

# Camix<sup>®</sup> Plus

syngenta

Reg. No. **L8327** Act No. 36 of 1947 **N-AR 1498** (Namibia) **W130613** (Botswana)

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

**EMERGENCY TEL NO.:**  
**+27 82 446 8946 (Griffon)**

GROUP	27 15 11	HERBICIDE
-------	----------------	-----------

**Active Ingredients:**  
mesotrione (callistemone)... 26,8 g/ℓ  
s-metolachlor..... 208,5 g/ℓ  
atrazine..... 208,5 g/ℓ

Product names marked ® or ™, the ALLIANCE FRAME the SYNGENTA Logo and the PURPOSE ICON are Trademarks of a Syngenta Group Company



**Hazard statements:**

May cause damage to organs through prolonged or repeated exposure. Very toxic to aquatic life with long-lasting effects.



**Precautionary statements:**

**Prevention:** Do not breathe mist or vapours.

**Response:** Get medical advice/attention if you feel unwell. Collect spillage.

**Disposal:** Dispose of contents/container to an approved waste disposal plant.

**WARNING**

**UN 3082**

Registration holder  
**Syngenta South Africa (Pty) Ltd**  
Co. Reg. No. 1998/013761/07  
Private Bag X 60  
HALFWAY HOUSE, 1685  
Tel.: +27 11 541 4000

**1. WARNINGS:**

**Hazard statements:** May cause damage to organs through prolonged or repeated exposure. Very toxic to aquatic life with long-lasting effects.

**Withholding periods:** Minimum number of days between last application and harvest or grazing.

**MAIZE..... 56 days**

- May irritate the eyes and skin.
- Keep out of reach of children, uninformed persons and animals.
- Store in a cool, dry place away from food and feed.
- **Do not use in sweet corn or popcorn.**
- **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 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 and the occurrence of resistance of the disease against the remedy concerned, 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 people or animal or for lack of performance of the remedy concerned due to failure of the user to follow the label instructions or to the occurrence of conditions, that could not have been foreseen in terms of the registration. Consult the supplier in the event of any uncertainty.

**2. PRECAUTIONS:**

**Precautionary statements: Prevention:** Do not breathe mist or vapours. **Response:** Get medical advice/attention if you feel unwell. Collect spillage. **Disposal:** Dispose of contents/container to an approved waste disposal plant.

- Do not eat, drink, or smoke whilst handling this product.
- Prevent contamination of food, feed, drinking water and eating utensils.

**For safety when mixing:**

- Wear eye protection (face shield). If you get **CAMIX PLUS** in your eyes, flush it out immediately with running water for at least 15 minutes.
- Wear rubber gloves. If you get it on your skin, wash it off at once.
- If you get it on your clothes, change and wash them.
- Invert the empty container over the spray or mixing tank and allow to drain for at least 30 seconds after the flow has slowed down to a drip. Thereafter rinse the container three (3) times with a volume of water equal to a minimum of 10% of that of the container. Add the rinsate to the contents of the spray tank before destroying the container in the prescribed manner.

**For safety when spraying:**

- Avoid inhalation of spray mist.
- Avoid contact with the spray as far as possible.
- Avoid spray drift onto susceptible crops, grazing, rivers, dams and areas not under treatment.

**For safety after spraying:**

- Clean applicator thoroughly after use.
- Do not spray, drain or flush equipment on or near trees or plants or where their roots may extend.
- Dispose of wash water where it will not contaminate crops, grazing, rivers, dams or areas not under treatment.
- Destroy empty container in the prescribed manner and do not re-use for any other purpose.
- Change and wash your work clothes.
- Wash yourself.

**3. RELEVANT SUBSTANCES:**

Chemical name	
atrazine (ISO)	
Classification	Concentration (% w/w)
Skin Sens. 1; H317 STOT RE 2; H373 (Heart) Aquatic Acute 1; H400	≥ 10 - < 20

atrazine (ISO) cont.	
Classification	Concentration (% w/w)
Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1	≥ 10 - < 20
Chemical name	
s-metolachlor	
Classification	Concentration (% w/w)
Vel Sens. 1; H317 Akwaties Akuut 1; H400 Akwaties Chronies 1; H410 M-Faktor (Akute akwatiese toksisiteit): 10 M-Faktor (Chroniese akwatiese toksisiteit): 10	≥ 30 - < 50
Chemiese naam	
mesotrioon (ISO)	
Classification	Concentration (% w/w)
Repr. 2; H361d STOT RE 2; H373 (Senuweestelsel, oë) Akwaties Akuut 1; H400 Akwaties Chronies 1; H410 M-Faktor (Akute akwatiese toksisiteit): 10 M-Faktor (Chroniese akwatiese toksisiteit): 10	≥ 3 - < 10
Chemiese naam	
benoxacor	
Classification	Concentration (% w/w)
Vel Sens. 1; H317 Akwaties Chronies 1; H410 M-Faktor (Chroniese akwatiese toksisiteit): 1	≥ 1 - < 2,5
Chemiese naam	
1,2-Benzisothiazol-3(2H)-one	
Classification	Concentration (% w/w)
Acute Tox. 4; H302 Vel Irrit. 2; H315 Oog Skade. 1; H318 Vel Sens. 1; H317 Akwaties Akuut 1; H400 Akwaties Chronies 2; H411 M-Faktor (Akute akwatiese toksisiteit): 1	≥ 0,025 - < 0,05

#### 4. RESISTANCE MANAGEMENT:

**CAMIX PLUS** is a group code 27, 15 and 5 herbicide. Any weed population may contain individuals naturally resistant to **CAMIX PLUS** and other group code 27, 15 and 5

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 **CAMIX PLUS** or any other group code 27, 15 and 5 herbicides.

#### 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 other control methods (chemical, cultural, biological) into weed control programs.

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

#### 5. USE RESTRICTIONS:

##### 5.1 General

- Do not use **CAMIX PLUS** on sweet corn, popcorn and inbred parent lines of maize hybrids or newly released cultivars without first consulting with your chemical supplier or with the seed company concerned.
- Do not apply **CAMIX PLUS** through any irrigation system other than a centre pivot system.
- Disturbance of soil after the pre-emergence application can result in re-germination of weeds resulting in reduced weed control.

##### 5.2 Follow-on Crops

To avoid damage to follow-up crops the following waiting periods should be taken into consideration.

When the applied atrazine content is lower than 500 g ai/ha:

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

Where the rate of atrazine applied does exceed 500 g ai/ha but less than 1 000 g ai/ha, the waiting periods mentioned above may be reduced to 9 months except on the sandy soils of the Northwest Province and North Western Free State, which contain 0 - 10% clay.

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

The above waiting periods are valid only if the correct dosage rate were applied and normal or above average rainfall occurred after **CAMIX PLUS** application.

All rotational crops should be planted only after thorough cultivation. Since the product is metabolised by microbial activity, periods of low microbial activity might extend the residual activity of **CAMIX PLUS**. A deep plough action will allow for sufficient loosening of soil and compact layers, to

ensure a complete turning of the soil.

**Warning:** Possible damage to triazine sensitive crops

- Where soils have been treated with lime to correct the soil pH, the possibility of crop damage increases dramatically in fields where triazines were previously applied. This is due to the triazine molecules being replaced on the clay complex with calcium cations and the triazine thus becoming more available in the soil-water complex.
- No triazine sensitive crops should be planted in the season after the soil pH adjustment has been done with lime. This applies even if triazines were used at crop rotation rates in previous years. Only maize should be planted in the season directly after soil pH adjustment with lime.
- Triazine sensitive crops include all broadleaf crops e.g., different bean crops, sunflowers and all cereals e.g., wheat.
- These warnings however do not guarantee that no damage would be experienced to even the following maize crop as large volumes of previously applied triazines might now be available depending on the volume of lime applied and the rainfall experienced.

**Warning:** Possible increased efficacy, phytotoxicity and residual action

- Increasing the soil pH levels above 7 could produce conditions for increased efficacy and reduced selectivity. This increased pH may also result in increased soil residual action by certain herbicides influencing the choice of following crops especially under irrigation.
- In situations where pH adjustments has been done, take care when sulphonyl urea herbicides, triazolopyrimidine sulfonanilide herbicides and imidazolinone herbicides, which are all sensitive to soil pH fluctuations, have been used or are about to be used.

Contact your local SYNGENTA representative to discuss crop rotation and crop protection programs to follow before embarking on any pH adjustment program.

### 5.3 Factors affecting Weed Control

#### 5.3.1 Pre-emergence application

- A well prepared seedbed, free of clods and weeds is a requirement for good pre-emergence weed control.
- Prolonged dry soil conditions after a pre-emergence application may result in reduced control of germinating weeds.
- In soils with abnormal high organic matter or organic matter residues on the soil surface e.g., burnt trash or "stoppels" reduced residual action may be seen.
- Do not use **CAMIX PLUS** under stress conditions e.g., waterlogging, severe cold, excessive rain, poor fertilising, low pH, etc.
- Tank mixtures of **CAMIX PLUS** with organophosphates e.g., chlorpyrifos should be avoided as damage to the maize might occur.
- **CAMIX PLUS** should not be applied in cropping systems where flood irrigation is used.

**6. DIRECTIONS FOR USE:** Use only as indicated.

#### 6.1 Compatibility:

**CAMIX PLUS** is compatible with KARATE ZEON (L6330) and KARATE EC (L3752).

#### 6.2 Dilution Water

Use only clean water and buffer with a registered buffer.

#### 6.3 Mixing Instructions

- Fill the spray or pre-mix tank with clean water and engage agitator. Agitation must be continued throughout the mixing and spraying operation.
- Resuspend the spray mixture if agitation was suspended for longer than 5 minutes.
- When the spray or premix tank is half full with water, add **CAMIX PLUS** slowly and agitate until completely dispersed.
- If tank mixed, add **CAMIX PLUS** first to the water. Then add the emulsifiable concentrates e.g., KARATE EC.
- Continue to fill the tank to the required level with water whilst agitating.

#### 6.4 Ground Application

- **CAMIX PLUS** must be applied the same day as mixing.
- Apply by means of a tractor mounted boom sprayer which is correctly calibrated with continuous agitation to deliver at least 200 - 300 ℓ spray mixture/ha. Avoid overlapping of spray swaths.
- In case of certain pre-emergence applications with hydraulic nozzles the water volume can be lowered to 100 ℓ spray volume/ha. However, the use of the registered adjuvants at the correct rates, correct nozzles and nozzle spacing, adequate coverage and nozzle sizes are then very important. The disregard of these factors will lead to poor control of certain weeds.
- If these precautions are not adhered to the registration holder cannot be held responsible for any non-performance or damages suffered.
- Rain or irrigation of 10 - 20 mm is needed after application to leach the chemical into the germinating zone. If this precipitation does not happen within 14 days of application, reduced efficacy can be expected.

#### 6.5 Aerial Application

(Maize – only pre-emergence applications)

##### Avoid chemical drift at all times

Aerial application of **CAMIX PLUS** 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). performance or damages suffered.

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:

a) Application parameters:

- **Volume:** A volume of 25 - 30 ℓ/ha is recommended. As **CAMIX PLUS** 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 cm<sup>2</sup> 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.

b) 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 - 75% of the wingspan to prevent droplets from entering the wingtip vortices.

c) 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 5 km/h.
- Aerial application of **CAMIX PLUS** 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 **CAMIX PLUS** 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.

**6.6 Centre Pivot Application**

(Only pre-emergence in maize)

**CAMIX PLUS** can be applied through a well-operated and well-maintained centre pivot irrigation system.

The centre pivot should apply between 4.5 mm and 7.5 mm of water when applying **CAMIX PLUS** at 4,657 ℓ/ha. Control should be for about 56 days where after the follow-on application should be applied by tractor sprayer.

KARATE can be added to this pre-emergence mixture to control cutworms at the registered rate (70 ml/ha).

- Calculate the injection rate carefully and make sure it is correct.
- Apply within two (2) days of planting.
- Application should be done to fields which are well

prepared and with no germinating or established weeds.

- Applications should only be done through centre pivots equipped with an injector system.
- Once **CAMIX PLUS** has been applied on the whole of the centre pivot area, it should be set to apply the following water volumes:
  - 10 mm water/ha when clay content < 20%.
  - 15 mm water/ha when clay content is 20 - 35%.
  - 20 mm water/ha when clay content > 35%.
- Keep soil wet for a period of 7 - 14 days after application.
- Be aware that the distribution of **CAMIX PLUS** will only be as even as the application of the irrigation water.
- Do not apply chemicals through the irrigation water in excessive wind speeds (< 6 ms<sup>-1</sup>).
- Be careful when the irrigation system overlap at the end of the cycle area as serious over dosage and possible damage could occur.
- Care should be taken when applying chemicals through the centre pivot as breakages or stoppages could lead to major over application of the chemicals.
- Care should be taken not to contaminate boreholes or dams with accidental spillages of chemicals in the irrigation system. Injection of the chemicals close or at the centre is preferable. Both the injector pump and the water pump should be fitted with valves to stop injection as soon as the pivot 's forward movement is stopped. The main irrigation water supply line should also be fitted with a non-return valve to prevent treated water to run back into the supply source.

**7. CROPS:**

**7.1 MAIZE**

- The clay content of the soil does not affect the dosage rate of **CAMIX PLUS**.
- **CAMIX PLUS** must be applied pre-emergence of both the crop and the weeds.
- The pre-emergence application of **CAMIX PLUS** must be done on a well-prepared weed-free seedbed to ensure an even distribution.
- If **CAMIX PLUS** is applied as indicated, at least 28 - 56 days control of the weeds as listed can be expected.

**7.1.1 Pre-emergence application of CAMIX PLUS**

This pre-emergence application should be followed up with post-emergence applications of registered mixtures of CALLISTO (L6795), METAGAN GOLD 960 EC (L5748), GARDO GOLD (L7736), GARDOMIL GOLD (L6246) or GESAPRIM SUPER (L3914) approximately 5 - 6 weeks later, as indicated on these registered labels.

Product	Rate ℓ/ha	Weeds	
		Botanical name	Common name
<b>CAMIX PLUS</b>	1,863	<i>Acanthospermum hispidum</i>	upright starbur white goosefoot marsh grass apple-of-Peru wild gooseberry khaki weed
		<i>Chenopodium album</i>	
		<i>Echinochloa colona</i>	
		<i>Nicandra physaloides</i>	
		<i>Physalis angulata</i>	
		<i>Tagetes minuta</i>	
<b>The above weeds plus</b>			
<b>CAMIX PLUS</b>	2,794	<i>Chenopodium carinatum</i>	green goosefoot

<b>CAMIX PLUS</b>	2,794	<i>Eleusine indica</i> <i>Panicum schinzii</i> <i>Setaria pallide-fusca</i>	<b>goose grass</b> <b>sweet buffalo grass</b> <b>red bristle grass</b>
<b>The above weeds plus</b>			
<b>CAMIX PLUS</b>	3,725	<i>Amaranthus hybridus</i> <i>Brachiaria eruciformis</i> <i>Cleome monophylla</i> <i>Commelina benghalensis</i> <i>Crotalaria sphaerocarpa</i> <i>Datura ferax</i> <i>Digitaria sanguinalis</i> <i>Eragrostis curvula</i> <i>Hibiscus cannabinus</i> <i>Hibiscus trionum</i> <i>Polygonum aviculare</i> <i>Portulaca oleracea</i> <i>Tribulus terrestris</i> <i>Triumfetta pilosa</i>	<b>common pigweed</b> <b>sweet signal grass</b> <b>Spindlepod</b> <b>Benghal wandering Jew</b>  <b>mealie Crotalaria</b> <b>large thorn apple</b> <b>crab fingergrass</b> <b>weeping love grass</b> <b>Kenaf</b> <b>bladder weed</b> <b>prostrate knotweed</b> <b>Purslane</b> <b>dubbeltjie</b> —
<b>The above weeds plus</b>			
<b>CAMIX PLUS</b>	4,657	<i>Cyperus esculentus</i> <i>Urochloa panicoides</i> <i>Xanthium strumarium</i>	<b>yellow nutsedge</b> <b>herringbone grass</b> <b>cocklebur</b>
<b>Only suppressions of:</b>			
		<i>Bidens bipinnata</i> <i>Bidens pilosa</i> <i>Citrullus lanatus</i> <i>Cosmos bipinnatus</i> <i>Ipomoea purpurea</i>	<b>Spanish blackjack</b> <b>blackjack</b> <b>bitter apple</b> <b>cosmos</b> <b>common morning glory</b>

**CALLISTO®**, **CAMIX®**, **GARDO®**, **GARDOMIL®**, **GESAPRIM®**, **METAGAN®**, **PRIMAGRAM®** and **KARATE®** are registered trade marks of a Syngenta Group Company.

© **SYNGENTA AG, 2000**. Copyright of this document is reserved. All unauthorised reproduction is forbidden.

Consult the CALLISTO, MEGAGAN GOLD, GARDO GOLD, GARDOMIL GOLD, GESAPRIM SUPER, KARATE EC or KARATE ZEON labels for WARNINGS, PRECAUTIONS and DIRECTIONS FOR USE.

SA Reg.: 2014-04-30