L

REGISTRATION HOLDER/REGISTRASIEHOUER

ADAMA South Africa (Pty.) Ltd.

Reg. no. 1992/001741/07

21 Viben Street

7560 Brackenfell

T: +27 21 982 1460 F: +27 21 982 5810

infocpt@adama.com

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MOSQUIRON[®] is 'n geregistreerde handelsmerk van 'n maatskappy van die ADAMA GROEP.**

CONTACT IN EMERGENCY/KONTAK IN NOOD

Griffon Poison Information Centre: +27 82 446 8946

Tygerberg Poison Information Centre: +27 861 555 777

Batch number

Date of Manufacture

Lotnommer

Datum van Vervaardiging

UN no.:3082



WARNINGS

- Handle with care.
- Irritating to the eyes and mildly irritating to the skin.
- Toxic to aquatic organisms.
- Should not be applied in rivers, dams or wetlands.
- May cause sensitization by skin contact.
- Store away from food, drinking water, feed and other agricultural chemicals.
- Keep out of reach of children, uninformed persons and animals.
- **Aerial application:** Notify all inhabitants in the immediate vicinity of the area to be sprayed and issue the necessary warnings. Do not apply over areas that are not under treatment or allow the spray mist to drift over these areas.

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 pest against the remedy concerned as well as 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 humans or animals 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 while the product is handled.
- Avoid contamination of food, feed, drinking water and eating utensils.
- Avoid contact with eyes and skin. Wear rubber gloves and face shield when the concentrate is handled. If it comes into contact with the eyes, rinse immediately with water. If skin is contacted, wash off immediately. If it is spilled on clothes, take it off and wash immediately.
- 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 of at least 10 % of the container. Add the rinsings to the contents of the spray tank before destroying the container.
- While applying, avoid contact with the spray mixture as far as possible.
- Avoid the drift of spray to other crops, grazing, rivers or dams.
- After use, clean the applicator thoroughly and dispose of wash water where it will not contaminate other crops, grazing, rivers or dams.
- Destroy empty container and do not re-use for any other purpose.
- Take off work clothes and wash it. Wash yourself.

MODE OF ACTION

MOSQUIRON® 10 EC is an insecticide which acts by inhibiting chitin biosynthesis, resulting in interference with the normal formation of the cuticle which means normal growth and development of larvae cannot take place.

MOSQUIRON®10 EC is not systemic. It has a moderate contact action but strong stomach activity. Therefore **MOSQUIRON®10 EC** should be present on the target surface at or just after eggs are laid or when the first larvae are noticed.

Because **MOSQUIRON®10 EC** is an Insect growth regulator (IGR) and its mode of action differs from that of the pyrethroids, organophosphates and carbamates, it can therefore still be successfully used where resistance problems are experienced with other products.

As a result of its mode of action, **MOSQUIRON®10 EC** has no effect on the adult stages of predators and predatory mites. However, the juvenile stages of some of the predators may be affected. **MOSQUIRON®10** has no effect on adult honeybees.

RESISTANCE WARNING

The risk of the development of resistance against **MOSQUIRON® 10 EC** is limited because of the unusual mode of action of the product and because the recommended number of applications per season is limited. At present there is no known case of resistance against **MOSQUIRON® 10 EC** or cross resistance with pyrethroids, organophosphates or carbamates. However, it is recommended that **MOSQUIRON® 10 EC** should be alternated with other registered products with a different mode of action to prevent the development of resistance at all costs.

DIRECTIONS FOR USE

Use only as indicated

Mixing instructions

Half fill the spray tank with water. Pre-mix the required amount of **MOSQUIRON® 10 EC** in a small quantity of water and add to the spray tank while agitating. Fill the spray tank to the required volume. It is important to note that during the mixing and application process the spray mixture must be agitated continuously.

APPLICATION

Ground application

MOSQUIRON® 10 EC can be applied by any medium or high volume spray apparatus provided it is equipped with an efficient agitation mechanism and is able to distribute the spray mixture evenly over the target area. The spray apparatus must be calibrated correctly. **MOSQUIRON® 10 EC** is rain fast within 5 hours.

Aerial application

Aerial application may only be done by a registered aerial application operator using a registered and correctly calibrated aircraft according to the instructions of SABS Code 10118 (Aerial Application of Agricultural Remedies). It is important to 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:

Equipment

- Use suitable atomising equipment (hydraulic nozzles or rotary atomisers) that will produce the desired droplet size and coverage of the target area and will ensure the minimum loss of product through drift.
- The operator must use a nozzle set-up that will produce a droplet spectrum with the lowest possible relative span.

- All nozzles and atomisers should be positioned within the inner 75 % of the wingspan to prevent droplets from entering the wingtip vortices.

Application parameters

- A minimum volume of 30 L spray mixture/ha is recommended. As this product has not been evaluated at a reduced volume rate, the registration holder cannot guarantee efficacy nor be held responsible for any adverse effects if this product is applied aerially at a lower volume rate than recommended.
- A droplet coverage of 30-40 droplets/cm² must be recovered at the target.
- A droplet spectrum with a VMD of 250-280 micron is recommended. Ensure that the production of fine droplets, with a VMD less than 150 micron, is restricted to a minimum.
- The height of the spray boom should be maintained at between 3 and 4 m above the target.
- Do not spray when the aircraft is in a climb, at the top of a turn or during a dive or when banking.
- Apply before the crop growth becomes too dense, which will interfere with overall plant coverage.

Meteorological conditions

- The difference between the wet and dry bulb readings as determined by a whirling hygrometer must not exceed 8 °C.
- Do not spray under turbulent, unstable conditions or during the heat of the day when rising thermals and downdraughts occur.
- Do not spray under temperature inversion conditions (spraying in or above the inversion layer).
- Do not spray when the wind speed exceeds 15 km/h.

General

- Ensure that fields are accurately marked and 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.
- Prepared spray mixture must not be left in the spray tank for any length of time e.g. overnight.

APPLICATION RATES

PEST TARGET	AND	DOSAGE RATE	REMARKS
Mosquito larvae (<i>Culicidae spp.</i>)		Ground application 10-15ml MOSQUIRON® 10 EC /10 L water/200 m ² up to 50 cm deep (0.1 ml–0.5 ml/m ³)	MOSQUIRON® 10 EC can be applied at sewage ponds, pools, ponds, marshes and non-drinking water containers. It can be applied as a preventative application or for the control of existing young larvae preferably before mounting into the fourth instar occur. Larvae die off when they attempt to mount into the next instar. Larvae up to the second instar are controlled within 1–2 days while older larvae are controlled within 2–3 days. Use the lower rates in shallow water and the higher

	<p>Aerial application</p> <p>1.2–2.5 L/ha up to 50 cm deep</p>	<p>rates in water up to 50 cm deep. Repeat application if necessary.</p>
<p>Fly maggots</p>	<p>0.5 ml/m²</p> <p>or</p> <p>5 ml/10 m²</p>	<p>Apply to areas which are frequented by flies for breeding purposes e.g. dung heaps, garbage dumps, underneath poultry housing etc. where it is out of reach of children and animals. Use in sufficient water to wet the area to be treated sufficiently. Ensure that the correct concentration per m² is maintained during dilution.</p> <p>If fresh material is added e.g. on dung heaps and garbage dumps every layer should be treated separately with MOSQUIRON® 10 EC.</p> <p>Apply as a preventative application during ovipositioning or on larvae not older than 3–4 days. Repeat application every 14–21 days.</p>

WAARSKUWINGS

- Hanteer versigtig
- Irriterend vir die oë en matig irriterend vir die vel.
- Mag sensitisering veroorsaak deur velkontak.
- Toksies vir akwatoese organismes.
- Moet nie toegedien word in of naby riviere, damme en vleilande nie.
- Berg weg van voedsel, drinkwater, voer en ander landbouchemiese middels.
- Hou buite bereik van kinders, oningeligte persone en diere.
- **Lugtoediening:** Stel alle inwoners in die onmiddellike omgewing van die gebied wat gespuit sal word in kennis en reik die nodige waarskuwings uit. Moet nie oor water of aangrensende gebiede spuit of die spuitstof daarheen laat wegdryf nie.

Alhoewel hierdie middel omvattend onder 'n groot verskeidenheid toestande getoets is, waarborg die registrasiehouer nie dat dit onder alle toestande doeltreffend sal wees nie. Die werking en doeltreffendheid daarvan kan beïnvloed word deur faktore soos abnormale klimaats- en bergingstoestande, kwaliteit van die verdunningswater, verenigbaarheid met ander stowwe wat nie op die etiket aangedui word nie en die voorkoms van weerstand van die plaag teen die betrokke middel sowel as die tyd en akkuraatheid van toediening. Verder aanvaar die registrasiehouer nie verantwoordelikheid vir skade aan gewasse, plantegroei en die omgewing of nadelige invloede op mense of diere of vir 'n gebrek aan prestasie van die betrokke middel as gevolg van die versuim van die gebruiker om die 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 terwyl die produk hanteer word nie.
- Vermoed besoedeling van voedsel, voer, drinkwater en eetgerei.
- Voorkom aanraking met oë en vel. Dra rubberhandskoene en gesigskerm wanneer die konsentraat hanteer word. Indien dit in u oë kom, spoel onmiddellik uit. Indien dit op u vel kom, was dit dadelik af. Indien dit op u klere mors, trek dit uit en was dit.
- Keer die leë houer om oor die spuit- of mengtenk 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 10 % van die inhoud van die houer. Gooi die spoelwater by die inhoud van die spuittenk voordat die houer vernietig word.
- Vermoed kontak met die spuitstof sover moontlik tydens toediening.
- Vermoed oorwaaï van die spuitnewel na ander gewasse en weiding.
- Maak die toediener deeglik skoon na gebruik en gooi die waswater waar dit nie gewasse of weiding sal besoedel nie. Vernietig leë houer en moet dit nie vir enige ander doel gebruik nie.
- Trek werksklere uit en was dit. Was uself.

Metode van werking

MOSQUIRON® 10 EC dood die larwale stadiums van insekte deur chitienbiosintese te rem. Die huid van die insek ontwikkel nie normaal nie en normale groei en ontwikkeling kan nie plaasvind nie.

MOSQUIRON® 10 EC is nie sistemies nie en het 'n matige kontakaksie, maar 'n sterk maagaksie. Dit is dus verkieslik dat **MOSQUIRON® 10 EC** alreeds op die teikenoppervlak aanwesig moet wees tydens of net na eierlegging of as die eerste larwes opgemerk word.

MOSQUIRON® 10 EC is 'n insekgroeireguleerder (IGI) en die metode van werking daarvan verskil van die van die organofosfate, karbamate en piretroïede en kan daarom nog steeds suksesvol gebruik word waar weerstand teen die ander middels ondervind word.

As gevolg van die metode van werking van **MOSQUIRON® 10 EC** is dit veilig vir volwasse roofinsekte. Die onvolwasse stadiums van sommige roofinsekte mag egter benadeel word. **MOSQUIRON® 10 EC** is veilig vir volwasse heuningbye.

WEERSTANDSWAARSKUWING

Die risiko van die ontwikkeling van weerstand teenoor **MOSQUIRON® 10 EC** is beperk weens die ongewone werkingswyse van die produk en die beperking van die aantal toedienings wat per seisoen aanbeveel word. Daar is tot dusver geen geval van weerstand teen

MOSQUIRON® 10 EC of kruisweerstand teenoor organofosfate, karbamate of piretroïede bekend nie. Desnieteenstaande word aanbeveel dat **MOSQUIRON® 10 EC** afgewissel word met geregistreerde middels met 'n ander werkingswyse om moontlike weerstandsontwikkeling van teikenplae ten alle koste te verhoed.

GEBRUIKSAANWYSINGS

Gebruik alleenlik soos aangedui.

Menginstruksies

Maak die tenk halfvol met water. Voeg die benodigde hoeveelheid **MOSQUIRON® 10 EC** in 'n aparte houër en meng met 'n klein hoeveelheid water en voeg in die spuittenk terwyl geroer word. Vul die tenk met water. Dit is belangrik om daarop te let dat tydens vermenging en toediening die spuitmengsel gedurigdeur geroer moet word.

TOEDIENING

Grondtoediening

MOSQUIRON® 10 EC kan met enige medium tot hoëvolume spuitapparaat toegedien word, mits dit toegerus is met 'n doeltreffende roermeganisme en dit in staat is om die spuitmengsel eweredig oor die teikengebied te versprei. Dit is belangrik om daarop te let dat die spuitapparaat wat gebruik word, korrek gekalibreer is.

MOSQUIRON® 10 EC is binne 5 uur reënvas.

Lugtoediening

Lugtoediening mag slegs deur 'n geregistreerde lugbespuitingsoperateur met 'n geregistreerde en korrek gekalibreerde vliegtuig volgens instruksies van SABS Kode 10118 ("Aerial Application of Agricultural Remedies") gedoen word. Dit is belangrik om te verseker dat die spuitmengsel eweredig oor die teikenarea versprei word en dat die verlies aan spuitmengsel tydens toediening tot die minimum beperk word. Die volgende kriteria moet nagekom word.:

Toerusting

- Gebruik geskikte atomiseringsapparaat (hidroliese of roterende spuitkoppe) wat die vereiste druppelgrootte en bedekking van die teiken sal produseer, maar wat die minste verlies van produk deur wegdrywing sal verseker.

- Die operateur moet 'n spuitstelsel gebruik wat 'n druppelspektrum met die kleinste moontlike relatiewe span sal produseer.
- Al die spuitkoppe en atomiseerders moet in die binneste 75 % van die vlerkspan geplaas word om die beweging van druppels in die vlerkvorteks in te beperk.

Toedieningsvereistes

'n Minimum volume van 30 L spuitmengsel/ha word aanbeveel. Aangesien hierdie produk nie teen 'n verlaagde spuitvolume getoets is nie, kan die registrasiehouer nie effektiwiteit waarborg of verantwoordelik gehou word vir enige nadelige effek indien hierdie produk teen 'n laer volume as hierbo aanbeveel, uit die lug toegedien word nie.

- 'n Druppelbedekking van 30-40 druppels/cm² moet op die teikenarea herwin word.
- 'n Druppelspektrum met 'n VMD van 250-280 mikron word aanbeveel. Verseker dat die produksie van fyn druppels, die wat kleiner as 150 mikron is, tot 'n minimum beperk word.
- Die hoogte van die spuitbalk moet tussen 3 en 4 m bo die teiken gehandhaaf word.
- Moet nie spuit wanneer die vliegtuig aan die bopunt van 'n draai is of tydens 'n duik of terwyl dit uitklim of draai nie.

Meteorologiese toestande

- Die verskil tussen die nat- en droëbollesing, soos met 'n swaaihygrometer bepaal, moet nie 8 °C oorskry nie.
- Moenie toedien tydens turbulente en onstabiele weerstoestande of gedurende die hitte van die dag wanneer stygende en dalende konveksie windbeweging plaasvind nie.
- Moenie toedien onder temperatuur inversie toestande (deur bo of binne die inversielaag te spuit) nie.
- Moenie spuit indien die windspoed 15 km/uur oorskry nie.

Algemeen

- Verseker dat die gebiede wat bespuit moet word akkuraat gemerk is en dat die spuitoperateur presies weet watter lande gespuit moet word.
- Verkry versekering van die spuitoperateur dat aan bogenoemde vereistes voldoen sal word.
- Aangemaakte spuitoplossing moenie onnodig ontstaan nie, veral nie oornag nie.

TOEDIENINGSHOEVEELHEDE

PLAAG EN TEIKEN	TOEDIENINGS-HOEVEELHEID	OPMERKINGS
Muskiet larwes <i>(Culicidae spp.)</i>	Grondtoediening 10-15ml MOSQUIRON® 10 EC /10 L water/200 m ² tot 50 cm diep (0.1 ml–0.5 ml/m ³)	MOSQUIRON®10 EC kan toegedien word by rioolaanlegte, poele, vywers, moerasse en nie-drinkwater houers. Dit kan aangewend word as 'n voorkomende of op bestaande jong larwes maar verkieslik voordat hulle na die vierde instar oorgaan. Die larwes gaan dood sodra hulle na die volgende instar tydens 'n vervelling oorgaan. Larwes tot en met die tweede instar gaan gewoonlik binne 1–2 dae dood, terwyl ouer larwes 2–3 dae neem om dood te gaan. Gebruik die laer toedieningshoeveelhede in vlak water en die hoër toedieningshoeveelheid in

PLAAG EN TEIKEN	TOEDIENINGS- HOEVEELHEID	OPMERKINGS
	<p>Lugtoediening 1.2–2.5 L/ha up to 50 cm deep</p>	<p>water tot en met 50 cm diep. Herhaal toediening indien nodig.</p>
<p>Vlieë maaiers</p>	<p>0.5 ml/m² of 5 ml/10 m²</p>	<p>Dien toe aan gebiede wat dikwels deur vlieë gebruik word om uit te broei soos byvoorbeeld mishope, stortingsterreine, onder pluimveebehuising, ens. waar dit buite bereik van kinders en diere is.</p> <p>Gebruik in genoeg water om te verseker dat die gebied wat behandel moet word deeglik benat word. Verseker egter dat die korrekte konsentrasie per m² gehandhaaf word tydens die verdunning. Indien onbehandelde materiaal bygevoeg word bv by mishope en stortingsterreine moet elke laag met MOSQUIRON®10 EC behandel word. Gebruik as 'n voorkomende toediening tydens eierlegging of op larwes nie ouer as 3–4 dae. Herhaal toediening elke 14–21 dae.</p>