

KETONIC

BEFORE USING THIS PRODUCT, READ THE LABEL CAREFULLY

GEBRUIKSAANWYSYNGS INGESLUIT
VERWYS NA BESONDERHEDE
SOOS OP HOUER / SAK GEDRUK

Lotnummer
Datum van vervaardiging

KETONIC

HERBICIDE



Reg. No. L8313, Act/Wet No. 36 of/van 1947

2: 29/01/2013

A suspension concentrate, systemic herbicide for the pre-and post-emergence control and suppression of annual grasses and broadleaf weeds in maize.

'n Suspensie konsentraat, sistemiese onkruidodder vir die voor- en na-opkoms beheer en onderdrukking van eenjarige grasse en breëblaaronkruid in mielies.

HRAC HERBICIDE GROUP CODE	B, F2	HRAC ONKRUIDDODER GROEPKODE
ACTIVE INGREDIENT / AKTIEWE BESTANDDEEL		
Mesotrione (triketone)	80 g/ℓ	Mesotrioone (triketone)
Flumetsulam (triazolopyrimidine sulfonamide)	20 g/ℓ	Flumetsulam (triazolopyrimidine sulfonamide)
Sulcotrione (triketone)	180 g/ℓ	Sulcotrioone (triketone)

Registration Holder / Registrasiehouer
Meridian Agrochemical Company (Pty.) Ltd. / (Edms.) Bpk.
 Reg. No. 2000/010819/07
 P.O. Box / Posbus 436, Modderfontein, 1645, South Africa / Suid-Afrika

5ℓ



HARMFUL / SKADELIK











WARNINGS

Allow at least the following number of days between last treatment and harvest or grazing:

Maize.....70 days*

*When applied in combination with Sucrazone Flo, a withholding period of 110 days must be adhered to.

- Handle with care.
- Harmful if swallowed.
- May cause irritation to the eyes and skin.
- Store under lock and key in a cool, dry place away from food, feed, fertilizer and other agricultural products.
- Keep out of reach of children, uninformed persons and animals.
- Do not spray over, or allow any drift to contaminate, water and adjacent areas.
- Store in the original, tightly closed container away from sun and damp.
- **Do not use in sweet corn or popcorn.**
- **Re-entry** – Do not enter treated area until the spray deposit has dried unless wearing protective clothing.
- **KETONIC** has been tested on the most important commercial cultivars. More susceptible cultivars may be released in the future which need to be tested; for this, apply **KETONIC** to a limited test area before commercial applications are made.

Although this remedy has been extensively tested under a large variety of conditions, the registration holder does not warrant 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, 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 inhale fumes or spray mist.
- Do not contaminate surface water or ditches with any chemicals or used containers.
- Product must be stored sealed in the original product container.
- Avoid skin and eye contact by wearing protective clothing when mixing the product.
- In case of accidental eye contact, flush with plenty of water for at least 15 minutes and get medical attention if necessary.
- Wash with soap and water after use and accidental skin contact as well as contaminated clothing.
- Do not eat, drink or smoke while mixing or applying the product or before washing hands and face.
- Avoid drift of spray onto other crops, grazing, rivers, dams and areas not under treatment.
- Clean applicator after use. Dispose of rinsate where it will not contaminate crops, grazing, rivers, dams and boreholes.
- Do not spray, drain or flush equipment on or near trees or plants, or where their roots may reach.
- Prevent contamination of food, feeds, drinking water and eating utensils.
- Invert the empty container over the spray or mixing tank and allow it to drain for at least 30 seconds after the flow has slowed to a drip. Thereafter rinse the empty container three times with a volume of water equal to a minimum of 30% of that of the container. Add the rinsate to the contents of the spray tank.
- Clean all mixing and application equipment after use and before using it for other products.
- Keep children and animals away from stacked and waste material.
- Destroy the empty container by perforation and flattening and dispose of it in a safe way in accordance with local regulations. Do not use it for any other purpose.

USE RESTRICTIONS

- Do not use **KETONIC** on sweetcorn, popcorn, inbred parent lines or experimental or newly released cultivars/varieties without first consulting your supplier or the seed company concerned.
- Do not use **KETONIC** on poorly drained soils or soils with a compaction layer, as under these conditions waterlogging can occur and the herbicide may cause crop injury.

- Do not apply to any crop or situation not mentioned in this label.
- Do not apply this product in combination or tank mixture with any other product or agricultural remedy which is not specifically listed on this label. Meridian Agrochemical Company (Pty) Ltd accepts no responsibility for any negative effects experienced if the instructions on this label are not adhered to, unless a Meridian representative was consulted beforehand.
- Only apply **KETONIC** using an accurate and safe application technique.
- Heavy rain on very sandy soils low in organic matter, as well as flood irrigation, can reduce the weed control performance.
- For pre-emergence applications: Optimum weed control is obtained when applied to a fine, even seedbed, free of clods, trash and weeds.
- Do not apply **KETONIC** in soils with a pH (water) value of 7 or more, or under prolonged cold and wet conditions, otherwise crop damage may result
- Soil disturbance following pre- or post-emergence application of **KETONIC** may result in re-germination of weeds, resulting in a reduction in overall weed control.
- Do not apply **KETONIC** on fields where the crop rotation restrictions, on the labels of any preceding herbicides (e.g. triazines, sulfonyleureas etc.) previously used on those same fields, have not been fully complied with.
- Due to the potential of mesotrione to persist in the soil longer than anticipated, it is advised to not make use of products of the imidazolinone class as well as the triazolopyrimidine class on fields where less than 400 mm rain has fallen, where soils cannot be adequately tilled in order to allow dilution of any remaining mesotrione residues as well as to accelerate microbial degradation and within 10 months of use of any dosage rate of any other mesotrione containing formulation.

RESISTANCE WARNING

For resistance management **KETONIC** is group code F2 and B herbicide. Any weed population may contain individuals naturally resistant to **KETONIC** and other group code F2 and / or B herbicides. The resistant individuals can eventually dominate the weed population if these herbicides are used repeatedly. These resistant weeds may not be controlled by **KETONIC** or any other group code F2 or B herbicide.

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.
- Integrate the control methods (chemical, cultural, biological) into weed control programmes.

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

The presence of resistant weeds is difficult to detect prior to use and therefore neither the Registration Holder nor the Distributor can accept responsibility for any losses as a result of **KETONIC** not controlling resistant weeds. Do not apply **KETONIC** alone in situations where weed resistance has been confirmed. Sub-standard application of **KETONIC** will lead to inferior weed control and may assist in development of herbicide resistance. It is of the utmost importance to inspect treated areas at regular intervals in order to identify the occurrence of herbicide-resistant weeds timeously. Meridian Agrochemical Company (Pty) Ltd., trading as Meridian Agritech, will not accept any liability for performance failures in the event of a build-up of resistant weeds resulting from inadequate resistance management practices as indicated on the label.

MODE OF ACTION

KETONIC is a combination product, comprising of the active ingredients: Sulcotrione, Mesotrione and Flumetsulam.

Sulcotrione is a *p*-Hydroxyphenyl pyruvate dioxygenase inhibitor, thereby inhibiting carotenoid synthesis in weeds. It is absorbed predominantly through the leaves, but also through the roots.

Mesotrione is a *p*-Hydroxyphenyl pyruvate dioxygenase inhibitor, thereby inhibiting carotenoid synthesis in weeds. It is absorbed predominantly through the leaves and roots, with both acropetal and basipetal translocation.

Flumetsulam is a branched chain amino acid (leucine, isoleucine and valine) synthesis (ALS or AHAS) inhibitor. It is a systemic herbicide, absorbed by the roots and leaves of plants and translocated to growth points.

Follow-up crops:

The following waiting periods should be adhered to with respect to follow-up crops:

Wheat and barley	1 month
Grain sorghum	2 months
Potatoes	6 months
Soybeans, dry beans, groundnuts, sunflowers and cotton	9 months
All other crops	24 months

All rotational crops should be planted only after a thorough cultivation. Since the product is metabolised by microbial activity, periods of low microbial activity may extend the residual activity of **KETONIC**. Should there be any uncertainty, a test planting is recommended in all cases.

The waiting periods mentioned above are only valid if the **KETONIC** and / or complementary herbicide(s) were applied to the crop as directed on this label.

PRE-EMERGENCE WEED CONTROL

- Optimum weed control is obtained on a fine, even, well-prepared seedbed, free of clods, trash and weeds.
- Prolonged dry soil conditions following pre-emergence application may result in reduced weed control.
- Do not apply to crops and weeds stressed by abnormal weather or growing conditions, drought, waterlogged soil, insect damage, nematode infections, diseases, nutritional deficiencies or crops under stress through prior use of other agrochemicals.
- Avoid use of organophosphate insecticides in combination with **KETONIC** as crop damage may occur.
- Do not use **KETONIC** plus acetanilide graminicides on poorly drained soils or soils with a compaction layer, as under these conditions waterlogging can occur and the herbicide may cause crop injury.
- Do not use where flood irrigation is practiced.
- 10 – 20 mm of rain or irrigation is required following application so as to leach the chemical into the germination zone of the weeds. Reduced weed control may occur if this is not achieved.
- Ensure that sufficient fertiliser is correctly placed near the seed at planting to promote vigorous seedling growth.

POST-EMERGENCE WEED CONTROL

- Ensure that application is made to weeds carrying true leaves-cotyledons are not true leaves.
- Do not apply whilst weeds are wet, dormant, covered in a layer of dust or damaged by frost.
- The uptake, translocation and activity of systemic herbicides such as **KETONIC** can be reduced when weeds are growing under stress conditions and it is essential that they are growing actively. Do not apply to crops and weeds stressed by abnormal weather or growing conditions, drought, waterlogged soil, insect damage, nematode infections, diseases, nutritional deficiencies or crops under stress through prior use of other agrochemicals. Escape weeds may emerge when application is made under prolonged stress conditions. Optimum weed control will be achieved if application is delayed until the stress conditions have passed and weeds and crop are once again growing actively, provided the weeds are in the correct growth stage.
- Do not use **KETONIC** on crops which already show symptoms of soil borne diseases as the combination of disease and **KETONIC** application may result in stand loss.
- Temporary crop injury in the form of bleaching may occur under extreme weather conditions such as inadequate or excessive soil moisture or temperature extremes. Prolonged overcast conditions may also lead to temporary crop bleaching.
- Do not apply **KETONIC** within 28 days after application of an organophosphate or carbamate insecticide. Similarly, do not apply an organophosphate or carbamate insecticide within 28 days of application of **KETONIC**. Do not apply as a tank mixture with above mentioned products under any circumstances.
- Avoid drift to adjacent crops.
- Do not apply **KETONIC** to any crop or situation not mentioned in this label.
- Only apply **KETONIC** using an accurate and safe application technique. Do not apply through irrigation systems.
- If **KETONIC** is used in a tank mix with other recommended remedies, consideration must be given to the restrictions of those respective products.

DIRECTIONS FOR USE

Use only as directed.

MIXING INSTRUCTIONS

Replace cap after use. Half-fill the spray tank with suitable water, then add the required amount of **KETONIC** to the water in the tank while agitating. Fill the spray tank to the desired volume. Should tank mixtures with other herbicides be made, follow the respective manufacturers' label recommendations. Should tank mixtures be made, the **KETONIC** should be added firstly followed by other SC formulations followed by EC formulations, followed SL formulations and lastly the adjuvant if applicable. **Tank mixtures must be sprayed out immediately and not allowed to stand in the spray tank overnight.** Spraying equipment must be thoroughly flushed out at the end of the spraying operation.

COMPATIBILITY

The compatibility of **KETONIC** with other products depends on the formulations of the respective products as well as the quality of the spray water to be used. As formulations change from time to time it is recommended that a physical compatibility test be done prior to the tank mixture being made. **KETONIC** is compatible with most pyrethroid insecticides, **Signet 915 EC** (L 9071), **Ultramoc xtra EC** (L 8878), **Prefix S EC** (L 7362), **Unimoc EC** (L7341), **Ichiban 100 EW** (L 9248), **Lambda aquamul** (L 9583), **Zenit** (L 9073) and most non-ionic surfactants.

APPLICATION METHODS

Ensure that the equipment is correctly calibrated and is checked regularly during application to ensure even and accurate application. Knapsack sprayers or tractor mounted boom sprayers may be used. A spray volume of 200-300 l/ha should be used for ground application and can be applied/ via flat fan-type nozzles, preferably the low drift type to avoid fine droplets. Sleeve boom sprayers should not be used for pre-emergence applications. **Constant agitation throughout the spray operation is essential.** Only clean water should be used.

Pre-emergence application:

When planting into moist soil, **KETONIC** must be applied within three days after planting (preferably at planting) on a fine, even, firm and freshly prepared seedbed, free of weeds. The herbicide mixture should not be applied more than three days after the final cultivation for seedbed preparation. To obtain good efficacy it is necessary for the application to be followed by rain or irrigation, before emergence of the weeds. If rainfall does not occur in time and weeds begin to emerge and develop, a shallow cultivation must be performed to destroy these weeds, and mix the herbicide with the top 10 to 20 mm of soil.

RECOMMENDATIONS

- The clay content of the soil has no effect on the dosage rate of **KETONIC**.
- **KETONIC** can be applied both pre- and post-emergence of either the weeds or the crops.
- A pre-emergence application of **KETONIC** must be done on a well-prepared, weed-free seedbed in order to ensure an even distribution.

KETONIC in tank mixtures for pre-emergence weed control in maize.

% CLAY	KETONIC (l/ha)	SIGNET 915 EC (l/ha)	WEEDS CONTROLLED	
11 – 50	1.0	0. 710	<i>Amaranthus hybridus</i> <i>Bidens pilosa</i> <i>Cleome monophylla</i> * <i>Cyperus esculentus</i> * <i>Datura ferox</i> <i>Digitaria sanguinalis</i> <i>Tagetes minuta</i> <i>Urochloa panicoides</i> *	Common pigweed Common blackjack Spindlepod Yellow nutsedge Large thornapple Large Crabfinger grass Khaki weed Annual Signal grass

*Control may be erratic.

OR

% CLAY	ULTRAMOC XTRA EC (ℓ/ha)	KETONIC (ℓ/ha)	WEEDS CONTROLLED	
11 – 20	1.0 – 1.4	1.0	<i>Amaranthus hybridus</i>	Common pigweed
21 – 30	1.4 – 1.5		<i>Bidens pilosa</i>	Common blackjack
31 – 40	1.5 – 1.7		<i>Cleome monophylla</i>	Spindlepod
41 – 50	1.7 – 2.0		<i>Datura ferox</i>	Large Thornapple
			<i>Digitaria sanguinalis</i>	Large crab fingergrass
			<i>Tagetes minuta</i> *	Khaki weed
			<i>Urochloa panicoides</i> *	Annual Signal grass

*Control may be erratic.

OR

% CLAY	PREFIX S EC (ℓ/ha)	KETONIC (ℓ/ha)	Sucrazone flo (ℓ/ha)	WEEDS CONTROLLED	
11 – 50	1.2	1.0	0.15	<i>Amaranthus hybridus</i>	Common pigweed
				<i>Bidens pilosa</i>	Common blackjack
				<i>Datura ferox</i>	Large Thornapple.
				<i>Digitaria sanguinalis</i>	Large crab fingergrass
				<i>Tagetes minuta</i> *	Khaki weed

*Control may be erratic.

Remarks for above tables:

- Should other weeds be present which need to be controlled pre-emergence, then consideration should be given to inclusion of such products which are registered for those control of those specific weeds.
- Refer to the registered label of the particular tank mixture partner for possible weeds which may be controlled in addition to those listed above.
- Adhere to the use restrictions as indicated on the labels of the tank mixture partners.
- Apply within 3 days of planting.
- The pre-emergent control of *Cyperus esculentus* is dependent upon the following:
 - Planting into a firm and fine seedbed must be preceded by a deep ploughing.
 - Apply within 2 days of planting.
 - Sufficient continual soaking rain or irrigation (at least 15 mm on light soils and 25 mm on heavy soils) must fall within 7 days of spraying for the herbicide to be leached into the germination zone.

KETONIC in tank mixtures for post emergence weed control in maize.

KETONIC (ℓ/ha)	SUCRAZONE FLO (ℓ/ha)	UNIMOC EC (ℓ/ha)	WEEDS CONTROLLED	
1.0	0.4	0.75	<i>Amaranthus hybridus</i>	Common pigweed
			<i>Commelina benghalensis</i>	Benghal Wandering Jew
			<i>Datura ferox</i>	Large thornapple
			<i>Tagetes minuta</i>	Khaki weed

*Control may be erratic.

Remarks for above tables:

- Should other weeds be present which need to be controlled pre-emergence, then consideration should be given to inclusion of such products which are registered for the control of those specific weeds.
- Consult the **SUCRAZONE FLO** and **UNIMOC EC** label for the list of additional weeds which may be controlled post emergence.

ACKNOWLEDGEMENT OF TRADEMARKS

Ichiban 100 EW (L 9248)
 Lambda aquamul (L 9583)
 Prefix S EC (L 7362)
 Signet 915 EC (L 9071)
 Sucrazone flo (L 9456)
 Ultramoc Xtra EC (L 8878)
 Unimoc EC (L 7341)
 Zenit (L 9073)

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WAARSKUWINGS

Laat minstens die volgende aantal dae toe tussen laaste toediening en oes of beweiding:

Mielies.....70 dae*

*Indien in kombinasie saam met Sucrazone Flo toegedien word, moet aan 'n onthoudingsperiode van ten minste 110 dae voldoen word.

- Hanteer versigtig.
- Skadelik indien ingesluk.
- Mag vel- en oogirritasie veroorsaak.
- Bêre agter slot-en-grendel in 'n koel, droë plek, weg van voedsel, voer, kunsmis en ander landboumiddels.
- Hou buite bereik van kinders, oningeligte persone en diere.
- Moenie oor water toedien of toelaat dat die spuitnewel wegdryf en gebiede besoedel wat nie behandel word nie.
- Bêre in die oorspronklike, digsluitende houër, weg van sonlig en klammigheid.
- **Moenie op soetmielies en springmielies gebruik nie.**
- **Herbetreding:** Moenie behandelde gebied betree alvorens spuitneerslag droog is nie, tensy beskermende oorklere gedra word.
- **KETONIC** is sonder enige fitotoksiseitskade op die mees belangrikste kommersiële kultivars getoets. Meer sensitiewe kultivars mag in die toekoms vrygestel word wat eers getoets moet word; hiervoor moet **KETONIC** eers op 'n klein toetsoppervlakte aangewend word, alvorens groot kommersiële bespuitings gemaak 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. Die werking en doeltreffendheid daarvan kan beïnvloed word deur faktore soos abnormale grond-, klimaats- en bergingstoestande; kwaliteit van 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 metode, tyd en akkuraatheid van die toediening. Verder aanvaar die registrasiehouer nie verantwoordelikheid vir skade aan gewasse, plantegroei, die omgewing of vir nadelige invloede 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 die geval van enige onsekerheid.

VOORSORGMAATREËLS

- Moenie die dampe of spuitnewel inasem nie.
- Moenie oppervlakwater of slote met ander chemikalieë of gebruikte houers besoedel nie.
- Bêre produk geseël in die oorspronklike produkhouer.
- Vermyn kontak met die vel en oë deur beskermende klere tydens vermenging te dra.
- Indien toevallige oogkontak plaasvind, spoel uit met groot hoeveelhede water vir ten minste 15 minute en verkry mediese advies indien nodig.
- Was met seep en water na gebruik, of in die geval van toevallige velkontak; was besoedelde klere onmiddellik na gebruik.
- Moenie eet, drink of rook tydens vermenging of toediening van die produk of voordat hande en gesig gewas is nie.
- Vermyn wegdrywing van spuitnewel na ander gewasse, weiding, riviere, damme en gebiede wat nie behandel moet word nie.
- Maak toedieningsapparaat voor en na gebruik skoon. Uitspoelwater moet nie gewasse, weidings, riviere, damme of boorgate besoedel nie.
- Moenie toerusting uitspuit, dreineer of afspoel naby of oor bome of plante, of waar die wortels bereik kan word nie.
- Voorkom die besoedeling van voedsel, voer, drinkwater en eetgerei.
- Keer die leë houër om oor die spuitenk of mengbak en dreineer vir minstens 30 sekondes nadat die vloeï tot 'n gedrup verminder het. Spoel die houër daarna **drie keer** uit met 'n volume water gelykstaande aan 'n minimum van 30% van die inhoud van die houër. Gooi die spoelwater by die inhoud van die spuitenk.
- Maak meng- en toedieningsapparaat voor en na gebruik skoon, voordat dit vir ander produkte gebruik word.
- Hou kinders en diere weg van opgestapelde- en afvalmateriaal.

- Vernietig leë houers deur gate daarin te maak en dit plat te maak voordat daarvan op 'n veilige manier volgens plaaslike regulasies van ontslae geraak word. Moenie die houer vir enige ander doel gebruik nie.

GEBRUIKSBEPERKINGS

- Moenie **KETONIC** op soetmielies, springmielies, ingeteelde ouerlyne, eksperimentele of pas-vrygestelde kultivars/variëteite gebruik, voordat eers met jou verskaffer of betrokke saadmaatskappy geraadpleeg is nie.
- Moenie **KETONIC** op swak gedreineerde gronde of grond met 'n kompaksielaag gebruik nie, want onder versuip-toestande mag die onkruid-doder die gewas beskadig.
- Moenie op enige gewas of situasie aanwend wat nie in die voorskrifetiket verskyn nie.
- Moenie hierdie produk in kombinasie of tenkmengsel met enige ander produk of landboumiddel gebruik wat nie spesifiek op hierdie etiket gelys is nie. Meridian Agrochemical Company (Edms.) Bpk. aanvaar geen verantwoordelikheid vir enige negatiewe gevolge indien die instruksies op die etiket nie nagekom word nie, tensy 'n Meridian verteenwoordiger vooraf geraadpleeg is.
- **KETONIC** moet slegs met akkurate en veilige toedieningstegnieke toegedien word.
- Swaar reën op baie sanderige gronde wat min organiese materiaal bevat, asook vloedsproeiing, mag die onkruidbeheerprogram se werking verswak.
- Vir vooropkoms bespuiting: Optimale onkruidbeheer word verkry wanneer toediening op 'n fyn, gelyke saadbed, vry van kluite, gemors en onkruid gedoen word.
- Moenie **KETONIC** toedien in gronde met 'n pH (water) waarde van 7 of meer, of langdurige koue en nat toestande nie, want dit mag tot gewasskade lei.
- Indien grond versteur word nadat 'n voor- en na-opkoms toediening van **KETONIC** gemaak is, mag her-ontkieming plaasvind wat tot verswakte algehele onkruidbeheer kan lei.
- Moenie **KETONIC** op lande toedien waar gewasrotasie-beperkings, soos op etikette van voorafgaande onkruid-doders (bv. triasienes, sulfonielureas ens.) wat voorheen op dieselfde land gebruik is, nie volkome aan voldoen is nie.
- Weens die potensiaal van mesotrioön om langer in grond te bly as wat verwag word, is dit raadsaam om nie produkte in die imidasolinoön-groep, asook in die triasolopirimidien-groep op lande waar minder as 400 mm reën geval het, waar gronde nie genoegsaam bewerk kon word om verdunning van die oorblywende mesotrioön residue toe te laat, asook om mikrobiële afbreking te versnel en binne 10 maande van gebruik teen enige dosis van enige ander mesotrioön-bevattende formulering, te gebruik nie.

WEERSTANDSWAARSKUWING

Vir weerstandsbestuur is **KETONIC** 'n groeppkode F2 en B onkruid-doder. Enige onkruidpopulasie mag individue insluit wat 'n natuurlike weerstand teen **KETONIC** en enige ander groeppcodes F2 en/of B onkruid-doder het. Die weerstandbiedende individue kan uiteindelik die onkruidpopulasie oorheers indien hierdie onkruid-doders herhaaldelik gebruik word. Hierdie weerstandbiedende onkruid sal waarskynlik nie deur **KETONIC** of enige ander groeppcodes F2 en B onkruid-doder beheer word nie.

Om weerstand teen swamdoders te vertraag:

- Vermoed die eksklusiewe herhaaldelike gebruik van onkruid-doders met dieselfde groeppkode. Wissel af met, of gebruik tenkmengsels van, produkte in verskillende onkruid-doder-groeppcodes.
- Integreer ander beheermaatreëls (chemies, verbouing, biologies) in onkruidbeheerprogramme.

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

Die is moeilik om die teenwoordigheid van weerstandbiedende onkruid voor gebruik te bepaal en daarom kan nog die Registrasiehouer nog die Verspreider verantwoordelikheid aanvaar vir verliese a.g.v. **KETONIC** wat nie die weerstandbiedende onkruid beheer nie. Moenie **KETONIC** op sy eie toedien in situasies waar onkruidweerstand bevestig is nie. Sub-standaard toedienings van **KETONIC** sal tot verswakte onkruidbeheer lei en mag tot die ontwikkeling van onkruid-doderweerstand bydra. Dit is uiters belangrik om die behandelde gebiede noukeurig te ondersoek om te verseker dat onkruid-doder weerstandige onkruid betyds geïdentifiseer word. Meridian Agrochemical Company (Edms.) Bpk., handeldrywend as Meridian Agritech, sal geen verantwoordelikheid aanvaar vir enige gebrek aan prestasie in die geval van die opbou van onkruidweerstand as gevolg van onvoldoende weerstandsbestuurspraktyke soos aangedui op die etiket nie.

METODE VAN WERKING

KETONIC is 'n kombinasie-produk wat uit die volgende aktiewe bestanddele bestaan: Sulkotrioon, Mesotrioon en Flumetsulam.

Sulkotrioon is 'n *p*-Hidroksifenielpiruvaatdioksigenase inhibeerder, deurdat dit karotenoïedsintese in onkruid inhibeer. Dit word hoofsaaklik deur die blare, maar ook deur die wortels geabsorbeer.

Mesotrioon is 'n *p*-Hidroksifenielpiruvaatdioksigenase inhibeerder deurdat dit karotenoïedsintese in onkruid inhibeer. Dit word hoofsaaklik deur die blare, maar ook deur die wortels geabsorbeer met beide akropetale en basipetale translokering.

Flumetsulam is 'n vertakte aminosuurketting (leusien, isoleusien en valien) sintese (ALS of AHAS) inhibeerder. Dit is 'n sistemiese onkruiddoder wat deur die wortels en blare van plante geabsorbeer word en na die groeipunte getranslokeer word.

Opvolggewasse:

Die volgende wagperiodes vir opvolggewasse moet aan voldoen word.

Koring en gars	1 maand
Graansorghum	2 maande
Aartappels	6 maande
Sojabone, droëbone, grondbone, sonneblomme en katoen	9 maande
Alle ander gewasse	24 maande

Alle wisselbou gewasse moet slegs na 'n deeglike bewerking geplant word. Deurdat die produk deur mikrobiële aktiwiteit gemetaboliseer word, sal tydperke met lae mikrobiële aktiwiteit die nawerkende aktiwiteit van **KETONIC** verleng. Indien onsekerheid bestaan, word 'n toetsplanting onder alle omstandighede aanbeveel.

Die bostaande wagperiodes is slegs geldig indien die **KETONIC** en/of aanvullende onkruiddoder(s) op die gewasse toegedien is soos in die tabel aanbeveel.

VOOROPKOMS ONKRUIDBEHEER

- Die beste onkruidbeheer word op 'n fyn, egalige, goed-voorbereide saadbed, vry van klonte, gemors en onkruid verkry.
- Langdurige droë grondtoestande na 'n vooropkoms toediening mag tot verminderde onkruidbeheer lei.
- Moenie op gewasse en onkruid toedien wat onder strestoestande soos abnormale weer- of groeitoestande, droogte, versuiptoestande, insekskade, aalwurminfeksie, voedingstekorte of wanneer die gewas onder stres is a.g.v. die vorige gebruik van ander landbouchemiese middels.
- Vermyn die gebruik van organofosfaat-insekdoders in kombinasie met **KETONIC**, want dit mag tot gewasskade lei.
- Moenie **KETONIC** saam met asetanilied-grasdoders op swak dreinerende grond of gronde met 'n kompaksielaag toedien nie, aangesien versuiptoestande mag voorkom en die onkruiddoder mag gewasskade veroorsaak.
- Moenie toedien waar vloedbesproeiing gebruik word nie.
- 10 – 20 mm reënval word benodig nadat die toediening gemaak is om die produk in die ontkiemingsone van die onkruid in te loog. Verminderde onkruidbeheer mag voorkom indien dit nie plaasvind nie.
- Verseker dat genoegsame kunsmis op die regte manier naby die saad tydens planttyd geplaas word om kragtige saailing groei te bevorder.

NA-OPKOMS ONKRUIDBEHEER

- Verseker met toediening op onkruid wat ware kiemblare het, dit nie ware blare is nie.
- Moenie toedien wanneer onkruid nat, rustend, met 'n stoflaag bedek is, of rypskade het nie.
- Die opname, translokasie, en werking van sistemiese onkruiddoders soos **KETONIC** kan afneem wanneer onkruid onder stres groei en dit is noodsaaklik dat hulle aktief groei. Moenie op gewasse en onkruid toedien wat onder strestoestande soos abnormale weer- of groeitoestande, droogte, versuiptoestande, insekskade, aalwurminfeksie, voedingstekorte of wanneer die gewas onder stres is a.g.v. die vorige gebruik van ander landbouchemiese middels. Opslagonkruid mag opkom

wanneer toediening onder sulke langdurige stresstoestand gemaak word. Optimale onkruidbeheer sal plaasvind indien toediening uitgestel word totdat die stresstoestand verby is en die onkruid en gewas weereens aktiefgroeiend is, mits die onkruid by die korrekte groeistadium is.

- Moenie **KETONIC** op gewasse toedien wat alreeds simptome van grondgedraagte-siektes wys nie, aangesien die kombinasie van siekte en **KETONIC**-toediening tot verlies in gewasstand mag lei.
- Tydelike gewasskade in die vorm van vergeling mag onder uiterste weerstoestand soos onvoldoende of oormatige grondvog of met temperatuur-uiterses voorkom. Langdurige bewolkte toestande mag ook tot tydelike gewasvergeling lei.
- Moenie **KETONIC** binne 28 dae na 'n toediening van 'n organofosfaat of karbamaat insekdoder toedien nie. Net so moenie 'n organofosfaat of karbamaat insekdoder toedien binne 28 dae van 'n **KETONIC** toediening nie. Moet onder geen omstandighede tenkmengsels van bogenoemde produkte maak nie.
- Vermoed wegdrywing van spuitnewel na aangrensende gewasse.
- Moenie **KETONIC** op enige gewas of situasie toedien wat nie op die etiket aangedui is nie.
- Dien **KETONIC** slegs toe deur van akkurate en veilige toedieningstegnieke gebruik te maak. Moenie deur besproeiingssisteme toedien nie.
- Indien **KETONIC** in 'n tenkmengsel met ander aanbevole produkte gebruik word, moet oorweging aan die beperkings van daardie betrokke produkte geskenk word.

GEBRUIKSAANWYSINGS

Gebruik slegs soos aangedui.

MENGINSTRUKSIES

Sit deksel na gebruik op. Vul die spuitnek halfvol met skoon water en voeg die verlangde hoeveelheid **KETONIC** by die spuitwater terwyl dit geroer word. Maak tenk tot by die verlangde volume vol. Indien tenkmengsels met ander onkruidodders gemaak word, moet die onderskeie vervaardigers se gebruiksaanwysings op die etiket gevolg word. Indien tenkmengsels gemaak word, moet **KETONIC** eerste ingegooi word, daarna die SC formulering, gevolg deur die EC formulering, dan die SL formulering en laastens die byvoegmiddels indien nodig. **Tenkmengsels moet onmiddellik uitgespuit word en nie toegelaat word om in die spuitnek oornag te staan nie.** Spuittoerusting moet deeglik aan die einde van die spuitproses uitgespoel word.

VERENIGBAARHEID

Die verenigbaarheid van **KETONIC** met ander produkte sal van die formulering van die onderskeie produkte afhang, asook van die kwaliteit van die verdunningswater wat gebruik word. Soos formulering van tyd tot tyd verander, is dit raadsaam om eers 'n fisiese verenigbaarheidstoets te doen voordat tenkmengsels gemaak word. **KETONIC** is verenigbaar met die meeste piretroïedinsekdoders, **Signet 915 EC** (L 9071), **Ultramoc xtra EC** (L 8878), **Prefix S EC** (L 7362), **Unimoc EC** (L7341), **Ichiban 100 EW** (L 9248), **Lambda aquamul** (L 9583), **Zenit** (L 9073) en die meeste nie-ioniese benatters.

TOEDIENINGSMETODES

Maak seker dat die spuittoerusting korrek gekalibreer is en gereeld tydens toediening nagegaan word om egalige en akkurate toediening te verseker. Rugsakspuite en gemonteerde trekkerbalkspuite mag gebruik word. 'n Spuitvolume van 200-300 l/ha moet met grondtoediening gebruik word en kan deur platwaaierspuitpunte toegedien word, verkieslik dié met lae drif om fyn druppels te verhoed. Kousbalkspuite moenie vir vooropkoms-toedienings gebruik word nie. **Aanhoudende roering is deurgaans noodsaaklik gedurende die spuitproses.**

Vooropkoms-toediening:

Wanneer daar in klam grond geplant word, moet **KETONIC** binne drie dae na plant (verkieslik tydens plant) toegedien word op 'n fyn, gelyke, ferm en goed voorbereide saadbed, sonder onkruid. Die onkruidoddermengsel moenie meer as drie dae na die finale bewerking vir die saadbedvoorbereiding toegedien word nie. Om goeie doeltreffendheid te verkry moet dit na toediening reën of besproei word, voordat die onkruid opkom. Indien dit nie reën nie en onkruid ontkiem en ontwikkel, moet 'n vlakbewerking gedoen word om hierdie onkruid te vernietig en die onkruiddoder met die boonste 10 tot 20 mm van die grond in te meng.

AANBEVELINGS

- Die klei-inhoud van die grond het geen effek op die dosis van **KETONIC** nie.
- **KETONIC** kan voor- of na-opkoms vir beide onkruid of gewasse toegedien word.
- 'n Vooropkoms bespuiting van **KETONIC** moet op 'n goed-voorbereide, onkruidvrye saadbed gedoen word om sodoende 'n egalige verspreiding te verseker.

KETONIC in tenkmengsels vir vooropkoms onkruidbeheer in Mielies.

% KLEI	KETONIC (ℓ/ha)	SIGNET 915 EC (ℓ/ha)	ONKRUIDE BEHEER	
11 – 50	1.0	0.710	<i>Amaranthus hybridus</i> <i>Bidens pilosa</i> <i>Cleome monophylla</i> * <i>Cyperus esculentus</i> * <i>Datura ferox</i> <i>Digitaria sanguinalis</i> <i>Tagetes minuta</i> <i>Urochloa panicoides</i> *	Gewone misbredie Gewone knapsekêrel Rusperbossie Geeluintjie Groot stinkblaar Kruisvingergras Kakiebos Eenjarige sinjaalgras

* Beheer mag wisselvallig wees.

OF

% KLEI	ULTRAMOC XTRA EC (ℓ/ha)	KETONIC (ℓ/ha)	ONKRUIDE BEHEER	
11 – 20	1.0 – 1.4	1.0	<i>Amaranthus hybridus</i> <i>Bidens pilosa</i> <i>Cleome monophylla</i> <i>Datura ferox</i> <i>Digitaria sanguinalis</i> <i>Tagetes minuta</i> * <i>Urochloa panicoides</i> *	Gewone misbredie Gewone knapsekêrel Rusperbossie Groot stinkblaar Kruisvingergras Kakiebos Eenjarige sinjaalgras
21 – 30	1.4 – 1.5			
31 – 40	1.5 – 1.7			
41 – 50	1.7 – 2.0			

*Beheer mag wisselvallig wees.

OF

% KLEI	PREFIX S EC (ℓ/ha)	KETONIC (ℓ/ha)	Sucrazone flo (ℓ/ha)	ONKRUIDE BEHEER	
11 – 50	1.2	1.0	0.15	<i>Amaranthus hybridus</i> <i>Bidens pilosa</i> <i>Datura ferox</i> <i>Digitaria sanguinalis</i> <i>Tagetes minuta</i> *	Gewone misbredie Gewone knapsekêrel Groot stinkblaar Kruisvingergras Kakiebos

* Beheer mag wisselvallig wees.

Opmerkings vir bogenoemde tabelle:

- Sou daar ander onkruid teenwoordig wees wat voorkomend beheer moet word, moet daar oorweging geskenk word vir die insluiting van ander produkte wat geregistreer is om hierdie spesifieke onkruid te kan beheer.
- Verwys na die geregistreerde etiket van die betrokke tenkmengselvennoot vir moontlike onkruid wat beheer mag word buiten dié wat hierbo gelys is.
- Daar moet aan die gebruiksbepelings voldoen word soos dit op die etikette van die tenkmengselvennote aangedui is.
- Dien binne 3 dae na plant toe.
- Die vooropkoms beheer van *Cyperus esculentus* (geeluitjies) hang van die volgende af:
 - 'n Diep ploegbewerking moet die plant in 'n ferm en fyn saadbed voorafgaan.
 - Dien binne 2 dae na plant toe.
 - Genoegsame deurdringende reën of besproeiing (ten minste 15 mm op ligte gronde en 25 mm op swaar gronde) moet binne 7 dae na toediening van die onkruidodder na die ontkiemingsone loog.

KETONIC in tenkmengsels vir na-opkoms onkruidbeheer in Mielies.

KETONIC (ℓ/ha)	SUCRAZONE FLO (ℓ/ha)	UNIMOC EC (ℓ/ha)	ONKRUIDE BEHEER	
1.0	0.4	0.75	<i>Amaranthus hybridus</i> <i>Commelina benghalensis</i> <i>Datura ferox</i> <i>Tagetes minuta</i>	Gewone misbredie Bengaalse wandelende Jood Groot stinkblaar Kakiebos

*Beheer mag wisselvallig wees.

Opmerkings vir bogenoemde tabelle:

- Sou daar ander onkruid teenwoordig wees wat voorkomend beheer moet word, moet daar oorweging geskenk word vir die insluiting van ander produkte wat geregistreer is om hierdie spesifieke onkruid te kan beheer.
- Raadpleeg die **SUCRAZONE FLO** en **UNIMOC EC** etiket vir die lys van addisionele onkruid wat na-opkoms beheer mag word.

ERKENNING VAN HANDELSNAME

Ichiban 100 EW (L 9248)
Lambada aquamul (L 9583)
Prefix S EC (L 7362)
Signet 915 EC (L 9071)
Sucrazone flo (L 9456)
Ultramoc Xtra EC (L 8878)
Unimoc EC (L 7341)
Zenit (L 9073)

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