



TOMAHAWK® 200 EC

Reg. No L 6652 Act / Wet 36 of 1947
N-AR 1161

A systemic emulsifiable concentrate herbicide for the control of certain woody plants as listed in forestry, grass pastures and industrial areas as well as volunteer potatoes in maize and wheat.

'n Sistemiese emulgeerbare konsentraat onkruiddoder vir die beheer van sekere houtagtige plante soos hieronder aangedui in bosbou, grasweidings en industriële gebiede sowel as opslagaartappels in koring en mielies

HRAC: Herbicide Group Code O

HRAC: Onkruiddodergroepkode O

ACTIVE INGREDIENT / AKTIEWE BESTANDDEEL

Fluroxypyr (Aryloxyphenoxy propionic acid)	200 g / ℓ
Fluroksipir (Arieloeksiefenoksie propioonsuur)	200 g / ℓ

NET VOLUME / NETTO VOLUME

..... ℓ

REGISTRATION HOLDER / REGISTRASIEHOUER

Makhteshim-Agan SA (Pty) LTD
Reg No. 1992/001741/07
21 Viben Street
Brackenfell
7560

Batch number

Lotnommer

Date of Manufacture

Datum van Vervaardiging

**TOMAHAWK® 200 EC is the registered trademark of Makhteshim-Agan Israel.
TOMAHAWK® 200 EC is die geregistreerde handelsmerk van Makhteshim-Agan,
Israel.**

UN NR:



**CAUTION
VERSIGTIG**



WARNINGS

Allow 30 days between last application and grazing of treated areas.

Allow at least 90 days between the last application and planting of Cucurbits and Bean crops.

- Handle with care.
- Poisonous if swallowed.
- The concentrate may be irritating to the eyes.
- Store in a cool, dry place away from food, feed, seed and other agricultural chemicals.
- Keep out of reach of children, uninformed persons and animals.
- **Flammable.** Keep away from flames.

Although this remedy has been extensively tested under 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, the occurrence of resistance of the weed to the product, 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 the 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. .

PRECAUTIONS

- Wear gloves and eye protection when handling the concentrate.
- Do not inhale fumes or spray mist.
- If the product comes into contact with the skin, wash with water and soap. Avoid contact with the eyes. If eyes are contacted wash out with running water for at least 15 minutes.
- Wash contaminated clothing with soap and water.
- Do not eat, drink or smoke while mixing or applying the product or before hands and face are washed.
- Prevent drift of the spray mist onto other crops, pastures, rivers, dams or any other area that is not under treatment.
- Clean application equipment after use and dispose of washwater where it will not contaminate crops, grazing, rivers, dams and boreholes.
- Prevent the contamination of food, drinking water, eating utensils and feeds.
- Rinse empty container three times with a volume of water equal to at least 10 % of the volume of the container. Add the rinsings to the spray tank. Destroy the empty container by perforating and flattening it. Never use the container for any other purpose.

1. RESISTANCE WARNING

For resistance management Tomahawk 200 EC is a group Code O herbicide. Any weed population may contain individuals naturally resistant to Tomahawk 200 EC and other group code O Herbicides. The resistant individuals can eventually dominate the weed population if these herbicides are used repeatedly. These resistant weeds may not be controlled by Tomahawk 200 EC or any other group O Herbicides. To delay herbicide resistance:

1. Avoid exclusive repeated use of herbicides from the same herbicide group code. Alternate or tank mix with products from different herbicide codes.

2. Integrate control methods (chemical, cultural and biological) into weed control programmes.

For specific information on resistance management contact your local distributor

DIRECTIONS FOR USE:

Use only as directed

MIXING INSTRUCTIONS

Half fill the spray tank with clean water. If necessary, the pH of the spray mixture can be corrected ($\text{pH} < 7$) by making use of a suitable buffer. Mix the required volume of TOMAHAWK[®] 200 EC separately in a small amount of water and add to the spray tank while agitating. Fill the spray tank with water while agitation is kept up. Just before the spray tank is filled, add the adjuvant, based on a mineral oil, to the content of the spray tank according to the dosage rates indicated below. Ensure that the spray mixture is constantly agitated during the mixing process and application.

APPLICATION

1. Foliar application

- TOMAHAWK[®] 200 EC can be applied by tractor mounted boomsprayers, knapsack sprayers or similar suitable applicators which are fitted with solid cone nozzles and which are able to distribute the spray mixture evenly over the target area.
- Foliar application should only take place when target plants are not subjected to any stress factors like drought, high or low temperatures or any other factor that may have a negative effect on active growth.
- Do not apply when the foliage is wet.

2. Stem application

Only *Solanum mauritianum* (Bug tree) See "Remarks" under *Solanum mauritianum*

Plants with a stem diameter up to 100 mm can be treated in this way.

TOMAHAWK[®] 200 EC is mixed in diesel and applied as a coarse droplet spray by knapsack sprayer up to height of 0,25 m from the ground level around each stem. Application can also be done by means of a paint brush. All stems and exposed roots must be evenly and thoroughly wetted. Application should not be done when stems are wet because of dew or rain.

USE RESTRICTIONS

- Do not allow spray mist to contaminate susceptible crops eg. Potatoes or sunflower
- Prevent direct spraying on the foliage of *Pinus radiata*
- Do not spray directly into the funnels of maize plants
- It takes considerable time for target plants to die off completely. Some woody plants might take up to 4 – 5 months to die off completely. Active growth of the target plants stop shortly after application
- It is of the utmost importance that the target plants are growing actively at application.
- When treating woody plants, it is very important to use an adjuvant based on a mineral oil according to the label recommendations.
- Do not use TOMAHAWK[®] 200 EC in sweetcorn or pop corn

WOODY PLANTS	DOSAGE RATE	REMARKS
<i>Acacia cyclops</i> Rooikrans Seedlings only not higher than 0,5 m	250 ml + 500 ml mineral oil / 100 ℓ water	Foliar application Use enough spray mixture to ensure thorough wetting of young actively growing seedlings up to 0,5 m high. To ensure that seedlings grow actively application should be done in late spring or early summer after sufficient rainfall in winter. An adjuvant based on a mineral oil should be added at 500 ml per 100 ℓ water. Buffer the spray mixture with a suitable buffer to obtain a pH of 5 – 6.
<i>Acacia mearnsii</i> Black wattle	125 ml + 500 ml mineral oil / 100 ℓ water	Foliar application Use sufficient spray mixture to cover all leaves and stems of young actively growing plants with a maximum height of 1,0 m. An adjuvant based on a mineral oil must be added at a rate of 500 ml / 100 ℓ spray mixture.
<i>Acacia melanoxylon</i> Blackwood	125 ml + 500 ml mineral oil / 100 ℓ water	Foliar application Use sufficient spray mixture to cover all leaves and stems of all young actively growing plants with maximum height of 1,0 m. An adjuvant based on a mineral oil must be added at a rate of 500 ml / 100 ℓ spray mixture.
<i>Acacia saligna</i> Port Jackson Seedlings as well as re-growth not higher than 0,5 m	250 ml + 500 ml mineral oil / 100 ℓ water	Foliar application Use sufficient spray mixture to thoroughly wet all leaves and stems of actively growing plants up to point of run-off for seedlings up to 0,5 m high. To ensure that plants grow actively application should be done in late spring or early summer after sufficient rainfall in winter. An adjuvant, based on a mineral oil, should be added at 500 ml per 100 ℓ water. Buffer the spray mixture with a suitable buffer to obtain a pH of 5 – 6. When applying to regrowth it should be ensured that all shoots, leaves and stems are thoroughly wetted.
<i>Solanum elaeagnifolium</i> Satans bush	250 ml / 100 ℓ water + 500 ml mineral oil / 100 ℓ water OR 500 ml / ha + 1,0 ℓ mineral oil Follow on spot spray 125 ml + 500 ml mineral oil / 100 ℓ water	Foliar application Apply to young actively growing plants in spring or early summer. Apply in at least 200 ℓ water / ha and ensure that all leaves and stems are thoroughly wetted to just before the point of run-off. Because <i>Solanum elaeagnifolium</i> has a very deep root system, it may have re-growth from the rootstocks. It is recommended that this regrowth be treated with a spotspray. Apply the re-spray to actively growing plants and ensure that all leaves and stems are thoroughly wetted to just before the point of run-off.

<i>Solanum mauritianum</i> Bug tree	125 ml / 100 ℓ water	<p>Foliar application</p> <p>Use sufficient spray mixture to thoroughly wet all leaves and stems of young actively growing plants which do not exceed a height of 1,0 m. If plants exceed a height of 1,0 m they should be slashed and allowed to regrow. When the regrowth has reached a height of at least 0,5 m it should be sprayed. An adjuvant based on a mineral oil should be added at a rate of 500 ml / 100 ℓ to the spray mixture.</p>
	1,0 ℓ / 100 ℓ diesel	<p>Stem treatment</p> <p>Treat all stems and thoroughly to a height of 0,25 m from the soil surface. Ensure thorough wetting of the basal part of the stem. Treat only plants which are growing actively and which have a stem diameter of less than 100 mm.</p>

B. CONTROL OF VOLUNTEER POTATOES

CROP	DOSAGE	REMARKS
MAIZE and WHEAT Volunteer potatoes	0,75 – 1,0 ℓ / ha	<p>Start application as soon as most potatoes have emerged and are in the 6-leaf stage. Use the lower dosage for potatoes in the 6 – 8 leaf stage and the higher dosage for potatoes from the 8-leaf stage up to flowering. Ensure that all leaves and stems of the potatoes are thoroughly wetted. In case of spraying volunteer potatoes in maize, the maize must be at least 0,5 m high at the time of application. Do not apply in the funnels of maize plants or spray over the maize plants. Use a directed spray to ensure that no shading off of the spray mixture on the potatoes takes place. It takes about 12 – 15 days for the first symptoms to be noticed. Do not use as an adjuvant based on a mineral oil. Only potatoes present at application will be controlled. Potatoes germinating after application will not be controlled.</p> <p>Do not use in sweet corn or pop corn. Wheat should preferable be in the 2-leaf stage to the stem elongation stage when application is done.</p>

WAARSKUWINGS

Laat 30 dae toe tussen laaste toediening en beweiding van behandelde gebiede.

Laat 90 dae toe tussen die laaste toediening en aanplanting van rankgewasse en Bone.

- Hanteer versigtig.
- Giftig indien ingesluk word.
- Die konsentraat mag irritasie van die oë.
- Berg in 'n koel, droë plek weg van voedsel, voer, saad en ander landboumiddels.
- Hou buite bereik van kinders, oningeligte persone en diere.
- **Vlambaar.** Hou weg van vlamme.

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; kwaliteit van verdunningswater, verenigbaarheid met ander stowwe wat nie op die etiket aangedui is nie en die voorkoms van weerstand van die onkruid 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 en dier of vir 'n gebrek aan prestasie van die betrokke middel as gevolg van die versuim deur 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

- Dra handskoene en oogbeskerming as die konsentraat hanteer word.
- Voorkom inaseming van dampe of die sproeiwater.
- Indien dit met die vel in aanraking kom, was met seep en water.
- Vermoed kontak met die oë.
- Indien dit met die oë in aanraking kom, spoel die oë met lopende water uit vir ten minste 15 minute.
- Was besoedelde klere met water en seep.
- Moet nie eet, drink of rook tydens vermenging en toediening of voordat hande en gesig gewas is nie.
- Verhoed besoedeling van voedsel, drinkwater, eetgerei en voer.
- Maak toedieningsapparaat skoon na gebruik. Uitspoelwater moet nie gewasse, weiveld, riviere, damme en boorgate besoedel nie.

Spoel die leë houer drie keer met 'n volume water gelykstaande aan ten minste 10 % van die volume van die houer uit. Gooi die spoelwater in die spuittenk.

Vernietig die leë houer deur gate daarin te maak en plat te druk. Die houer moet vir geen ander doel gebruik word nie.

BESTANDHEIDSWAARSKUWING

Tomahawk 200 EC is 'n groepkode O onkruidodder. Enige populasie van 'n spesifieke onkruid mag individueel insluit wat 'n natuurlike weerstand teen Tomahawk 200 EC of enige ander groepkode O onkruidodders het. Indien hierdie onkruidodders herhaaldelik aangewend word, kan die weerstandbiedende individue uiteindelik die onkruidpopulasie oorheers. Hierdie weerstandbiedende onkruid sal waarskynlik nie deur Tomahawk 200 EC of enige ander groepkode O onkruidodder beheer word nie. Om weerstand teen onkruidodders te vertraag:

1. Vermoed die eksklusiewe herhaaldelike gebruik van onkruidodders met dieselfde groepkode. Wissel af met of gebruik tenkengsels van produkte in verskillende onkruidodder groepkodes.
2. Integreer ander beheermaatreëls (chemise, verbouing en biologies) in onkruidodder programme.

Vir spesifieke inligting oor weerstandsbestuur kontak u plaaslike verspreider.

GEBRUIKSAANWYSINGS

Gebruik slegs soos aangedui.

MENGINSTRUKSIES

Maak die spuittenk halfvol met skoon water. Indien dit nodig is om die pH van die spuitmengsel reg te stel ($\text{pH} < 7$) kan 'n geskikte buffer gebruik word. Vermeng die benodigde hoeveelheid TOMAHAWK[®] 200 EC apart in 'n bietjie water en voeg in die spuittenk terwyl geroer word. Vul die spuittenk met water tot amper vol is en voeg die hulpmiddel gebaseer op 'n minerale olie by die spuitmengsel volgens die voorskrifte soos hieronder aangedui. Dit is belangrik om daarop te let dat tydens vermenging en tydens toediening die spuitmengsel gedurigdeur geroer moet word.

TOEDIENING

1. BLAARBESPUITING

- Trekkergemonteerde balkspuite, rugsakspuite of soortgelyke geskikte toedieningsapparate wat toegerus is met volkeelspuitpunte en wat in staat is om die spuitmengsel eweredig oor die teikengebied te versprei, kan gebruik word vir die toediening van TOMAHAWK[®] 200 EC.
- Blaartoeiening moet alleenlik geskied as teikenplante nie onderhewig is aan enige stremmingsfaktore soos droogte, hoë en lae temperatuur of enige ander faktor wat daartoe kan lei dat die plante nie aktief groei nie.
- Moet nie toedien as die teikenplante se blare nat is nie

2. STAMBESPUITING

Slegs *Solanum mauritianum* (Luisboom) Sien "opmerkings" onder *Solanum mauritianum*

Plante met 'n stamdeursnee van tot 100 mm kan op hierdie wyse behandel word (Sien afdeling onder *Solanum mauritianum*)

TOMAHAWK[®] 200 EC word in diesel vermeng en met 'n rugsakspuit as 'n growwe druppelbespuiting rondom die stam vanaf die grondoppervlak tot op 'n hoogte van 0,25 m aangewend. 'n Verfkwas kan ook vir hierdie doel aangewend word. Alle lote en alle ontblote wortels moet goed benat word. Tydens toediening moet stamme nie nat wees nie a.g.v. dou of reën nie.

GEBRUIKSBEPERKINGS

- Moet nie toelaat dat die spuitnewel wegdryf na gevoelige plante soos byvoorbeeld aartappels en sonneblom nie.
- Moet nie direk oor die loof van *Pinus radiata* spuit nie.
- Moet nie direk in die kelke van mielieplante spuit nie.
- Dit neem 'n geruime tyd voor die teikenplante heeltemal dood is. By sommige houtagtige plante mag dit 4 – 5 maande neem. Aktiewe groei van die teikenplant staak egter kort na toediening.
- Dit is van die uiterste belang dat die teikenplante aktief moet groei tydens toediening
- By houtagtige plante is dit belangrik om van 'n hulpmiddel gebasseer, op 'n minerale olie, volgens etiketaanbeveling gebruik te maak.]
- Moet nie TOMAHAWK[®] 200 EC in suikermielies of springmielies gebruik nie

A. HOUTAGTIGE PLANTE

<p><i>Acacia cyclops</i> Rooikrans Slegs saailinge nie hoër as 0,5 m</p>	<p>250 ml + 500 ml minerale olie / 100 ℓ water</p>	<p>Blaartoediening Gebruik genoegsame spuitmengsel om alle blare en stingels van jong aktief groeiende saailinge tot en met 0,5 m hoog deeglik te benat. Om te verseker dat die saailinge aktief groei moet toediening laat in die lente of vroeë somer geskied nadat voldoende reën in die winter geval het. 'n Hulpmiddel met 'n minerale oliebasis moet teen 500 ml per 100 ℓ water bygevoeg word. Buffer die spuitoplossing met 'n geskikte buffer om 'n pH van 5 – 6 te verkry.</p>
<p><i>Acacia mearnsii</i> Swartwattel</p>	<p>125 ml + 500 ml minerale olie / 100 ℓ water</p>	<p>Blaartoediening: Gebruik genoegsame spuitmengsel om alle blare en stingels van jong aktief groeiende plante tot en met 1,0 m hoog deeglik te benat. 'n Hulpmiddel met 'n minerale olie basis moet teen 500 ml / 100 ℓ spuitmengsel bygevoeg word.</p>
<p><i>Acacia melanoxylon</i> Swarthout</p>	<p>125 ml + 500 ml minerale olie / 100 ℓ water</p>	<p>Blaartoediening: Gebruik genoegsame spuitmengsel om alle blare en stingels van jong aktief groeiende plante tot en met 1,0 m hoog deeglik te benat. 'n Hulpmiddel met 'n minerale oliebasis moet teen 500 ml / 100 ℓ spuitmengsel bygevoeg word.</p>
<p><i>Acacia saligna</i> Port Jackson saailinge sowel as hergroei nie hoër as 0,5 m</p>	<p>250 ml + 500 ml minerale olie / 100 ℓ water</p>	<p>Blaartoediening Gebruik genoegsame spuitmengsel om alle blare en stingels van jong aktief groeiende plante tot en met 0,5 m hoog deeglik tot net voor punt van afloop te benat. Om te verseker dat plante aktief groei moet toediening laat in die lente of vroeë somer toegedien word nadat voldoende reën in die winter geval het. 'n Hulpmiddel met 'n minerale oliebasis moet teen 500 ml per 100 ℓ water bygevoeg word. Buffer die spuitoplossing met 'n geskikte buffer om 'n pH van 5 – 6 te verkry. By hergroei moet verseker word dat alle spruite se blare en stingels deeglik benat word.</p>
<p><i>Solanum elaeagnifolium</i> Satansbos</p>	<p>250 ml / 100 ℓ water + 500 ml minerale olie / 100 ℓ water of 500 ml / ha + 1,0 ℓ minerale olie / ha</p> <p>Opvolg kolbespuiting: 125 ml + 500 ml minerale olie / 100 ℓ water</p>	<p>Blaartoediening Dien toe op jong aktief groeiende plante in die lente of vroeë somer. Dien in minstens 200 ℓ water / ha toe en verseker dat alle blare en stingels deeglik tot voor die punt van afloop benat word.</p> <p>Aangesien <i>Solanum elaeagnifolium</i> 'n baie goeie en diep wortelstelsel het mag dit wees dat hergroei vanaf die wortelstokke mag voorkom. Dit word aanbeveel dat hierdie hergroei met 'n kolbespuiting behandel moet word. Dien die opvolgbespuiting toe op aktief groeiende plante en sorg dat alle blare en stingels deeglik benat word tot voor die punt van afloop.</p>

<p><i>Solanum mauritianum</i> Luisboom</p>	<p>125 ml / 100 ℓ water</p> <p>1,0 / 100 ℓ diesel</p>	<p>Blaartoediening Gebruik genoegsame spuitmengsel om alle blare en stingels van jong aktief groeiende plante tot en met 1,0 m hoog deeglik te benat. Indien plante hoër as 1,0 m is, moet die plante eers afgekap word, toegelaat word om te hergroeï tot ten minste 0,5 m waarna dit bespuit kan word. ‘n Hulpmiddel met ‘n minerale oliebasis met teen 500 ml / 100 ℓ spuitmengsel bygevoeg word.</p> <p>Stambehandeling Behandel die stam vanaf die grondoppervlak tot op ‘n hoogte van ten minste 0,25 m eweredig en deeglik. Verseker deeglike benatting van die wortelkroon. Behandeling moet geskied op aktief groeiende plante waarvan die deursnit nie meer as 100 mm is nie.</p>
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B. BEHEER VAN OPSLAGAARTAPPELS

GEWAS	DOSIS	OPMERKINGS
<p>KORING en MIELIES Opslagaartappels</p>	<p>0,75 – 1,0 ℓ / ha</p>	<p>Begin met toediening sodra die meeste aartappels opgekrom het en ongeveer in die 6-blaarstadium is. Gebruik die laer dosis vir aartappels in die 6 – 8 blaarstadium en die hoër dosis vir aartappels vanaf die 8-blaarstadium tot en met die begin van blomstadium. Verseker dat alle blare en stingels van die aartappels deeglik benat word. In die geval van die bespuiting van opslagaartappels in mielies, moet die mielies ongeveer 0,5 m hoog wees tydens toediening. Moet nie direk in die kelke van, of oor mielies toedien nie maar dien as ‘n gerigte bespuiting toe om te voorkom dat afskerming van die spuitmengsel op die aartappels plaasvind. Dit neem normaalweg 12 – 15 dae voor die eerste simptome op aartappels waargeneem word. Moet nie ‘n hulpmiddel gebasseer op ‘n minerale olie gebruik nie.</p> <p>Alleenlik aartappels wat teenwoordig is tydens toediening sal beheer word. Aartappels wat na toediening opkrom sal nie beheer word nie. Moet nie TOMAHAWK® 200 EC in suikermielies of springmielies gebruik nie.</p> <p>Koring moet tydens toediening vanaf die 2-blaarstadium tot die stingelverlengingstadium wees</p>