



SIERRA

Reg. no. L10762 Act/Wet 36 of/van 1947

An emulsifiable concentrate herbicide for the selective post-emergence control of annual grasses in wheat and barley in the Western and Southern Cape and in dry land and irrigated areas of the summer rainfall region.

'n Emulgeerbare konsentraat onkruidodder vir die selektiewe na-opkombeheer van eenjarige grasse in koring en gars in die Wes- en Suid-Kaap asook droëland- en besproeiingsgebiede van die somerreëvalgebied.

HRAC HERBICIDE GROUP CODE

1

HRAC ONKRUIDDODER GROEPKODE

ACTIVE INGREDIENT/AKTIEWE BESTANDDEEL

pinoxaden (phenylpyrazolin) 50 g/L pinoxaden (phenylpyrazolin)

NET VOLUME/NETTO VOLUME

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REGISTRATION HOLDER/REGISTRASIEHOUER

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**SIERRA is a trademark of a company of the ADAMA GROUP.
SIERRA is 'n 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



**CAUTION
VERSIGTIG**



WARNINGS

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

Wheat and barley (grazing or forage) 28 days

- Poisonous if swallowed.
- Avoid skin contact.
- Toxic to fish.
- **Flammable:** Keep away from flames.
- Store in a cool place.
- Store away from food and feed.
- 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 spray over or allow the drift to contaminate water or adjacent areas.
- **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 guarantee that it will be effective under all conditions. The activity 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 weed against the remedy, as well as by the method, time and accuracy of application. The registration holder furthermore does not accept responsibility for damage to crops, vegetation, and the environment or harm to man or animal, or for lack of performance of the remedy concerned due to failure by 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 breathe vapour or spray mist.
- Avoid any contact of skin, eyes or clothing with concentrate or spray mixture.
- Wash with soap and water after use.
- Wash contaminated clothing after use.
- Do not eat, drink or smoke while handling the product, wash hands and face before doing so.
- Avoid drift of spray onto other crops especially oats, grazing, rivers, dams and areas not under treatment.
- Spray strictly with the wind to prevent prolonged or repeated exposure to the spray mist.
- Wear protective clothing, i.e. for preparation: impermeable gloves, overalls, and eyes/face protection, for application: overalls, hat or cap, and solid footwear.
- Prevent contamination of food, feed, drinking water and eating utensils.
- Clean applicator after use. Dispose of rinsate where it will not contaminate crops, grazing, rivers, dams and boreholes.

- Thoroughly wash protective equipment and clothing after use.
- Invert the empty container over the spray or mixing tank and drain for at least 30 seconds after the flow has slowed down to dripping. Thereafter rinse the empty container *three times* in succession with one quarter of the container volume fresh water and decant the rinsate into the spray or mixing tank. Puncture the triple rinsed container and dispose of via an approved collector or recycler (www.croplife.co.za).
- Do not bury, burn or donate the container to any other parties that may use it as a container for food or beverages.

RESISTANCE MANAGEMENT

SIERRA is a Group 1 herbicide. Any weed population may contain individuals naturally resistant to **SIERRA** and other group code 1 herbicides. The resistant individuals can eventually dominate the weed population if these herbicides are used repeatedly and exclusively in programs. These resistant weeds may not be controlled by **SIERRA** or any other group code 1 herbicides which inhibits acetyl-Coenzyme A (acetyl-CoA) carboxylase.

To delay herbicide resistance:

- Avoid exclusive repeated use of herbicides from the same herbicide group code. Alternate or tank mix with products from different herbicide group codes.
- Refer to individual product labels when alternating products or when using tank mixtures.
- Integrate other control methods (chemical, cultural, biological) into weed control programs.
- Maintain herbicide use records for each field.
- Prevent movement of resistant weed seeds and vegetative material to other fields by cleaning harvesting and tillage equipment and planting clean seed.
- Inspect each land annually in order to identify the development of resistance early.

The occurrence of resistant weeds is difficult to detect prior to use. If the above measures are not strictly adhered to ADAMA South Africa (Pty.) Ltd. cannot accept responsibility for any losses that may result from the failure of **SIERRA** to control resistant weeds.

- **SIERRA** should only be used once a year per field. If it becomes necessary to spray escapee target plants use as first choice products from another chemical classes or if not available use other products from the same group but do not use **SIERRA** again on the same field.
- Resistance to the **pyridinyl-oxypyphenoxyl** group of herbicides may exist in some of these populations. Do not apply **SIERRA** to these populations.

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

USE RESTRICTIONS

- Do not apply **SIERRA**
 - to wheat fields where confirmed or suspected herbicide resistance against Group 1 exist.
 - to weeds under drought or nutrient stress conditions.
 - on waterlogged soils.
 - to weeds under cold stress.
 - on any other small grain e.g. oats.
- Do not use **SIERRA** in a tank mixture with any of the phenoxy-carboxylic acids e.g. 2,4-D, MCPA or dicamba containing products as this could lead to antagonism.
- Do not use **SIERRA** over or allow spray drift to come in contact with neighbouring oats fields.
- **SIERRA** does not control volunteer maize.

MINIMUM RECROPPING INTERVALS AND CROP ROTATION GUIDELINES

SIERRA is quickly inactivated in the soil and offers full rotational flexibility for crops.

There are no re-cropping restrictions.

WEEDS CONTROLLED

The following weed species are normally controlled by **SIERRA** at the dosage rates indicated below:

Avena spp. – wild oats

Lolium spp. – ryegrass

Phalaris minor – little seeded canary grass

DIRECTIONS FOR USE

Use only as indicated.

COMPATIBILITY

The compatibility of **SIERRA** with other products may be influenced by the formulation of the products involved as well as the quality of the 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.

Compatibility studies have been conducted in wheat with **SIERRA** in single combinations of the products listed below. Multiple combinations of the compounds listed below have not been tested.

As variations may exist between formulations of products containing the same active ingredients, the trade names and registration numbers of the approved products are shown.

Do not mix SIERRA with any other product than those listed below.

SIERRA is compatible with one of the following products at a time

Herbicides:

BUCTRIL DS (L3350),
CAMPATOP 225 EC (L5320),
LOGRAN (L3600),
PEAK (L5705),
TRIANEX (L10765),
DESTROYER (L10764)

Fungicides:

ARTEA (L6820),
TILT (L6668),

Insecticides:

dimethoate,
FOLIMAT 800 SL (L2316),
KARATE EC (L3752),
METASYSTOX R 250 EC (L5584),

Adjuvants:

COMPLEMENT SUPER (L8169)

Do not add COMPLEMENT SUPER or any other adjuvant when applying **SIERRA** with BUCTRIL-DS or CAMPATOP 225 EC.

When **SIERRA** is applied with LOGRAN, TRIANEX, DESTROYER or PEAK add COMPLEMENT SUPER at 100 ml/ha.

Inferior control may result where **SIERRA** is mixed with any product other than those mentioned above.

MIXING INSTRUCTIONS

- Half-fill the spray tank with water, and pour the required amount of **SIERRA** into the spray tank while the water is being stirred. Top up with water to the final volume required.
- When **SIERRA** is tank mixed with other herbicides, insecticides and fungicides these must be added first, well mixed and in suspension before **SIERRA** is added.
- **Ensure thorough agitation of the mixture in the tank during mixing and spraying.**
- **Tank mixtures must be sprayed out immediately and not allowed to stand in the spray tank.**

APPLICATION TECHNIQUE

Apply **SIERRA** only to young actively growing weeds, i.e. weeds growing in moist soil. It is essential that all parts of the weeds are thoroughly covered by the herbicide spray to ensure effective control. **SIERRA** should be applied prior to crop growth reaching a density, which would inhibit effective coverage of the weeds. In order to achieve this the following application instructions must be adhered to:

Tractor application

SIERRA alone, or in mixtures with other herbicides may be applied with any medium or high volume sprayer equipped with an efficient agitation mechanism, provided that adequate coverage and even distribution is obtained. Best results are obtained using flat fan-type spray nozzles. Ensure thorough coverage of the weeds. For optimal control a watervolume of at least 200 L/ha should be use.

Aerial application

Avoid chemical drift at all times

Aerial application of **SIERRA** may only be done by a registered aerial application operator using a correctly calibrated, registered aircraft according to the instructions of SANS 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. Drift should be avoided at all times. It is therefore essential that the following criteria are met:

Application parameters:

- **Volume:** A volume of 30 - 35 L/ha is recommended. As **SIERRA** has not been evaluated at a reduced volume rate, the registration holder cannot guarantee efficacy or be held responsible for any adverse effects if the product is applied aerially at a lower volume rate than recommended above.
- **Droplet coverage:** A droplet coverage of 20 - 30 droplets per cm² must be recovered at the target.
- **Droplet size:** A droplet spectrum with a VMD of 350 - 400 microns is recommended. Ensure that the production of fine droplets (less than 150 microns) is restricted to a minimum.
- **Flying height:** The height of the spray boom should be maintained at 3 - 4 metres above the target. Do not spray when aircraft is in a climb, at the top or during a dive, or when banking.

Equipment:

- Use suitable atomising equipment (hydraulic nozzles or rotary atomisers) that will produce the desired droplet size and coverage but which will ensure the minimum loss of product either through endodrift (within target field) or exodrift (outside target field).
- The operator must use a set up that will produce a droplet spectrum with the lowest possible Relative Span.
- All nozzles / atomisers should be positioned within the inner 60% to 75% of the wingspan to prevent droplets from entering the wingtip vortices.

Meteorological conditions:

- 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 or reduces to less than 5km/h.
- Aerial application of **SIERRA** must not be done under turbulent, unstable conditions during the heat of the day when rising thermals and downdraughts occur.
- Also note that the application of **SIERRA** under temperature inversion conditions (spraying in or above the inversion layer) may lead to the following:
 - reduced efficacy due to suspension and evaporation of small droplets in the air (inadequate coverage)
 - damage to other sensitive crops and or non-target areas through the movement of the suspended spray cloud away from the target field.
- Under the following climatic conditions it can cause serious damage as far as 3 to 5 km from the nearest spray path of the aircraft:
 - cloudy weather with relative humidity above 80 % and low air movement of less than 5 km per hour. When such conditions prevail, aerial application should **NOT** be carried out where sensitive crops, crop seedlings, deciduous fruit trees and grape vines in budding or early development stages are present within 5 km of the nearest spray path of the aircraft.

Ensure that the aerial spray operator knows which fields to spray. Supply the precise identification to the operator of the fields to be sprayed preferably by means of a map or GPS coordinates. Indicate to the operator adjacent environmental sensitive areas or sensitive neighbouring crops, beehives or water sources that could be affected by the pesticide.

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

Important

Weeds that are overshadowed by other weeds or the crop may result in variable control due to insufficient coverage. When timing the application of **SIERRA** this aspect must be considered.

APPLICATION RATES

TABLE 1: Application rates of SIERRA on wheat and barley

| WEED | WEED STAGE | SIERRA ml/ha | Remarks |
|---|------------|--------------|---|
| Little seeded canary grass (<i>P. minor</i>) Wild oats (<i>Avena fatua</i>) | 2 - 4 leaf | 700 - 1000 | Ground application >200 L spray mixture/ha Aerial application |
| Italian ryegrass (<i>Lolium multiflorum</i>) | 2 - 4 leaf | 1000 - 1200 | 30-35 L spray mixture/ha |
| Use the higher rate to control difficult to control weed populations. Do not use the higher rate to control weeds larger than the indicated leaf stage | | | |

Remarks

- **SIERRA** has no soil residual action. Applications of **SIERRA** under adverse conditions might result in regrowth.
- A delay in application of **SIERRA** beyond the 4-leaf weed stage may result in severe yield losses due to weed competition.
- Inferior control of the target weeds may be expected when the weed stage exceeds the 4 leaf stage at the time of application.
- **SIERRA** should only be applied once in a given season on a given crop. If necessary under certain conditions TOPIK can be applied not earlier than 21 days later.
- A **SIERRA** application could be followed by a single SU application and only for broadleaf weed control.
- The use of SU's for grass control during the same crop cycle a **SIERRA** is **not** recommended.

GENERAL

- Weeds which have not germinated at the time of application will not be controlled.
- Apply only during favourable climatic conditions when the weeds are actively growing.
- **SIERRA** rapidly inhibits growth of susceptible weeds. However, visible symptoms of dying weeds may not be noticeable for 1 to 3 weeks after application depending on growing conditions and weed susceptibility.
- **SIERRA** is selective in wheat and barley and can be applied to any cultivar.

TOPIK[®], **KARATE[®]**, **LOGRAN[®]**, **PEAK[®]**, **TILT[®]**, **ARTEA[®]** and **COMPLEMENT[®]** = Registered Trade Marks of a SYNGENTA Group Company.

BUCTRIL[®], **FOLIMAT[®]**, **METASYSTOX[®]** = Registered Trade Mark of BAYER Pty Limited.

CAMPATOP[®] = Registered Trade MARK OF VILLA CROP PROTECTION Pty (Ltd)

TRIANEX and **DESTROYER** = Trademarks of a company of the ADAMA GROUP.

WAARSKUWINGS

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

Koring en gars (beweiding of kuilvoer) 28 dae

- Giftig indien ingesluk.
- Vermy velkontak.
- Giftig vir visse.
- **Vlambaar:** Hou weg van vlamme.
- Berg in 'n koel plek.
- Berg weg van voedsel en voer.
- Hou buite bereik van kinders, oningeligte persone en diere.
- **Lugtoediening:** Stel al die bewoners in die onmiddellike omgewing van die gebied wat bespuit gaan word in kennis en reik die nodige waarskuwings uit. Moet nie oor water of aangrensende gebiede spuit of die spuitnewel toelaat om dit te besoedel nie.
- **Herbetreding:** Moet nie behandelde areas betree alvorens die spuitneerslag droog is nie of tensy beskermende oorklere gedra word.

Hoewel 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 grond-, 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 onkruid 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 mens of dier of vir 'n gebrek aan prestasie van die betrokke middel as gevolg van 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 die dampe of spuitnewel inasem nie.
- Vermy enige kontak van die vel, oë of klerasie met die konsentraat of spuitmengsel.
- Was met seep en water na gebruik.
- Was besoedelde klere na gebruik.
- Moet nie eet, drink of rook tydens vermenging of toediening van die produk of voordat die hande en gesig gewas is nie.
- Vermy spuitnewel op ander gewasse, in besonder hawer, weivelde, riviere, damme en plekke wat nie behandel moet word nie.
- Spuit saam met die wind om verlengde en herhaalde blootstelling aan die spuitnewel te voorkom.
- Dra beskermende klerasie nl. tydens voorbereiding: ondeurdringbare handskoene, oorklere en oog- en -gesigbeskerming, tydens toediening: oorklere, hoofbedekking en beskermende, toe skoene.

- Voorkom die besoedeling van voedsel, voer, drinkwater en eetgerei.
- Maak toedieningsapparaat skoon na gebruik. Uitspoelwater moet nie gewasse, weiveld, riviere, damme en boorgate besoedel nie.
- Was beskermde apparate en klere deeglik na gebruik.
- Keer die leë houer oor die spuit-of mengtenk om en dreineer vir minstens 30 sekondes nadat die vloeï tot 'n drup verminder het. Spoel daarna die leë houer drie keer na mekaar met een kwart van die houervolume vars water en giet die spoelwater in die spuittenk of mengtenk oor. Kap gate in die drie-keer gespoelde houer waarna dit aan 'n goedgekeurde versamelaar of verwerker oorhandig moet word (www.croplife.co.za).
- Moet nie die houer begrawe, verbrand of aan enige ander partye skenk wat dit as houer vir voedsel of drinkgoed mag gebruik nie.

WEERSTANDBESTUUR

SIERRA is 'n Groepkode 1 onkruidodder. Enige populasie van 'n spesifieke onkruid mag individue insluit wat 'n natuurlike weerstand teen **SIERRA**, of enige ander groepkode 1 onkruidodder het. Indien hierdie onkruidodders in herhaaldelike en eksklusiewe programme aangewend word, kan die weerstandbiedende individue uiteindelik die onkruid populasie oorheers. Hierdie weerstandbiedende onkruid sal waarskynlik nie deur **SIERRA** of enige ander groepkode 1 onkruidodder wat asetiel Ko-ensiem A (asetiel-KoA) karboksilase inhibeer, beheer word nie.

Om weerstand teen onkruidodders te vertraag:

- Vermyn die herhaaldelike en eksklusiewe gebruik van onkruidodders in dieselfde onkruidodder groepkode. Wissel af met, of gebruik tenkmengsels van produkte in verskillende onkruidodder groepkodes.
- Sien toepaslike individuele produketikette wanneer daar afgewissel word, of tenkmengsels gebruik word.
- Integreer ander beheermaatreëls (chemies, verbouing, biologies) in onkruidbeheer programme.
- Hou rekord van onkruidodertoedienings vir elke land.
- Verhoed die verspreiding van weerstandbiedende onkruidsaad en vegetatiewe materiaal na ander lande deur stroop- en bewerkingstoerusting skoon te maak en skoon saad te plant.
- Ondersoek elke land jaarliks om enige tekens van weerstand vroegtydig vas te stel.

Die voorkoms van weerstandbiedende onkruid is moeilik om te identifiseer voor gebruik. Indien bostaande maatreëls nie noukeurig nagevolg word nie, kan ADAMA Suid-Afrika (Pty.) Ltd. nie verantwoordelikheid vir enige verliese aanvaar wat mag voortspruit uit die onvermoë van **SIERRA** om weerstandbiedende onkruid te beheer nie.

- **SIERRA** moet slegs een keer per jaar per land gebruik word. Indien dit nodig is om grasse te spuit wat nie met die eerste bespuiting gedood is nie, gebruik verkieslik produkte van 'n ander chemiese klas of indien nie beskikbaar is nie gebruik produkte van dieselfde klas soos TOPIK maar moenie **SIERRA** weer in dieselfde land gebruik nie.
- Weerstand mag in sommige populasies bestaan teen die **piridinil-oksifenoksie** groep van onkruidodders. Moet nie **SIERRA** op sulke populasies toedien nie.

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

GEBRUIKSBEPERKINGS

- Moenie **SIERRA** toedien op
 - graanlande waar vermoed word dat of waar bevestigde onkruiddoder weerstandbiedendheid teen Groep 1 onkruiddoders bestaan nie.
 - onkruid wat onder droogte stres ly of onder voedingstremming verkeer nie.
 - versuipkolle.
 - onkruid wat onder kouestremming verkeer nie.
 - enige ander kleingraan soos hawer nie.
- Moenie **SIERRA** in 'n tenkmengsel saam met die fenoksie hormoononkruiddoders soos 2,4-D, MCPA of dicamba gebruik nie aangesien anatagonisme ondervind kan word.
- Moet nie **SIERRA** in hawer gebruik of oor aangrensende hawer spuit of spuitstof daarheen laat wegdryf nie.
- **SIERRA** beheer nie opslag mielies nie.

MINIMUM WAGPERIODES EN WISSELBOU-AANWYSINGS

SIERRA word vinnig in die grond afgebreek en bied dus volle wisselbou buigsaamheid.

Daar is geen wisselbou beperkings

ONKRUIDE WAT BEHEER WORD

Die volgende onkruid word normaalweg deur **SIERRA** beheer teen die toedieningshoeveelhede soos hieronder aangedui:

Avena spp. – wildehawer

Lolium spp. – raaigras

Phalaris minor – kleinsaadkanariegras

GEBRUIKSAANWYSINGS

Gebruik alleenlik soos voorgeskryf.

VERENIGBAARHEID

Die verenigbaarheid van **SIERRA** met ander produkte kan beïnvloed word deur die formulasie van die betrokke produkte asook deur die kwaliteit van die water. Aangesien die formulasie van produkte kan verander sonder die medewete van ADAMA Suid-Afrika (Pty.) Ltd. en die kwaliteit van die water van plaas tot plaas kan varieer, moet 'n fisiese verenigbaarheidstoets altyd uitgevoer word voordat gespuit word.

Verenigbaarheidstudies is met **SIERRA** in koring gedoen met enkel kombinasies van die produkte hieronder gelys. Veelvoudige kombinasies van ondergenoemde produkte is nie getoets nie.

Verskille tussen formulasies van produkte wat dieselfde aktiewe bestanddele bevat, mag voorkom. Daarom word die handelsname en registrasie nommers van die spesifieke formulasies aangedui.

Moenie **SIERRA met enige ander produk meng ander as die hieronder aangedui nie.**

SIERRA is verenigbaar met een van die volgende produkte op 'n slag

Onkruiddoders:

BUCTRIL DS (L3350),
CAMPATOP 225 EC (L5320),
LOGRAN (L3600),
PEAK (L5705),
TRIANEX (L10765),
DESTROYER (L10764)

Swamdoders:

ARTEA (L6820),
TILT (L6668),

Insekdoders:

dimethoate,
FOLIMAT 800 SL (L2316),
KARATE EC (L3752),
METASYSTOX R 250 EC (L5584),

Bymiddels:

COMPLEMENT SUPER (L8169)

Moet nie COMPLEMENT SUPER of enige ander bymiddel bygevoeg indien **SIERRA** met BUCTRIL-DS of CAMPATOP 225 EC gemeng word nie.

Indien **SIERRA** egter met LOGRAN, TRIANEX, DESTROYER of PEAK gemeng word moet COMPLEMENT SUPER teen 100 ml/ha bygevoeg word.

Swakker beheer mag voorkom indien **SIERRA** met enige produk anders as bogenoemde, gemeng word.

MENGINSTRUKSIES

- Maak die spuittenk halfvol met water en voeg die benodigde hoeveelheid **SIERRA** by terwyl die water in die tenk geroer word. Vul die tenk verder totdat die verlangde volume verkry is.
- Wanneer **SIERRA** met ander onkruiddoders, insekdoders en swamdoders gemeng word moet die ander middels eers bygevoeg en goed gemeng en in suspensie gebring word voordat **SIERRA** bygevoeg word.
- **Die spuitmengsel moet tydens vermenging en toediening voortdurend in roering gehou word.**
- **Tenkmengsels moet onmiddellik uitgespuit word en nie toegelaat word om in die spuittenk te staan nie.**

TOEDIENINGSTEGNIEKE

SIERRA moet alleenlik aan jong en aktiefgroeiende onkruid toegedien word, m.a.w., onkruid wat in klam grond groei. Dit is noodsaaklik dat alle dele van die onkruid deeglik deur die onkruidodderspuitmengsel bedek word om goeie resultate te verseker. **SIERRA** moet toegedien word voordat die gewas te dig word en doeltreffende bedekking van die onkruid belemmer. Om aan bostaande te voldoen, moet die volgende toedieningsinstruksies deeglik nagekom word:

Trekkertoediening

SIERRA alleen of in mengsels met ander onkruidodders kan toegedien word met enige medium- of hoëvolume spuittoerusting wat met 'n doeltreffende roermeganisme toegerus is en wat goeie bedekking en eweredige verspreiding verseker. Die beste resultate word verkry deur gebruik te maak van spuitstukke met platwaaierspuitpunte. Verseker dat deeglike bedekking van die onkruid verkry word. Vir optimale beheer moet 'n watervolume van nie minder as 200 L/ha spuitmengsel gebruik word.

Lugtoediening

Verhoed altyd die wegdrywing van chemikalië.

SIERRA mag slegs deur lugbespuiting toegedien word deur 'n geregistreerde lugbespuitingsoperateur met 'n korrek gekalibreerde, geregistreerde vliegtuig volgens die instruksies van SANS 10118 ("Aerial application of Agricultural Remedies").

It Dit is belangrik om te verseker dat die spuitmengsel eweredig oor die teikenarea versprei word en dat die verlies aan spuitmengsel tydens toediening tot 'n minimum beperk word. Dit is dus belangrik om aan die volgende kriteria te voldoen:

Toediening parameters:

- **Volume:** n Volume van 30-35 L/ha word aanbeveel. Aangesien **SIERRA** nie teen 'n verlaagde volume getoets is nie, kan die registrasiehouer nie doeltreffendheid waarborg, of verantwoordelik gehou word vir enige nadelige effekte indien hierdie produk teen 'n laer volume, as hierbo aanbeveel, uit die lug toegedien word nie.
- **Druppelbedekking:** 'n Druppelbedekking van 20 - 30 druppels per cm² moet op die teikenarea herwin word.
- **Druppelgrootte:** 'n Druppelspektrum met 'n VMD van 350 - 400 mikrons word aanbeveel. Verseker dat die produksie van fyn druppels (kleiner as 150 mikrons – hoë drywing en verdampingspotensiaal) tot 'n minimum beperk word.
- **Vlieghoogte:** Die hoogte van die spuitbalk moet op 3 - 4 meter bo die teiken gehandhaaf word. Moet nie spuit wanneer die vliegtuig aan die bopunt is van, of tydens 'n duik nie, of terwyl dit opstyg of draai nie.

Toerusting:

- Gebruik geskikte spuitapparaat (hidroliese of roterende spuitkoppe) wat die vereiste druppelgrootte en bedekking sal produseer, maar wat die minste verlies van produk deur endodrywing (binne die teikenarea) of eksodrywing (buite die teikenarea) sal verseker).
- Die operateur moet 'n stelsel kies wat 'n druppelspektrum met die kleinste moontlike relatiewe spanwydte sal produseer.
- Al die spuitpunte / atomiseerders moet in die binneste 60% - 75% van die vlerkspan geplaas word om die beweging van druppels in die vlerkvorteks in te beperk.

Meteorologiese kondisies:

- Die verskil in temperatuur tussen die nat- en droëboltermometer van 'n swaaihigrometer, moet nie 8°C oorskry nie.
- Staak toediening indien die windspoed 15 km/uur oorskry of verminder het tot laer as 5km/uur.
- **SIERRA** moet nie uit die lug toegedien word tydens onstabiele, turbulente toestande gedurende die hitte van die dag wanneer stygende en dalende konveksie windbeweging plaasvind nie
- Dit is belangrik om daarop te let dat die lugtoediening van **SIERRA** onder temperatuur inversie toestande (deur bo of binne die inversie laag te spuit) tot die volgende probleme mag aanleiding gee:
 - Verlaagde effektiwiteit aangesien die druppels as 'n wolk in die lug bly hang en moontlik verdamp (onvoldoende bedekking op teiken), of
 - Skade aan ander nie-teiken gewasse of ander sensitiewe areas a.g.v die wegdrywing
- Tydens die volgende klimatologiese toestande kan ernstige skade so ver as 3-5 km van die naaste lugtoediening gevind word:
 - bewolkte weerstoestande met 'n relatiewe humiditeit meer as 80% en 'n lae lug beweging van minder as 5 km/uur. Onder sulke toestande moet lugtoediening nie gedoen word nie veral in die teenwoordigheid van ander sensitiewe gewasse, saailinge, vrugte bome en/of druiwe en veral tydens die bot en vroeë seisoen groeistadiums wat binne 5 km van die naaste vliegtuigtoediening.

Verseker dat die vliegtuig operateur weet watter lande om te bespuit. Voorsien hom van die presiese identifikasie van die lande wat bespuit moet word verkieslik in die vorm van kaarte of GPS koördinate. Dui ook omgewings sensitiewe areas of sensitiewe aangrensende gewasse, byekorwe of boerderye of water bronne wat moontlik deur bespuitings beïnvloed kan word.

Verkry die versekering van die vliegtuigoperateur dat aan al bogenoemde vereistes voldoen sal word en dat alle relevante data in 'n logboek aangeteken sal word en vir toekomstige gebruik

Belangrik

Onkruid wat deur ander onkruid of die gewas oorskadu word, mag onvolledig bedek word en tot wisselvallige resultate aanleiding gee. Dit moet deeglik in aanmerking geneem word by die tydsberekening van die toediening van **SIERRA**.

TOEDIENIGSHOEVEELHEDE

TABEL 1: Toedingshoeveelhe van **SIERRA** op koring en gars

| ONKRUID | ONKRUID-STADIUM | SIERRA ml/ha | OPMERKINGS |
|---|-----------------|--------------|---|
| Kleinsaadkanariegras (<i>Phalaris minor</i>) Wildehawer (<i>Avena fatua</i>) | 2 - 4 blaar | 700 - 1000 | Trekkertoediening >200 L spuitmengsel/ha Lugtoediening 30-35 L spuitmengsel/ha |
| Italiaanse raaigras (<i>Lolium multiflorum</i>) | 2 - 4 blaar | 1000 - 1200 | |

Gebruik die hoër dosis om moeilik beheerbare onkruidpopulasies te beheer.
Moenie die hoër dosis gebruik om groter onkruid te beheer as wat aangedui word nie.

Opmerkings:

- Omdat **SIERRA** nie grondwerking het nie, mag hergroei voorkom indien toedienings onder ongunstige toestande gespuit word.
- Die uitstel van 'n bespuiting van **SIERRA** tot na die 4-blaar onkruidstadium mag opbrengsverliese tot gevolg hê weens onkruidkompetisie.
- Swakker beheer van die grasse kan verwag word indien die groeistadium van die onkruid die 4-blaarstadium oorskry tydens toediening.
- **SIERRA** mag slegs eenkeer per seisoen op 'n gegewe gewas toegedien word. TOPIK mag egter onder sekere toestande na 21 dae na die **SIERRA** toediening, toegedien word.
- 'n **SIERRA**-toediening mag met slegs met 'n enkele SU toediening opgevolg word om breëblaaronkruid te beheer.
- Die toediening van SU onkruidodders vir grasbeheer word nie aanbeveel in dieselfde seisoen as waar **SIERRA** gebruik is nie.

ALGEMEEN

- Onkruid wat nog nie tydens bespuiting ontkiem het nie, sal nie beheer word nie.
- Dien slegs toe onder gunstige klimaatstoestand wanneer die onkruid aktief groei.
- Die groei van gevoelige onkruid word vinnig deur **SIERRA** geïnhibeer alhoewel die simptome nie waarneembaar mag wees voor 1 tot 3 weke na toediening nie, afhangende van die groeitoestand en onkruidgevoeligheid.
- **SIERRA** is selektief in koring en gars en kan op enige kultivar toegedien word.

TOPIK[®], KARATE[®], LOGRAN[®], PEAK[®], TILT[®], ARTEA[®] en **COMPLEMENT[®]** = Geregistreerde Handelsmerke van SYNGENTA Groep van maatskappye.

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