

Primagram Gold®

syngenta.

Reg. No. L7308 Act. No. 36 of 1947 N-AR 0818 (Namibia) W130598 (Botswana)

A suspension concentrate herbicide for selective pre- and early post-emergence control of most annual grasses and broadleaf weeds in crops as indicated. Under certain conditions it will also control yellow nutsedge (*Cyperus esculentus*).



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.

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GROUP	15	HERBICIDE
	5	

Active Ingredients:

s-metolachlor (α-chloroacetamide)... 290 g/l
atrazine (triazine)..... 370 g/l



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

WARNING

1. WARNINGS:

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

- Handle with care.
- Poisonous if swallowed.
- Store in a cool place.
- Store away from food and feed.
- Keep out of reach of children, uninformed persons and animals.
- **In case of poisoning:** Call a doctor and present this label.
- **Re-entry:** Do not enter treated area within one (1) day after application unless protective clothing is worn.
- **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 drift to contaminate water or adjacent areas.

Although this remedy has been extensively tested under a large variety of conditions, the registration holder does not warrant that it will be efficacious under all conditions because the action and effect thereof may be affected by factors such as abnormal 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 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 animals 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 inhale the spray mist.
- Avoid skin contact.
- Wash with soap and water after use.
- Wash contaminated clothing after use.
- Do not eat, drink, or smoke while mixing, applying or before washing hands and face.
- Do not mix and load within at least 15 metres from boreholes, streams, rivers and dams.
- Do not apply within at least 15 metres from boreholes, streams and rivers.
- Do not apply within 60 metres from dams.
- Ensure that no back-siphoning to boreholes or dams takes place when product is applied through the irrigation system.
- 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.
- Prevent contamination of food, feed, drinking water and eating utensils.
- Rinse the empty container three (3) times with a volume of clean water equal to a minimum of 10% of the container. Add the rinsate to the content of the spray tank before destroying the container in the prescribed manner.
- Do not use the empty container for any other purpose.

First Aid and Medical Treatment

If poisoning is suspected stop working immediately. Remove patient to a well-ventilated room or to fresh air. Remove clothing and wash the patient thoroughly with soap and water. Rinse eyes with abundantly fresh and clean water. If product has been ingested induce vomiting, provided patient is conscious, and administer a large quantity of activated medical charcoal. Never give anything by mouth to an unconscious person.

Note to doctor: No specific antidote is known, treat symptomatically.

3. RELEVANT SUBSTANCES:

Chemical name
atrazine (ISO)

atrazine (ISO) cont.	
Classification	Concentration (% w/w)
Skin Sens. 1; H317 STOT RE 2; H373 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 10 M-Factor (Chronic aquatic toxicity): 10	≥ 30 - < 50

4. RESISTANCE MANAGEMENT:

PRIMAGRAM GOLD is a group code 15 and 5 herbicide. Any weed population may contain individuals naturally resistant to **PRIMAGRAM GOLD** and other group code 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 **PRIMAGRAM GOLD** or any other group code 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:

- Do not apply **PRIMAGRAM GOLD** to poorly drained soils since it may cause damage to maize and grain sorghum under waterlogged or semi-waterlogged conditions.
- Do not apply **PRIMAGRAM GOLD** to drift-sand soils, which are inclined to form a compaction layer.
- Do not apply **PRIMAGRAM GOLD** to inbred parent plants of maize hybrids or grain sorghum, or to experimental, or newly released cultivars without first consulting the manufacturer or seed supplier.
- To avoid injury to follow-up crops the following waiting periods should be observed:

a)	Maize, grain sorghum and sugarcane	nil
b)	Groundnuts, soybeans, dry beans, sunflowers, potatoes, forage sorghum and small grains	12 months
c)	All other crops	18 months (a test planting is nevertheless recommended)

Where the rate of **PRIMAGRAM GOLD** applied does not exceed 2.8 l/ha the waiting period mentioned under (b) above may be reduced to nine (9) months except on the sandy soils of the North West Province and North Western Free State which contain 0 - 10% clay.

Important

The above waiting periods are valid only if the correct dosage

rate of **PRIMAGRAM GOLD** according to soil type was applied and normal or above average rainfall occurred after **PRIMAGRAM GOLD** application.

Where GESAPRIM SUPER (L3914) has been added to **PRIMAGRAM GOLD** the waiting periods as given on the GESAPRIM SUPER label should be adhered to.

In the Springbok Flats region **PRIMAGRAM GOLD** is normally not recommended. Consult your Syngenta technical representative if an application is required.

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.
- Only maize should be planted in the season directly after soil pH adjustment with lime.
- 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.
- 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 seven 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 programs.

6. WEEDS CONTROLLED

The following weeds are normally controlled by pre-emergence applications at the dosage rates as indicated below:

<i>Acanthospermum australe</i> <i>Acanthospermum glabratum</i> <i>Acanthospermum hispidum</i> <i>Amaranthus deflexus</i> <i>Amaranthus hybridus</i> <i>Amaranthus spinosus</i> <i>Amaranthus thunbergii</i>	eight-seeded prostrate starbur five-seeded prostrate starbur upright starbur perennial pigweed common pigweed thorny pigweed red pigweed
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<i>Bidens bipinnata</i>	Spanish blackjack
<i>Bidens pilosa</i>	blackjack
<i>Brachiaria eruciformis</i>	sweet signal grass
<i>Chenopodium album</i>	white goosefoot
<i>Chenopodium carinatum</i>	green goosefoot
<i>Eleusine indica</i>	goose grass
<i>Chamaesyce prostrata</i>	hairy creeping milkweed
<i>Galinsoga parviflora</i>	gallant soldier
<i>Gisekia pharnaceoides</i>	Gisekia
<i>Hibiscus trionum</i>	bladderweed
<i>Nicandra physaloides</i>	Apple of Peru
<i>Panicum maximum</i>	common buffalo grass
<i>Panicum schinzii</i>	sweet buffalo grass
<i>Physalis angulata</i>	wild gooseberry
<i>Portulaca oleracea</i>	purslane
<i>Pseudobrachiaria deflexa</i>	false signal grass
<i>Richardia brasiliensis</i>	tropical Richardia
<i>Schkuhria pinnata</i>	dwarf marigold
<i>Setaria pallide-fusca</i>	red bristle grass
<i>Setaria verticillata</i>	sticky bristle grass
<i>Sorghum bicolor subsp. arundinaceum</i>	common wildsorghum
<i>Tagetes minuta</i>	khaki weed
<i>Tragus racemosus</i>	large carrotseed grass
<i>Urochloa panicoides</i>	herringbone grass
<i>Urochloa mosambicensis</i>	bushveld herringbone grass

Erratic control may be obtained on turf soils.

In sugarcane, *Cyperus esculentus* may under favourable climatic conditions also be controlled on light to medium soils by the pre-emergence application of **PRIMAGRAM GOLD**. The use of GRAMOXONE in a mixture with **PRIMAGRAM GOLD** as an early post-emergence ground application will give good control of *C. esculentus*.

Complete control of all weeds is not always possible. Sugarcane fields should therefore be closely monitored and weeds that have escaped treatment must be removed by hand. This is particularly important with weeds, which develop into large plants such as common buffalo grass (*P. maximum*).

In maize and grain sorghum, yellow nutsedge (*C. esculentus*) can be controlled provided the following conditions are met:

- Planting is immediately preceded by thorough ploughing with a mouldboard plough.
- A relatively fine, even and firm seedbed is prepared.
- Herbicide application is followed by at least 10 - 20 mm of soft penetrating rain or irrigation to leach the herbicide into the soil prior to the emergence of *C. esculentus* (normally 7 - 10 days after ploughing). More rain or irrigation is required on heavier soils to obtain good results. Rain is more likely to occur during the latter half of the planting season (November).
- Rainfall following herbicide application, but before emergence of *C. esculentus* is necessary for optimum *C. esculentus* control. For this reason application of **PRIMAGRAM GOLD** should be made at/or immediately after planting.

7. DIRECTIONS FOR USE: Use only as indicated.

7.1 Compatibility

The compatibility of **PRIMAGRAM GOLD** 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 Syngenta and the quality of water may vary from farm to farm, a physical compatibility test should always be carried out prior to application.

PRIMAGRAM GOLD is compatible with AGRAL 90 (L2967), BREAKTHRU (L5895), CALLISTO (L6795), COMPLEMENT (L4853), COMPLEMENT SUPER (L8169), DUAL GOLD (L5749), GESAPRIM SUPER (L3914), GRAMOXONE (L1174), SOLITAIRE (L6962) and TRONIC (L3685).

7.2 Mixing Instructions

Shake well before use and replace cap after pouring.

- Half-fill the spray tank with water and pour the required quantity of **PRIMAGRAM GOLD** through a 50 mesh sieve into the tank.
- Top-up with water to the final volume required.
- When GRAMOXONE is added to **PRIMAGRAM GOLD**, the **PRIMAGRAM GOLD** should be mixed first as indicated above and well agitated after which the spray tank should be filled almost to capacity. Only then should the GRAMOXONE be added.
- Ensure thorough agitation of the mixture in the tank during mixing and application.

7.3 Application Techniques

7.3.1 Ground application

PRIMAGRAM GOLD alone as well as in mixtures with other herbicides may be applied with any medium- or high-volume sprayer equipped with an efficient agitation mechanism, which is capable of adequate coverage and even distribution.

For **pre-emergence** control best results are obtained using at least 250 ℓ/ha spray mixture. For **post-emergence** control use at least 250 - 450 ℓ/ha spray mixture depending on the size and density of the weeds. When mixtures containing GRAMOXONE are applied at least 400 ℓ/ha spray mixture should be used.

7.3.2 Aerial application

(Pre- and post-applications)

Aerial application of this product 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. It is therefore essential that the following criteria are met:

a) Application parameters:

- **Volume:** A volume of 30 ℓ/ha is recommended as a pre-emergence application and 35 ℓ/ha for a post-emergence application. As this product 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:** Droplet coverage of 20 - 30 droplets per cm² must be recovered at the target for pre-emergence application and 30 - 45 droplets/cm² for post-emergence application.
- **Droplet size:** A droplet spectrum with a VMD of 350 - 400 microns is recommended for pre-emergence applications and 300 - 350 for post-emergence applications. Ensure that the production of fine droplets (less than 150 microns - high drift and evaporation potential) is restricted to a minimum.
- **Flying height:** The height of the spray boom should be maintained at 3 - 4 meters above the target. Do not spray when aircraft is in a climb, at the top, 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 when it reduces to less than 5 km/h.
- Aerial application of this product 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 this product 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.

It is essential to obtain assurance from the aerial spray operator that the above requirements are met.

7.4 Application Rates

SUGARCANE

(Pre-emergence application)

PRIMAGRAM GOLD must be applied immediately after planting or cutting, i.e., before emergence of any weeds. To obtain good results it is necessary that application is followed by rain or irrigation to leach the herbicide into the soil before the weeds emerge.

Apply 4.2 - 5.6 l/ha **PRIMAGRAM GOLD** on all soil types. **PRIMAGRAM GOLD** at 5.6 l/ha is recommended on soils with more than 35% clay and on all soil types where *P. maximum* is a problem, or for improved control of *C. esculentus* and/or for longer residual control.

SUGARCANE

(Post-emergence application)

It is not always possible to apply the herbicide before the weeds emerge and post-emergence applications are therefore preferred. Because **PRIMAGRAM GOLD** does not have sufficient post-emergence activity, GRAMOXONE at 1.5 l/ha should be added to **PRIMAGRAM GOLD** (only interrow application).

Important

- GRAMOXONE is recommended for ground application only.
- GRAMOXONE may be applied up to the 3-leaf stage of the crop.
- Do not apply this post-emergence treatment later than the 3-leaf stage of the grass weeds.
- The rate of **PRIMAGRAM GOLD** must be selected in accordance with the recommendations for pre-emergence applications.
- When GRAMOXONE is applied together with **PRIMAGRAM GOLD**, a surfactant should not be used.

MAIZE AND GRAIN SORGHUM

(Pre-emergence application)

- **PRIMAGRAM GOLD** must be applied immediately after planting (preferably at planting) on a fine, even, firm and weed-free seedbed. To obtain good results it is necessary that application are followed by irrigation or rain before the weeds emerge. If rainfall does not occur in time and weeds begin to emerge and develop a shallow cultivation must be carried out to destroy these weeds and to mix the herbicide with the top 10 - 20 mm of soil.
- Pre-emergence application of **PRIMAGRAM GOLD** in maize to be followed by various post-emergence applications of different combination of GARDOMIL GOLD (L6246), METAGAN GOLD (L5748), GESAPRIM SUPER (L3914), BRONS (L6222), BRONS BROAD PACK (L6246) and SERVIAN BROAD PACK (tables 1 - 5).

TABLE 1: PRE-EMERGENCE APPLICATION RATES OF PRIMAGRAM GOLD ON MAIZE FOR INITIAL WEED CONTROL:

Soil type	% Clay	l/ha
Light sand to sand	0 - 10	1.25
Loamy sand to sandy loam	11 - 20	1.7
Sandy clay loam	21 - 35	2.1
Sandy clay	> 35	2.5

TABLE 2: POST-EMERGENCE APPLICATION RATES OF GARDOMIL GOLD 600 SC AND METAGAN GOLD ON MAIZE FOR INCREASED RESIDUAL WEED CONTROL:
(After an initial application of table 1)

Soil type	% Clay	GARDOMIL GOLD l/ha	METAGAN GOLD l/ha
Light sand to sand	0 - 10	1.35	130
Loamy sand to sandy loam	11 - 20	1.55	210
Sandy clay loam	21 - 35	1.65	290

TABLE 2 cont.

Sandy clay	> 35	1.3 - 2.9	360 - 190
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TABLE 3: POST-EMERGENCE APPLICATION RATES OF GESAPRIM SUPER AND METAGAN GOLD ON MAIZE FOR INCREASED RESIDUAL WEED CONTROL:

(After an initial application of table 1)

Soil type	% Clay	GESAPRIM SUPER ℓ/ha	METAGAN GOLD mℓ/ha
Light sand to sand	0 - 10	1.1	280
Loamy sand to sandy loam	11 - 20	1.3	380
Sandy clay loam	21 - 35	1.4	450
Sand clay	> 35	1.1 - 2.4	500

TABLE 4: POST-EMERGENCE APPLICATION RATES OF BRONS BROAD PACK AND METAGAN GOLD ON MAIZE FOR INCREASED RESIDUAL WEED CONTROL:

(after an initial application of table 1)

Soil type	% Clay	BRONS BROAD PACK	METAGAN GOLD mℓ/ha
Sandy clay loam	21 - 35	30 g BONS plus 1 ℓ GESAPRIM SUPER	450
Sandy clay	> 35		500

TABLE 5: POST-EMERGENCE APPLICATION RATES OF SERVIAN BROAD PACK AND METAGAN GOLD ON MAIZE FOR INCREASED RESIDUAL WEED CONTROL:

(after an initial application of table 1)

Soil type	% Clay	SERVIAN BROAD PACK	METAGAN GOLD mℓ/ha
Light sand to sand	0 - 10	50 g SERVIAN plus 1 ℓ GESAPRIM SUPER	280
Loamy sand to sandy loam	11 - 20		380
Sandy clay loam	21 - 35		450
Sand clay	> 35		500

Recommendations in table 1 will result in initial weed control only. Use the recommendations in tables 2 - 5 immediately after the first cultivation as a split application after table 1 for better residual control.

Use the lower application rates of METAGAN GOLD for soils with > 35% clay in table 2 if the higher GARDOMIL GOLD rate is selected.

BRONS BROAD PACK in table 4 is not recommended for use on soil with less than 20% clay.

CONTROL OF GRASSES AND BROADLEAF WEEDS

- Use the lower rates recommended per soil type group.
- Add 0.4 ℓ/ha GESAPRIM SUPER to the 2.1 ℓ/ha rate to ensure proper control of broadleaf weeds in table 6.
- Where longer residual action with regard to broadleaf weeds is required, especially those which germinate

late in the season such as khaki weed (*T. minuta*) and thorn apple (*D. stramonium*) GESAPRIM SUPER may be added as follows in table 6: On soils with 11 - 35% clay: 0.4 ℓ/ha, and on soils with more than 35% clay: 0.8 ℓ/ha.

- Grass killers belonging to the α-chloracetamide group of herbicides (that includes DUAL GOLD and **PRIMAGRAM GOLD**) are absorbed via the coleoptiles of grass weeds. Therefore, for good grass control the herbicide needs to be present at lethal concentrations in the top ± 50 mm of the soil profile. The adsorptive capacity of a soil for these herbicides, as well as the amount of water that moves through the soil profile with rain/irrigation, determine the resultant concentration of these herbicides in the top layers of the soil profile. As a result of the low adsorption capacity of sandy soils (0 - 15% clay, < 1% organic matter) the amount of these herbicides can be reduced to sub-lethal concentrations in the top ± 50 mm after the occurrence of permeating rain (25 mm and more within one (1) day).
- Persistent rain (50 mm and more distributed over 3 - 7 days) will have the same result. It can therefore happen that grasses germinate if such conditions prevail.

CONTROL OF YELLOW NUTSEDGE

(*C. esculentes*)

For the control of yellow nutsedge the rate of **PRIMAGRAM GOLD** must be increased in accordance with the increase in soil clay content within each soil type group, e.g., a) where the clay content of the soil is in the vicinity of 10% (7 - 13) use 2.8 ℓ/ha; b) where it is in the vicinity of 15% (13 - 17) use 3.15 ℓ/ha, and c) where it is in the vicinity of 20% (17 - 23) use 3.5 ℓ/ha.

PRE-EMERGENCE APPLICATION OF PRIMAGRAM GOLD AS A SINGLE PRE-EMERGENCE APPLICATION

(No follow-on applications)

TABLE 6: APPLICATION RATES OF PRIMAGRAM GOLD AS A SINGLE PRE-EMERGENCE APPLICATION IN MAIZE:

Soil type	% Clay	ℓ/ha
Light sand to sand	0 - 10	2.1 - 2.8
Loamy sand to sandy loam	11 - 20	2.8 - 3.5
Sandy clay loam	21 - 35	3.5 - 4.2
Sandy clay	> 35	4.2

PRE-EMERGENCE APPLICATION OF PRIMAGRAM GOLD IN TANK MIXES WITH CALLISTO IN MAIZE

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

CALLISTO plus 104 mℓ/ha	PRIMAGRAM GOLD 690 - 2 448 mℓ/ha
Botanical name	Common name
<i>Acanthospermum hispidum</i>	upright starbur
<i>Chenopodium album</i>	white goosefoot
<i>Echinochloa colona</i>	marsh grass
<i>Nicandra physaloides</i>	apple-of-Peru
<i>Physalis angulata</i>	wild gooseberry

CALLISTO plus 104 ml/ha	PRIMAGRAM GOLD 1010 -2 448 ml/ha
Botanical name	Common name
The above weeds plus	
<i>Tagetes minuta</i>	khaki weed
CALLISTO plus 156 ml/ha	PRIMAGRAM GOLD 1 010 - 2 448 ml/ha
Botanical name	Common name
The above weeds plus	
<i>Chenopodium carinatum</i> <i>Setaria pallide-fusca</i>	green goosefoot red bristle grass
CALLISTO plus 156 ml/ha	PRIMAGRAM GOLD 1 344 - 2 448 ml/ha
Botanical name	Common name
The above weeds plus	
<i>Eleusine indica</i> <i>Panicum schinzii</i>	goose grass sweet buffalo grass
CALLISTO plus 208 ml/ha	PRIMAGRAM GOLD 1 344 - 2 448 ml/ha
Botanical name	Common name
The above weeds plus	
<i>Amaranthus hybridus</i> <i>Bidens pilosa</i> <i>Brachiaria eruciformis</i> <i>Crotalaria sphaerocarpa</i> <i>Datura ferox</i> <i>Eragrostis curvula</i> <i>Hibiscus trionum</i> <i>Polygonum aviculare</i> <i>Tribulus terrestris</i>	common pigweed blackjack sweet signal grass mealie Crotalaria large thorn apple weeping love grass bladder weed prostrate knotweed dubbeltjie
CALLISTO plus 208 ml/ha	PRIMAGRAM GOLD 1 792 - 2 448 ml/ha
Botanical name	Common name
The above weeds plus	
<i>Cleome monophylla</i> <i>Commelina benghalensis</i> <i>Digitaria sanguinalis</i> <i>Hibiscus cannabinus</i> <i>Triumfetta pilosa</i>	spindlepod Benghal wandering Jew crab fingergrass kenaf -
CALLISTO plus 208 ml/ha	PRIMAGRAM GOLD 2 448 ml/ha
Botanical name	Common name
The above weeds plus	
<i>Bidens pilosa</i> <i>Crotalaria sphaerocarpa</i> <i>Portulaca oleracea</i> <i>Tribulus terrestris</i>	blackjack mealie Crotalaria purslane dubbeltjie
CALLISTO plus 260 ml/ha	PRIMAGRAM GOLD 2 448 ml/ha
Botanical name	Common name
The above weeds plus	
<i>Bidens pilosa</i> <i>Crotalaria sphaerocarpa</i> <i>Cyperus esculentus</i> <i>Portulaca oleracea</i> <i>Tribulus terrestris</i> <i>Urochloa panicoides</i> <i>Xanthium strumarium</i>	blackjack mealie Crotalaria yellow nutsedge purslane dubbeltjie herringbone cocklebur

Only suppression of	
<i>Bidens bipinnata</i> <i>Citrullus lanatus</i> <i>Cosmos bipinnatus</i> <i>Ipomoea purpurea</i>	Spanish blackjack bitter apple cosmos common morning glory

Consult the CALLISTO label for WARNINGS, PRECAUTIONS and DIRECTIONS FOR USE.

POST-EMERGENCE APPLICATION OF PRIMAGRAM GOLD PLUS CALLISTO PLUS AN ADJUVANT IN MAIZE

PRIMAGRAM GOLD plus CALLISTO must be applied post-emergence before the target grasses are between the 2 - 3-leaf stage and broadleaf weeds are between the 2 - 6-leaf stages.

Recommended adjuvants:

In all post-emergence applications of **PRIMAGRAM GOLD** plus CALLISTO, an adjuvant must be used. The following adjuvants are recommended:

- AGRAL at 200 ml/100 l spray volume
- BREAKTRHU at 50 ml/100 l spray volume
- COMPLEMENT SUPER at 100 ml/ha spray volume
- PENETREX at 500 ml/100 l spray volume
- SOLITAIRE at 100 ml/100 l spray volume
- TRONIC at 500 ml/ha spray volume

To enhance the activity on larger weeds 250 ml 2,4-D can be added to the tank mixtures mentioned below. The addition of 2,4-D is recommended for the control of morning glory and other problem weeds.

This post-emergence application should be preceded by a pre-emergence application of CALLISTO, DUAL GOLD, GARDOMIL GOLD or GESAPRIM SUPER as indicated on the registered labels.

CALLISTO 104 ml/ ha	plus PRIMAGRAM GOLD 447 - 1 682 ml/ha	plus recommended ADJUVANT*
Weeks control	Botanical name	Common name
4	<i>Amaranthus hybridus</i>	common pigweed
4	<i>Crotalaria sphaerocarpa</i>	mealie Crotalaria
4	<i>Galinsoga parviflora</i>	gallant soldier
4	<i>Hibiscus trionum</i>	bladder weed
4	<i>Tagetes minuta</i>	khaki weed
4	<i>Xanthium strumarium</i>	cocklebur
CALLISTO 104 ml/ ha	plus PRIMAGRAM GOLD 672 - 1 682 ml/ha	plus recommended ADJUVANT*
Weeks control	Botanical name	Common name
The above weeds plus		
4	<i>Cleome monophylla</i>	spindlepod
4	<i>Datura ferox</i>	large thorn apple
4	<i>Datura stramonium</i>	thorn apple

CALLISTO 156 ml/ha	plus PRIMAGRAM GOLD 672 - 1 682 ml/ha	plus recommended ADJUVANT*
Weeks control	Botanical name	Common name
The above weeds plus		
8	<i>Bidens bipinnata</i>	Spanish blackjacket blackjacket large thorn apple gallant soldier khaki weed
8	<i>Bidens pilosa</i>	
8	<i>Datura ferox</i>	
8	<i>Galinsoga parviflora</i>	
8	<i>Tagetes minuta</i>	
CALLISTO 156 ml/ha	plus PRIMAGRAM GOLD 1 010 - 1 682 ml/ha	plus recommended ADJUVANT*
Weeks control	Botanical name	Common name
The above weeds plus		
4	<i>Citrullus lanatus</i>	bitter apple
CALLISTO 208 ml/ha	plus PRIMAGRAM GOLD 897 - 1 682 ml/ha	plus recommended ADJUVANT*
Weeks control	Botanical name	Common name
The above weeds plus		
4	<i>Commelina benghalensis</i>	Benghal wandering Jew common morning glory dubbeltjie
4	<i>Ipomoea purpurea</i>	
4	<i>Tribulus terrestris</i>	
8	<i>Cleome monophylla</i>	spindlepod bladder weed
8	<i>Hibiscus trionum</i>	
CALLISTO 208 ml/ha	plus PRIMAGRAM GOLD 1 344 - 1 682 ml/ha	plus recommended ADJUVANT*
Weeks control	Botanical name	Common name
The above weeds plus		
4	<i>Digitaria sanguinalis</i>	crab fingergrass goose grass
4	<i>Eleusine indica</i>	
8	<i>Amaranthus hybridus</i>	common pigweed Benghal wandering Jew common morning gory dubbeltjie
8	<i>Commelina benghalensis</i>	
8	<i>Ipomoea purpurea</i>	
8	<i>Tribulus terrestris</i>	
CALLISTO 260 ml/ha	plus PRIMAGRAM GOLD 1 122 - 1 682 ml/ha	plus recommended ADJUVANT*
Weeks control	Botanical name	Common name
The above weeds plus		
4	<i>Hibiscus cannabinus</i>	kenaf
8	<i>Citrullus lanatus</i>	bitter apple crab fingergrass goose grass
8	<i>Digitaria sanguinalis</i>	
8	<i>Eleusine indica</i>	
CALLISTO 260 ml/ha	plus PRIMAGRAM GOLD 1 682 ml/ha	plus recommended ADJUVANT*

Weeks control	Botanical name	Common name
The above weeds plus		
8	<i>Crotalaria sphaerocarpa</i>	mealie Crotalaria
Up to 80% suppression of the following weeds		
8	<i>Chloris virgata</i>	feathertop Chloris yellow nutedge kenaf herringbone grass cocklebur
8	<i>Cyperus esculentus</i>	
8	<i>Hibiscus cannabinus</i>	
8	<i>Urochloa panicoides</i>	
8	<i>Xanthium strumarium</i>	

Consult the CALLISTO, GESAPRIM SUPER, BREAKTHRU, COMPLEMENT SUPER, PENETREX, SOLITAIRE, TRONIC and AGRAL 90 labels for WARNINGS, PRECAUTIONS and DIRECTIONS FOR USE.

GRAIN SORGHUM

- **PRIMAGRAM GOLD** may only be applied if the sorghum seed has previously been correctly treated, as prescribed, with CONCEP® 960 EC (L5051).
- Apply 4.2 l/ha **PRIMAGRAM GOLD** on soils with more than 30% clay.

8. CROP ROTATION:

Use the recommendations in table 1 for crop rotation. Ensure that the total triazines do not exceed 1 kg active ingredient if the recommendations in tables 2 - 5 are selected as post-emergence applications.

The recommendations in table 6 can be used alternatively. The above mentioned quantities of **PRIMAGRAM GOLD** in table 6 may damage triazine sensitive follow-up crops such as groundnuts, dry beans, soybeans, sunflowers, wheat, vegetables, cotton and tobacco. Where these crops are to be planted as follow-up crops the application rate of **PRIMAGRAM GOLD** should not exceed 2.8 l/ha.

On soils with 0 - 10% clay in the North West Province and North Western Free State and high lime content soils, the lower rates of **PRIMAGRAM GOLD** (table 1 followed with either table 2, 3, 4 or 5) or **PRIMAGRAM GOLD** (table 6) may still damage follow-up crops. These low rates may result in poorer weed control and shorter residual control. Post-emergence control of broadleaf weeds is recommended when crop rotation with sensitive crops is practised. If **PRIMAGRAM GOLD** is applied at rotation rates according to table 6, DUAL GOLD can be additionally added at the following rates to improve grass control: a) soils containing 11 - 20% clay: 0.18 l/ha, b) soils containing 21 - 35% clay: 0.18 - 0.35 l/ha and c) soils containing more than 35% clay: 0.35 l/ha. Use higher DUAL GOLD rates as the clay content increases within each increment.

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