

BEFORE USING THIS PRODUCT, READ THE LABEL CAREFULLY. KEEP OUT OF REACH OF CHILDREN AND ANIMALS.



Herbicide

# PALLADIUM PLUS 915 EC

Reg. No. L 9359 Act No. 36 of 1947  
W 1301000

4:13/03/2023 – June2023

A pre-emergence emulsifiable concentrate herbicide with benoxacor for the control of most annual grasses and certain broad-leaved weeds in maize, groundnuts, soybeans, dry beans, sunflowers, potatoes and lupins.

## ACTIVE INGREDIENTS

s-metolachlor (chloroacetamide) 915 g/l  
benoxacor (safener) 30.5 g/l

GROUP 15 HERBICIDE



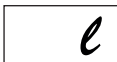
**DANGER**

### Hazard Statements:

Causes mild skin irritation.  
May cause an allergic skin reaction.  
Causes serious eye damage.  
Harmful if inhaled.  
Very toxic to aquatic life.  
Very toxic to aquatic life with long-lasting effects.

### Precautionary Statements:

Avoid breathing dust, fumes, mist, gas, vapours or spray.  
Wash hands thoroughly after handling. Do not touch eyes.  
Avoid release into the environment.  
Wear impervious rubber gloves and boots, protective clothing, and chemical safety goggles.



**villa**

UN Number: 3082

Registration holder: VILLA CROP PROTECTION (PTY) LTD.  
Co. Reg. No. 1992/002474/07  
PO Box 10413, Aston Manor, 1630  
Tel. (011) 396 2233  
Website: [www.villacrop.co.za](http://www.villacrop.co.za)

24 HR EMERGENCY NUMBERS:  
Griffon Poison Centre: +27 82 446 8946  
24 HR Transport / Spill Emergency no: (Hazcall24) +27 86 044 4411  
(Client: Villa Crop Protection)

REFER TO DETAILS AS PRINTED ON CONTAINER / BAG

DIRECTIONS FOR USE ENCLOSED

Batch Number:

Date of Manufacture:

**PALLADIUM PLUS 915 EC**

Reg. No. L 9359 Act No. 36 of 1947

W 1301000

HRAC HERBICIDE GROUP CODE: 15

**ACTIVE INGREDIENT:**

s-metolachlor (chloroacetamide)..... 915 g/l

benoxacor (safener).....30.5 g/l

Registration holder:

**VILLA CROP PROTECTION (PTY) LTD.**

Co. Reg. No. 1992/002474/07

PO Box 10413, ASTON MANOR, 1630

Tel. (011) 396 2233

**WARNINGS****Hazard Statements:**

Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye damage.
Harmful if inhaled.
Very toxic to aquatic life.
Very toxic to aquatic life with long-lasting effects

- Handle with care.
- Harmful if swallowed.
- Flammable.
- Keep under lock and key in a cool, dry, well-ventilated place.
- Keep away from food, feeds, seed, fertilizers and other agricultural chemicals.
- Keep out of reach of children, uninformed persons and animals.
- **In case of poisoning call a doctor and make this label available to him/her.**
- Re-entry: Do not enter treated field within 1 day after application unless wearing protective clothing.

**Aerial application:**

Notify all inhabitants in the immediate vicinity of the lands 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 weeds against the remedy concerned, as well as 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 humans, 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, which could not have been foreseen in terms of the registration. Consult the supplier in event of any uncertainty.**

**PRECAUTIONS****Precautionary statements:**

Avoid breathing dust, fumes, mists, gas, vapours, or spray. (Respiratory sensitization).
Wash hands thoroughly after handling. Do not touch eyes
Use only outdoors or in a well-ventilated area.
Contaminated work clothing should not be allowed out of the workplace.
Avoid release to the environment.
Wear impervious rubber gloves and boots, protective clothing and chemical safety goggles.
IF ON SKIN: Wash with plenty of water and non-abrasive soap
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Get medical help.

If skin irritation or rash occurs: Get medical help.
Collect spillage.
Dispose of content/container to suitable landfill in accordance with local regulations

- Wash contaminated clothing after use.
- Do not eat, drink or smoke whilst mixing or applying the product or before washing hands and face and change of clothing.
- Prevent drift onto other crops, grazing, rivers, dams and areas not under treatment or to nearby water sources.
- Thoroughly clean spraying equipment directly after use and dispose of wash water where it will not contaminate food, grazing, boreholes, rivers or dams.
- **TRIPLE RINSE THE EMPTY CONTAINER AS FOLLOWS:** 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 (3) 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](http://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.
- Prevent contamination of food, feeds, drinking water and eating utensils.

### **SYMPTOMS OF HUMAN POISONING**

Irritation effects on skin and mucous membranes are the most common reactions. May cause irritation to the eyes. Allergic skin reactions may occur. May cause skin sensitization. Ingestion of large amounts can cause nausea, vomiting, abdominal distress and diarrhoea.

<b>Relevant hazardous components</b>	
<b>S-Metolachlor</b>	915 g/l
<b>Benoxacor</b>	< 5 %
Dodecyl Benzene Sulphonate	<10%

### **FIRST AID TREATMENT**

- Remove the victim from the area of exposure. Wash off remaining material with plenty of water. In the event of any complaints or symptoms, avoid further exposure and consult a doctor.
- **Skin contact:** Remove contaminated clothing, shoes and leather goods immediately (e.g. watch bands and belts). Wash skin gently and thoroughly with non-abrasive soap and large amounts of water. Obtain medical attention if irritation persists.
- **Eye contact:** Flush eyes with clean water for at least 15 – 20 minutes. Lift eyelids to facilitate irrigation. If present, remove contact lenses after 5 minutes and continue rinsing. **Seek medical attention immediately.**
- **Inhalation:** If vapours or mists have been inhaled, move victim to fresh air and remove source of contamination if safe to do so. The patient should be kept under observation. Obtain medical attention if symptoms persist.
- **Ingestion: Do not induce vomiting.** Do not give anything by mouth to an unconscious person. Obtain medical attention if the patient feels unwell. Administer oxygen if breathing is difficult. If breathing has stopped, give artificial respiration.

### **NOTE TO PHYSICIAN**

No specific antidote. Treat symptomatically and supportively. Keep patient under observation. Perform gastric lavage and catharsis if the patient is not unconscious. If less than 10 mg per kg body weight, was ingested, administer 30 to 60 g activated charcoal in 150 to 300 ml water.

### **RESISTANCE WARNING**

**PALLADIUM PLUS 915 EC** is a group code 15 herbicide. Any weed population may contain individuals naturally resistant to **PALLADIUM PLUS 915 EC** and other group code 15 herbicides. The resistant individuals can eventually dominate the weed population if these herbicides are used repeatedly. These resistant weeds may not be controlled by **PALLADIUM PLUS 915 EC** or any other group code 15 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 other control methods (chemical, cultural, biological) into weed control programmes.
- For specific information on resistance management contact the registration holder of this product.

#### Mode of action:

Cell division inhibitor.

#### USE RESTRICTIONS

- Do not apply **PALLADIUM PLUS 915 EC** to inbred parent plants of maize hybrids and Grain sorghum hybrids or experimental or newly released maize and Grain sorghum cultivars without first referring to the distributor or seed supplier.
- Do not apply **PALLADIUM PLUS 915 EC** to poorly drained soils or soils with a compaction layer, as waterlogging and herbicide injury may occur.
- Heavy rain (25 mm per day or greater than 50 mm over a 3 to 7-day period) on very sandy soils (< 15 % clay), low in organic matter (< 1 %), as well as flood irrigation can reduce weed control performance.
- **PALLADIUM PLUS 915 EC** may damage the following crops under conditions as mentioned: Dry beans on fields where monoculture is practised, and soil-borne diseases are prevalent, also dry beans and sunflowers on shallow, sandy, waterlogged soils with an impermeable clay layer at less than 100 cm depth. **PALLADIUM PLUS 915 EC** damage to dry beans is sometimes associated with hot, dry weather and a plough-sole in the soil.
- **PALLADIUM PLUS 915 EC** can only be applied with **Glyphosate** in a tank mixture, on maize.
- When **PALLADIUM PLUS 915 EC** is applied to dry beans, ensure that the seeds are treated with effective fungicides to control seedling diseases caused by *Pythium* spp., *Rhizoctonia* spp. etc.
- Wet and cold conditions soon after an application could cause damage to maize and sweet corn.
- Use restrictions for any herbicides used in combination with **PALLADIUM PLUS 915 EC** must be adhered to.

#### DIRECTIONS FOR USE: Use only as directed.

##### Compatibility:

- **PALLADIUM PLUS 915 EC** can be used in tank mixtures with **SKOFFEL® 145 SL** (L 4347), **2,4-D AMINE 480 SL** (L 4505 / W 130459 / N-AR 1096), **TERBUSIEN SUPER 600 SC** (L 5435 / N-AR 1110), **INTERLOCK®** (L 10254 / W 130875 / N-AR 1856), **Terbuweed Duo 900 WDG**, **Grantron 750 WDG**, **Direction 700 WDG**, **Cantron® Smart 500 SC**, **Crux 425 SC**, **Velocity®-Drymax**, **Villa 51**, **Velocity® Super**, **CLASS ACT® NG** (L 10477), **Terbuclear 600 SC**, **THEORY 960 EC** (L 10494 / W 1301244), **AGRIZINE 500 SC** (L 5387 / W 130121) and **Cantron® 480 SC**.
- If tank mixtures are used with other products, small quantities of the products in the correct ratio should be mixed with the appropriate quantity of water to determine compatibility.
- Water quality and formulation of other products may influence compatibility.
- The compatibility of **PALLADIUM PLUS 915 EC** may be influenced by several factors. As these factors may vary, a physical compatibility test must always be performed before such a tank mixture is sprayed.
- When **PALLADIUM PLUS 915 EC** is used in conjunction with any other agricultural remedy, all **WARNINGS, PRECAUTIONS** and **DIRECTIONS FOR USE** mentioned on that label, must be adhered to.

##### Mixing Instructions:

- Shake container well before use. Close container after use. When using an **Ammonium sulphate** adjuvant such as **Velocity®-Drymax**, **Velocity® Super** or **Class Act® NG** it should be added to the spray mixture first followed by **PALLADIUM PLUS 915 EC**.
- Half-fill the spray tank with clean water; add the required amount of **PALLADIUM PLUS 915 EC** while maintaining agitation. Complete the filling operation.
- When mixing **PALLADIUM PLUS 915 EC** with other herbicides, use the following procedure:
  - a. Mix the required quantity of WDG or WP products in a small quantity of water to make a smooth cream and add this to the spray mixture or add the water-soluble bags to the spray mixture.
  - b. In the following order add any additional products: **SC** or **SE** formulations, followed by **EC**, **EW** or **ME** formulations. Lastly add product of **SL**, **SG** or **SP** formulation types. Ensure to pre-mix products individually before adding them to the spray mixture.
- After all the products have been thoroughly incorporated, add the wetter/spreader and sticker adjuvants such as **Villa 51**, **Interlock®**, **Summit Super** or **Destinaire®**.
- Maintain continuous suspension in the spray tank by means of proper agitation.
- Prepared spray mixtures must not be left in the spray tank for any length of time, e.g. overnight.

### **Post Spray Equipment Cleaning**

Rinse the spray tank and all hoses with a 0.1% solution of either calcium chloride or ammonium hydroxide or the recommended rate of **Protank® liquid cleaner** according to the product label. Allow this solution to stand in the spray equipment for 15 minutes; empty the spray equipment; repeat the rinsing with a 0.1 % solution of calcium chloride or ammonium hydroxide for 15 minutes; rinse all equipment with water. Nozzles and fitters must be cleaned individually. Rinse water and solution should be drained in a cesspool or drain where it will not contaminate any water source.

### **Application Recommendations:**

- Use accurately calibrated equipment with properly arranged, suitable nozzles and an efficient agitation mechanism.
- Prepare a fine, even and firm seedbed free of weeds, trash and clods.
- Apply **PALLADIUM PLUS 915 EC** or its tank mixtures preferably at planting or immediately after planting, but not later than 3 days after planting. Use 200 litres spray mixture per hectare for overall ground application, and 30 to 40 litres per hectare for aerial application.
- **PALLADIUM PLUS 915 EC** can also be shallowly incorporated early in the season to improve reliability of weed control.
- **10 to 20 mm rain within 7 to 10 days after application is necessary for good results.**
- Under dry conditions, weed seedlings may emerge. These are usually stunted and can be controlled with a shallow cultivation, which also mixes the herbicide with the top 10 to 20 mm of soil.
- If soil crusting becomes a problem, rotary harrow in the same direction that the rows are planted, to assist crop germination.
- Harrowing after application may reduce weed control if untreated soil is thrown into deep planter furrows.
- **PALLADIUM PLUS 915 EC** has no post-emergence activity and can be applied post-emergence to the crop after a cultivation, when no weeds are present.
- Ensure that sufficient fertilizer is placed near the seed at planting, to promote vigorous seedling growth.

### **Aerial Application:**

Aerial application of **PALLADIUM PLUS 915 EC** may only be done by a registered aerial application operator using a correctly calibrated, registered aircraft according to the instructions of SANS Code 10118 (Aerial Application of Agricultural Pesticides). 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 be met:

- Flying height: The height of the spray boom should be maintained at 3 to 4 metres above the target. Do not spray when aircraft is in a climb, at the top of, or during a dive, or when banking.
- 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 spraying system must 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.
- 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 per hour.
- 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.
- Spraying under temperature inversion conditions (spraying in or above the inversion layer) and/or high humidity conditions (relative humidity 80 % and above) may lead to the following:
  - a) reduced efficacy due to suspension and evaporation of small droplets in the air (inadequate coverage),
  - b) damage to other sensitive crops and/or non-target areas through the movement of the suspended spray cloud away from the target field.
- Ensure that the aerial spray operator knows exactly which fields to spray.

Obtain assurance from the aerial spray operator that the above requirements will be met and that relevant data will be compiled in a spray log and kept for future reference.

**Pre-emergence aerial application:**

- **Volume:** A spray mixture volume of 30 to 40 litres per hectare is recommended. 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 this product is applied aerially at a lower volume rate than recommended.
- **Droplet coverage:** Droplet coverage of 20 to 30 droplets per cm<sup>2</sup> must be recovered at the target area.
- **Droplet size:** A droplet spectrum with a VMD of 350 to 400 micron is recommended. Limit the production of fine droplets less than 150 micron (high drift & evaporation potential) to a minimum.

**APPLICATION RATES****1. MAIZE****1.1 Pre-emergence of the crop and the weeds**

- Application to be performed at planting or not later than 3 days after planting (use the correct rates for different row and bandwidths).
- It can also be applied post-emergence of the crop but after cultivation i.e. pre-emergence of the weeds. **PALLADIUM PLUS 915 EC** applied as solo product, does not control broadleaf weeds sufficiently and tank mixtures with **Agrizine 500 SC** or **Terbusien Super 600 SC** are recommended (in maize only) as per Table 1.1 below.
- Where deep germinating broadleaf weeds such as *Datura* spp., *Xanthium* spp., *Tribulus*, *Commelina* and *Cucumis* are present; a post-emergence application is more effective (refer to Tables 1.2 & 1.3).

**Table 1.1: Broad-spectrum pre-emergence weed control with PALLADIUM PLUS 915 EC and Agrizine 500 SC or Terbusien Super 600 SC tank mixtures.**

**NOTE**

- If triazine sensitive follow-up crops are to be planted, use a maximum of 2.0 litres **Agrizine 500 SC** or **Terbusien Super 600 SC** per hectare on all soil types besides soils with 0 to 10 % clay and less than 1.0 % organic material such as in the North West Province and North-western Free State. In these areas, 1.5 litres per hectare of **Agrizine 500 SC** and **Terbusien Super 600 SC** should not be exceeded.

Soil Type	% Clay	PALLADIUM PLUS 915 EC ℓ / ha	Agrizine 500 SC ℓ / ha	Terbusien Super 600 SC ℓ / ha
Sand	0 to 10	0.6 to 0.8	1.6 to 2.0	1.3 to 1.7
Loamy sand / sandy loam	11 to 20	0.7 to 0.9	2.0 to 2.5	1.7 to 2.1
Sandy clay loam	21 to 30	0.9 to 1.0	2.5 to 3.0	2.1 to 2.5
Sandy clay loam / sandy clay	31 to 40	1.0 to 1.2	3.0 to 4.0	2.5 to 3.3
Sandy clay / turf	41 to 50	1.2 to 1.4	4.0 to 5.0	3.3 to 4.0

**Re-cropping intervals:**

The listed re-cropping intervals are valid only if the correct dosage rate of **Agrizine 500 SC** and **Terbusien Super 600 SC** according to soil type was applied and normal or above average rainfall occurred, after application.

<b>Grain sorghum</b>	6 months
<b>Sunflowers, Groundnuts, Soybeans, Potatoes, Dry beans, Forage sorghum and Small grains</b>	18 months
<b>Other crops not listed</b>	24 months
<b>Maize and Sugarcane</b>	None

### 1.2 Early post-emergence application of Palladium 960 EC plus Terbusien Super 600 SC, after a pre-emergence application of PALLADIUM PLUS 915 EC

**Table 1.2: PALLADIUM PLUS 915 EC applied pre-emergence followed by Palladium 960 EC plus Terbusien Super 600 SC early post-emergence.**

Soil Type	% Clay	PALLADIUM PLUS 915 EC ℓ / ha	Palladium 960 EC ℓ / ha	PLUS	Terbusien Super 600 SC ℓ / ha
Sand	0 to 10	0.4 to 0.5	0.3	+	1.9
Loamy sand / sandy loam	11 to 20	0.5 to 0.7	0.3	+	2.3
Sandy clay loam	21 to 30	0.7 to 0.8	0.35	+	2.7
Sandy clay loam / sandy clay	31 to 40	0.8 to 0.9	0.35 to 0.5	+	2.7 to 4.0
Sandy clay/ turf	41 to 50	0.9 to 1.0	0.35 to 0.5	+	2.7 to 4.0
<b>Re-cropping intervals:</b> See above under 1.1.					

### 1.3 Early post-emergence application of Terbusien Super 600 SC plus 2,4-D Amine 480 SL, after a pre-emergence application of PALLADIUM PLUS 915 EC

**Table 1.3: PALLADIUM PLUS 915 EC applied pre-emergence followed by Terbusien Super 600 SC plus 2,4-D Amine 480 SL early post-emergence.**

Soil Type	% Clay	PALLADIUM PLUS 915 EC ℓ / ha	Terbusien Super 600 SC PLUS 2,4-D Amine 480 SL ℓ / ha
Sand	0 to 10	0.5 to 0.7	<b>Recommendation for all soil types:</b> 1.25 ℓ Terbusien Super 600 SC <b>PLUS</b> 0.75 ℓ 2,4-D Amine 480 SL <b>OR</b> 1.7 ℓ Terbusien Super 600 SC <b>PLUS</b> 0.5 ℓ 2,4-D Amine 480 SL
Loamy sand / sandy loam	11 to 20	0.7 to 0.9	
Sandy clay loam	21 to 30	0.9 to 1.0	
Sandy clay loam / sandy clay	31 to 40	1.0 to 1.2	
Sandy clay / turf	41 to 50	1.2 to 1.4	
<b>Re-cropping intervals:</b> See above under 1.1.			

#### **NOTES ON TABLES 1.1 - 1.3:**

- Use the higher application rates of **PALLADIUM PLUS 915 EC** for improved control of *Cyperus esculentus* (Yellow nutsedge), heavy infestations of *Digitaria sanguinalis* (Crabfinger-grass), where **PALLADIUM PLUS 915 EC** is pre-plant incorporated, or where the organic matter in the soil exceeds 1.0 %.
- Apply **Palladium 960 EC + Terbusien Super 600 SC** (Table 1.2) early post-emergence after the first cultivation.
- Early post-emergence treatments give more effective broadleaf weed control on soils with > 30 % clay content (Tables 1.2 & 1.3).
- Under adverse weather conditions or with poor initial control on soils with 31 to 40 % and 41 to 50 % clay the application rates of **Terbusien Super 600 SC** in Table 1.2 can be increased to 4.0 and 5.0 litres per hectare respectively.
- If triazine sensitive crops such as groundnuts, dry beans, soybeans, sunflowers, wheat, vegetables, cotton and tobacco are planted as follow-up crops, the application rates of **Agrizine 500 SC** and **Terbusien Super 600 SC** (Tables 1.1 & 1.2) should not exceed 2.0 litres per hectare. These low rates may still damage follow-up crops on the very sandy soils of the North-west Free State and North West

Province or on calcareous soils and weed control may not always be satisfactory. The recommendations in Table 1.3 are best suited to avoid carry-over problems and still obtain good weed control.

- If heavy rain occurs on light, sandy soils (< 15 % clay and < 0.5 % organic matter) poor weed control may result and a split application as in Table 1.2 is preferred.
- If longer residual broadleaf weed control is required, the higher rates of **Agrizine 500 SC** and **Terbusien Super 600 SC** (Table 1.1) should be applied.
- Only use the recommendations in Table 1.3 for weed control in sweetcorn.
- Use a suitable penetrant with all post-emergence applications with the exception of mixtures containing **2,4-D Amine 480 SL**.
- Consult **Agrizine 500 SC**, **Terbusien Super 600 SC** and **2,4-D Amine 480 SL** labels for more particulars.

#### 1.4 **PALLADIUM PLUS 915 EC plus Terbusien Super 600 SC preceded by EPTC Plus 720 EC**

Apply **EPTC Plus 720 EC** at normal recommended rates on soils up to 30 % clay and follow up early post-emergence with a tank mixture containing **PALLADIUM PLUS 915 EC** and **Terbusien Super 600 SC** (Table 1.4).

**Table 1.4: PALLADIUM PLUS 915 EC plus Terbusien Super 600 SC applied early post-emergence as a tank mixture after the initial application of EPTC Plus 720 EC.**

<b>Soil Type</b>	<b>% Clay</b>	<b>PALLADIUM PLUS 915 EC ℓ / ha</b>	<b>PLUS</b>	<b>Terbusien Super 600 SC ℓ / ha</b>
Sand	0 to 10	0.7	+	1.9
Loamy sand / sandy loam	11 to 20	0.8	+	2.3
Sandy clay loam	21 to 30	1.0	+	2.7
<b>Re-cropping intervals:</b> See above under 1.1.				

#### 1.5 **Low application rates of PALLADIUM PLUS 915 EC:**

Low application rates of **PALLADIUM PLUS 915 EC** can successfully be used in the North-western Free State and North West Province in tank mixture with **Terbusien Super 600 SC**.

**Table 1.5: PALLADIUM PLUS 915 EC applied in tank mixture with Terbusien Super 600 SC in the North-western Free State and North West Province.**

#### **NOTE**

- To avoid carry-over to sensitive follow-up crops, if needed, the **Terbusien Super 600 SC** rate on all soil types should not exceed 2.0 litres per hectare.
- These low application rates will not be very dependable against high grass populations and have a short residual effect.

<b>Soil Type</b>	<b>% Clay</b>	<b>PALLADIUM PLUS 915 EC ℓ / ha</b>	<b>PLUS</b>	<b>Terbusien Super 600 SC ℓ / ha</b>
Sand	0 to 10	0.4	+	1.8
Loamy sand / sandy loam	11 to 20	0.45	+	2.0
Sandy clay loam	21 to 30	0.5	+	2.3
<b>Re-cropping intervals:</b> See above under 1.1.				



## 1.6 Improved initial broadleaf control of PALLADIUM PLUS 915 EC

Apply **PALLADIUM PLUS 915 EC** at rates as recommended in Table 1.1 but split the **Terbusien Super 600 SC** recommendation as follows, apply 33 % with the initial **PALLADIUM PLUS 915 EC** pre-emergence application and the balance as an early post-emergence spray.

## 1.7 Pre-emergence application of PALLADIUM PLUS 915 EC plus Cantron® 480 SC plus Terbusien Super 600 SC in maize:

### NOTES

- A post-emergence application with registered mixtures of **Cantron® 480 SC** plus Acetanalides such as **Palladium 960 EC** plus **Terbusien Super 600 SC** plus **Villa 51**, can be applied between 35 & 42 days following the pre-emergence application. See relevant labels for further instructions.
- Control of Yellow Nutsedge (*Cyperus esculentus*): The dosage rates of **PALLADIUM PLUS 915 EC** plus **Cantron® 480 SC** as indicated below may provide insufficient control of Yellow Nutsedge.
- Refer to the **Cantron® 480 SC** and **Terbusien Super 600 SC** labels for a list of additional weeds controlled by these products, as well as for **USE RESTRICTIONS** and **DIRECTIONS FOR USE**.

<b>PALLADIUM PLUS 915 EC</b> 570 to 650 ml / ha	<b>PLUS</b>	
	<b>Cantron® 480 SC</b> 210 ml / ha	<b>Terbusien Super 600 SC</b> 800 ml / ha
<b>WEEDS CONTROLLED</b>		
Botanical name	Common name	
<i>Acanthospermum hispidum</i>	Upright starbur	
<i>Amaranthus hybridus</i>	Common pigweed	
<i>Brachiaria eruciformis</i>	Sweet signal grass	
<i>Chenopodium album</i>	White goosefoot	
<i>Chenopodium carinatum</i>	Green goosefoot	
<i>Cleome monophylla</i>	Spindlepod	
<i>Commelina benghalensis</i> *	Benghal wandering Jew	
<i>Digitaria sanguinalis</i>	Crab fingergrass	
<i>Datura ferox</i>	Large thorn apple	
<i>Echinochloa colona</i>	Marsh grass	
<i>Eleusine indica</i>	Goose grass	
<i>Eragrostis curvula</i>	Weeping love grass	
<i>Hibiscus cannabinus</i>	Kenaf	
<i>Hibiscus trionum</i>	Bladder weed	
<i>Nicandra physaloides</i>	Apple-of-Peru	
<i>Panicum schinzii (= laevifolium)</i>	Sweet buffalo grass	
<i>Physalis angulata</i>	Wild gooseberry	
<i>Polygonum aviculare</i>	Prostrate knotweed	
<i>Setaria pumila (= pallide-fusca)</i>	Red bristle grass	
<i>Tagetes minuta</i>	Tall Khaki weed	
<i>Triumfetta pilosa</i>	-	
<i>Urochloa panicoides</i>	Herringbone grass	
<i>Xanthium strumarium</i>	Cocklebur	
<b>Re-cropping intervals:</b> See above under 1.1.		

\* Only at highest recommended dosage rate.

### 1.8 Pre-plant burndown / pre-emergence application for the control of weeds in maize in a NO TILL situation.

#### NOTES

- **Do not** plant within seven (7) days after the above application.
- Once *Erigeron* spp. (= *Conyza* spp.) grew beyond the 8-leaf stage, the control thereof will be unsuccessful. Refer to “**RESISTANCE WARNING**” above.

Refer to the **Cantron® Smart 500 SC** and **2,4-D Amine 480 SL** label for a list of additional weeds controlled by these products, as well as for **WARNINGS, PRECAUTIONS, USE RESTRICTIONS and DIRECTIONS FOR USE.**

<b>PALLADIUM PLUS 915 EC</b> 780 ml / ha	<i>PLUS</i>	<i>PLUS</i>	<i>PLUS</i>
	<b>Cantron® Smart 500 SC</b> 2.5 l / ha	<b>2,4-D Amine 480 SL</b> 1 l / ha	<b>Velocity® Super</b> 2 % <b>OR</b> <b>Velocity® DryMax</b> 1 % <b>OR</b> <b>Class Act® NG</b> 1 to 2 %
<b>WEEDS CONTROLLED</b>			
<b>Botanical name</b>		<b>Common name</b>	
<i>Erigeron sumatrensis</i> *		Tall fleabane	
<i>Erigeron bonariensis</i> *		Hairy fleabane	
<i>Eleusine africana</i>		Goose grass	
<i>Digitaria sanguinalis</i>		Large crabgrass	
<i>Senecio consanguineous</i> *		Starvation bush	
<b><u>Re-cropping intervals:</u></b>			
<b>Barley &amp; wheat</b>		1 month	
<b>Grain sorghum</b>		2 months	
<b>Potatoes</b>		6 months	
<b>Cotton, dry beans, groundnuts, soybeans &amp; sunflowers</b>		9 months	
<b>All other crops</b>		24 months	

\* The dosages recommended, aim to cover a broad spectrum of weeds if they are sprayed before upright growing weeds reach 10 cm in height or flat growing weeds reach the 4 to 6 stage.

### 1.9 Pre-emergence application of PALLADIUM PLUS 915 EC plus Terbuweed Plus 900 WDG plus Cantron® 480 SC in maize

#### NOTES

- Follow this pre-emergence application after approximately 35 to 42 days with a post-emergence application of registered mixtures.
- Certain weeds may not be controlled effectively at lower dosage rates.
- Refer to the **Cantron® 480 SC** and **Terbuweed Plus 900 WDG** labels for a list of additional weeds controlled by these products, as well as for **WARNINGS, PRECAUTIONS, USE RESTRICTIONS** and **DIRECTIONS FOR USE**.

<b>PRE-EMERGENCE</b>	<b>PALLADIUM PLUS 915 EC</b> 570 to 650 ml / ha	<b>PLUS</b> <b>Terbuweed Plus 900 WDG</b> 540 g / ha	<b>PLUS</b> <b>Cantron® 480 SC</b> 210 ml / ha	<b>PLUS</b> <b>None</b>
<b>POST-EMERGENCE</b>	<b>Palladium 960 EC</b> 410 to 510 ml / ha	<b>Terbuweed Plus 900 WDG</b> 540 g / ha	<b>Cantron® 480 SC</b> 210 to 260 ml / ha	<b>Villa 51</b> 0.1 %
<b>WEEDS CONTROLLED</b>				
<b>Botanical name</b>		<b>Common name</b>		
<i>Acanthospermum hispidum</i>		Upright starbur		
<i>Amaranthus hybridus</i>		Common pigweed		
<i>Brachiaria eruciformis</i>		Sweet signal grass		
<i>Chenopodium album</i>		White goosefoot		
<i>Chenopodium carinatum</i>		Green goosefoot		
<i>Cleome monophylla</i>		Spindlepod		
<i>Commelina benghalensis</i> *		Benghal wandering Jew		
<i>Digitaria sanguinalis</i>		Crab fingergrass		
<i>Datura ferox</i>		Large thorn apple		
<i>Echinochloa colona</i>		Marsh grass		
<i>Eleusine indica</i>		Goose grass		
<i>Eragrostis curvula</i>		Weeping love grass		
<i>Hibiscus cannabinus</i>		Kenaf		
<i>Hibiscus trionum</i>		Bladder weed		
<i>Nicandra physaloides</i>		Apple-of-Peru		
<i>Panicum schinzii</i> (= <i>laevifolium</i> )		Sweet buffalo grass		
<i>Physalis angulata</i>		Wild gooseberry		
<i>Polygonum aviculare</i>		Prostrate knotweed		
<i>Portulaca oleracea</i>		Purslane		
<i>Schkuhria pinnata</i>		Dwarf marigold		
<i>Setaria pumila</i> (= <i>pallide-fusca</i> )		Red bristle grass		
<i>Tagetes minuta</i>		Tall Khaki weed		
<i>Triumfetta pilosa</i>		-		
<i>Urochloa panicoides</i>		Herringbone grass		
<i>Xanthium strumarium</i>		Cocklebur		
<b>Re-cropping intervals:</b> See above under 1.9.				

\* Only at highest recommended dosage rate

### 1.10 Pre-emergence application of PALLADIUM PLUS 915 EC plus Grantron 750 WDG in maize

#### NOTES

- Follow this pre-emergence application after approximately 35 to 42 days with a post-emergence application of registered mixtures of **Grantron 750 WDG** plus Acetanalides (**Palladium 960 EC / Platinum 960 EC**) plus **Terbusien Super 600 SC** plus **Villa 51**, as instructed on the relevant labels.
- Certain weeds may not be controlled effectively at lower dosage rates.
- Refer to the **Grantron 750 WDG**, **Palladium 960 EC**, **Platinum 960 EC**, **Terbusien Super 600 SC** and **Villa 51** labels for a list of additional weeds controlled by this product, as well as for **WARNINGS, PRECAUTIONS, USE RESTRICTIONS** and **DIRECTIONS FOR USE**.

<b>PRE-EMERGENCE</b>	<b>PLUS</b>				
	<b>PALLADIUM PLUS 915 EC</b> 570 to 650 ml / ha *			<b>Grantron 750 WDG</b> 165 g / ha	
<b>POST-EMERGENCE</b>	<b>Grantron 750 WDG</b> 165 g / ha	<b>Palladium 960 EC</b> 410 to 510 ml / ha *	<b>OR</b> <b>Platinum 960 EC</b> 630 to 780 ml / ha *	<b>Terbusien Super 600 SC</b> 800 ml / ha	<b>Villa 51</b> 0.1 %
<b>WEEDS CONTROLLED</b>					
<b>Botanical name</b>			<b>Common name</b>		
<i>Acanthospermum hispidum</i>			Upright starbur		
<i>Amaranthus hybridus</i>			Common pigweed		
<i>Brachiaria eruciformis</i>			Sweet signal grass		
<i>Chenopodium album</i>			White goosefoot		
<i>Chenopodium carinatum</i>			Green goosefoot		
<i>Cleome monophylla</i>			Spindlepod		
<i>Commelina benghalensis</i> **			Benghal wandering Jew		
<i>Digitaria sanguinalis</i>			Crab fingergrass		
<i>Datura ferox</i>			Large thorn apple		
<i>Echinochloa colona</i>			Marsh grass		
<i>Eleusine indica</i>			Goose grass		
<i>Eragrostis curvula</i>			Weeping love grass		
<i>Hibiscus cannabinus</i>			Kenaf		
<i>Hibiscus trionum</i>			Bladder weed		
<i>Nicandra physaloides</i>			Apple-of-Peru		
<i>Panicum schinzii (= laevifolium)</i>			Sweet buffalo grass		
<i>Physalis angulata</i>			Wild gooseberry		
<i>Polygonum aviculare</i>			Prostrate knotweed		
<i>Schkuhria pinnata</i>			Dwarf Marigold		
<i>Setaria pumila (= pallide-fusca)</i>			Red bristle grass		
<i>Tagetes minuta</i>			Tall Khaki weed		
<i>Triumfetta pilosa</i>			-		
<i>Xanthium strumarium</i> ***			Cocklebur		
<b>Re-cropping intervals:</b> See above under 1.1.					

\* Use the low rate on sandy soils and the higher rate on loamy / sandy clay soil.

\*\* Only at the highest dosage rate.

\*\*\* Variable control of these weeds (up to 80 % suppression for a period of 8 weeks).

**1.11 Pre-emergence application of PALLADIUM PLUS 915 EC in a tank mixture with Grantron 750 WDG and Terbuweed Plus 900 WDG followed by a post-emergence application of Palladium 960 EC in a tank mixture with Grantron 750 WDG and Terbuweed Plus 900 WDG plus Villa 51 in maize for control of various weeds.**

**NOTES**

- **Grantron 750 WDG** can be applied as part of a pre-emergence tank mixture application or as a pre- and post-emergence tank mixture application.
- The post-emergence application should be applied between the 2- to 6-leaf stage for broadleaf weeds, and 2- to 3-leaf stage for grass weeds.
- Certain weeds may not be controlled effectively at lower dosage rates.
- Refer to the **Palladium 960 EC**, **Grantron 750 WDG** and **Terbuweed Plus 900 WDG** labels for a list of additional weeds controlled by these products, as well as for **WARNINGS**, **PRECAUTIONS**, **USE RESTRICTIONS** and **DIRECTIONS FOR USE**.

<b>PRE-EMERGENCE</b>	<b>PLUS</b>			
	<b>PALLADIUM PLUS 915 EC</b> 410 to 510 ml / ha *	<b>Grantron 750 WDG</b> 165 g / ha	<b>Terbuweed Plus 900 WDG</b> 540 g / ha	<b>None</b>
<b>POST-EMERGENCE</b>	<b>Palladium 960 EC</b> 570 to 650 ml / ha *	<b>Grantron 750 WDG</b> 165 g / ha	<b>Terbuweed Plus 900 WDG</b> 540 g / ha	<b>Villa 51</b> 0.1 %
<b>WEEDS CONTROLLED</b>				
<b>Botanical name</b>		<b>Common name</b>		
<i>Acanthospermum hispidum</i>		Upright starburst		
<i>Amaranthus hybridus</i>		Common pigweed		
<i>Bidens pilosa</i>		Common blackjack		
<i>Commelina benghalensis</i>		Benghal wandering Jew		
<i>Crotalaria sphaerocarpa</i>		Mealie crotalaria		
<i>Cyperus esculentus</i> **		Yellow nutsedge		
<i>Datura ferox</i>		Large thorn apple		
<i>Datura stramonium</i> **		Common thorn apple		
<i>Digitaria sanguinalis</i>		Crab fingergrass		
<i>Eleusine indica</i>		Goose grass		
<i>Eleusine coracana</i>		Goose grass		
<i>Ipomoea purpurea</i> **		Common morning glory		
<i>Panicum schinzii</i> (= <i>laevifolium</i> )		Sweet buffalo grass		
<i>Setaria verticillata</i>		Sticky bristle grass		
<i>Tagetes minuta</i>		Tall Khaki weed		
<i>Tribulus terrestris</i>		Dubbeltjie / Devil's thorn		
<i>Xanthium strumarium</i>		Cocklebur		
<b>Re-cropping intervals:</b> See above under 1.9.				

\* Use the low rate on sandy soils and the higher rate on loamy / sandy clay soil.

\*\* Variable control of these weeds.

**1.12 Pre-emergence application of PALLADIUM PLUS 915 EC plus Grantron 750 WDG plus Direction 700 WDG followed by post-emergence application of Palladium 960 EC plus Grantron 750 WDG plus Direction 700 WDG plus Villa 51 in maize for control of various weeds**

**NOTES**

- Apply tank mixture post-emergence in the 2- to 6-leaf stage for broadleaf weeds, and 2- to 3-leaf stage for grass weeds.
- Certain weeds may not be controlled effectively at lower dosage rates.  
Refer to **Grantron 750 WDG**, **Direction 700 WDG** and **Villa 51** labels for a list of additional weeds controlled by these products, as well as for **WARNINGS, PRECAUTIONS, USE RESTRICTIONS** and **DIRECTIONS FOR USE**.

<b>PRE-EMERGENCE</b>	<b>PLUS</b>			
	<b>PALLADIUM PLUS 915 EC</b> 650 ml / ha	<b>Grantron 750 WDG</b> 100 g / ha	<b>Direction 700 WDG</b> 100 g / ha	<b>None</b>
<b>POST-EMERGENCE</b>	<b>Palladium 960 EC</b> 600 ml / ha	<b>Grantron 750 WDG</b> 150 g / ha	<b>Direction 700 WDG</b> 100 g / ha	<b>Villa 51</b> 0.1 %
<b>WEEDS CONTROLLED</b> (Only apply on soil with a clay percentage greater than 10 %)				
<b>Botanical name</b>		<b>Common name</b>		
<i>Acanthospermum hispidum</i>		Upright starburst		
<i>Amaranthus hybridus</i>		Common pigweed		
<i>Bidens pilosa</i>		Common blackjack		
<i>Chenopodium album</i>		White goosefoot		
<i>Cleome monophylla</i>		Single leaved cleome		
<i>Cyperus esculentus*</i>		Yellow nutsedge		
<i>Datura ferox</i>		Large thorn apple		
<i>Digitaria sanguinalis</i>		Crab fingergrass		
<i>Echinochloa crus-galli</i>		Barnyard grass		
<i>Emex australis</i>		Spiny emex		
<i>Eleusine indica</i>		Goose grass		
<i>Ipomoea purpurea</i>		Common morning glory		
<i>Ipomoea obscura*</i>		Wild petunia		
<i>Panicum maximum</i>		Common buffalo grass		
<i>Panicum schinzii (= laevifolium)</i>		Sweet buffalo grass		
<i>Portulaca oleracea</i>		Common purslane		
<i>Schkuhria pinnata</i>		Dwarf Marigold		
<i>Tagetes minuta</i>		Tall Khaki weed		
<i>Tribulus terrestris</i>		Devils Thorn		
<i>Urochloa panicoides</i>		Herringbone grass		
<b>Re-cropping intervals:</b>				
<b>Maize and grain sorghum</b>			3 months	
<b>Potatoes and wheat</b>			6 months	
<b>Dry beans, groundnuts, soybeans and sunflowers</b>			9 months	
<b>All other crops</b>			24 months	

\* Variable control of these weeds.

**1.13 Pre-emergence application of PALLADIUM PLUS 915 EC in a tank mixture with Terbuweed Plus 900 WDG plus Cantron® Smart 500 SC followed by a post-emergence application in GLYPHOSATE TOLERANT maize for control of annual broadleaf and grass weeds:**

**NOTES**

- **Important:** This recommended spray mixture can only be applied in genetically modified maize cultivars that are certified as being tolerant to the herbicide active ingredient glyphosate.
- Apply post-emergence application during the 2- to 6-leaf stage for broadleaf weeds, and 2- to 3-leaf stage for grass weeds.
- To improve control of larger broadleaf weeds, Morning glory and other problem weeds add 250 ml **2,4-D Amine 480 SL** to the tank mixtures as listed below (**DO NOT** add any surfactant when **2,4-D Amine 480 SL** is used in a tank mixture).
- Certain weeds may not be controlled effectively at lower dosage rates.
- Refer to the **Terbuweed Plus 900 WDG, Cantron® Smart 500 SC, Palladium 960 EC, Platinum 960 EC** or **Premium 900 EC** labels for a list of additional weeds controlled by these products, as well as for **WARNINGS, PRECAUTIONS, USE RESTRICTIONS** and **DIRECTIONS FOR USE**.

		<b>PLUS</b>	<b>PLUS</b>	<b>PLUS</b>
<b>PRE-EMERGENCE</b>	<b>PALLADIUM PLUS 915 EC</b> 650 ml / ha	<b>Terbuweed Plus 900 WDG</b> 500 g / ha	<b>Cantron® Smart 500 SC</b> 2.5 l / ha	<b>Velocity® Super</b> 2 % <b>OR</b> <b>Velocity® DryMax</b> 1 % <b>OR</b> <b>Class Act® NG</b> 1 to 2 %
<b>POST-EMERGENCE</b>	<b>Palladium 960 EC</b> 410 to 500 ml / ha <b>OR</b> <b>Platinum 960 EC</b> 630 to 780 ml / ha <b>OR</b> <b>Premium 900 EC</b> 630 to 780 ml / ha	<b>Terbuweed Plus 900 WDG</b> 500 g / ha	<b>Cantron® Smart 500 SC</b> 2.5 l / ha	<b>Velocity® Super</b> 2 % <b>OR</b> <b>Velocity® DryMax</b> 1 % <b>OR</b> <b>Class Act® NG</b> 1 to 2 %
<b>WEEDS CONTROLLED</b>				
<b>Botanical name</b>		<b>Common name</b>		
<i>Amaranthus hybridus</i>		Common pigweed		
<i>Bidens bipinnata</i>		Spanish blackjack		
<i>Bidens pilosa</i>		Blackjack		
<i>Chenopodium album</i>		White goosefoot		
<i>Chloris virgata</i> **		Feathertop Chloris		
<i>Citrullus lanatus</i>		Wild watermelon		
<i>Cleome monophylla</i>		Spindlepod		
<i>Commelina benghalensis</i> *		Benghal wandering Jew		
<i>Crotalaria sphaerocarpa</i>		Mealie crotalaria		
<i>Cyperus esculentus</i> **		Yellow nutsedge		
<i>Datura ferox</i>		Large thorn apple		
<i>Datura stramonium</i>		Thorn apple		
<i>Digitaria sanguinalis</i>		Crab fingergrass		
<i>Eleusine indica</i>		Goose grass		
<i>Galinsoga parviflora</i>		Gallant soldier		
<i>Hibiscus cannabinus</i> **		Kenaf		
<i>Hibiscus trionum</i>		Bladder weed		
<i>Ipomoea purpurea</i>		Common morning glory		
<i>Panicum schinzii</i> (= <i>laevifolium</i> )		Sweet buffalo grass		
<i>Portulaca oleracea</i>		Purslane		
<i>Richardia brasiliensis</i>		Mexican richardia		

<i>Tagetes minuta</i>	Tall Khaki weed
<i>Tribulus terrestris</i> **	Dubbeltjie
<i>Urochloa panicoides</i> **	Herringbone grass
<i>Xanthium strumarium</i> **	Cocklebur
<b>Re-cropping intervals:</b> See above under 1.9.	

\* Only at the highest dosage rate.

\*\* Variable control of these weeds (up to 80 % suppression for a period of 8 weeks)

#### 1.14 Pre-emergence application of PALLADIUM PLUS 915 EC in a tank mixture with Crux 425 SC for the control of various weeds in maize and sweet corn.

##### **NOTES**

- Use the higher dosage rates on soils with higher clay/organic matter content, or where weed pressure is higher and/or extended residual action is required.
- Refer to the **Crux 425 SC** label for complete information.
- Refer to the **Crux 425 SC** label for a list of additional weeds controlled by these products, as well as for **WARNINGS, PRECAUTIONS, USE RESTRICTIONS and DIRECTIONS FOR USE.**

<b>PALLADIUM PLUS 915 EC</b> 0.65 to 1.2 l / ha	<b>Crux 425 SC</b> 0.8 to 1.2 l / ha
<b>WEEDS CONTROLLED</b>	
<b>Botanical name</b>	<b>Common name</b>
<i>Acanthospermum hispidum</i>	Upright starbur
<i>Amaranthus deflexus</i>	Perennial pigweed
<i>Amaranthus hybridus</i>	Cape pigweed
<i>Amaranthus spinosus</i>	Thorny pigweed
<i>Amaranthus thunbergii</i>	Red pigweed
<i>Argemone subfusiformis</i>	White flowered Mexican poppy
<i>Cleome monophylla</i>	Spindlepod
<i>Cleome rubella</i>	Pretty lady
<i>Chenopodium album</i>	White goosefoot
<i>Chenopodium carinatum</i>	Green goosefoot
<i>Citrullus lanatus</i>	Wild watermelon
<i>Bidens bipinnata</i>	Spanish blackjack
<i>Bidens pilosa</i>	Black jack
<i>Brachiaria eruciformis</i>	Sweet signal grass
<i>Chloris virgata</i>	Feathertop Chloris
<i>Commelina benghalensis</i>	Benghal wandering Jew
<i>Cosmos bipinnatus</i>	Cosmos
<i>Crotalaria sphaerocarpa</i>	Mealie Crotalaria
<i>Cucumis myriocarpus</i>	Striped wild cucumber
<i>Datura ferox</i>	Large thorn apple
<i>Datura stramonium</i>	Thorn apple
<i>Digitaria sanguinalis</i>	Crab fingergrass
<i>Eleusine indica</i>	Goose grass
<i>Emex australis</i>	Spiny Emex
<i>Euphorbia chamaesyce</i>	Hairy creeping milkweed
<i>Galinsoga parviflora</i>	Gallant soldier
<i>Gisekia pharnaceoides</i>	Gisekia
<i>Hibiscus cannabinus</i>	Kenaf
<i>Hibiscus trionum</i>	Bladderweed
<i>Ipomoea coscinosperma</i>	---
<i>Lepidium bonariense</i>	Pepper cress
<i>Nicandra physalodes</i>	Apple of Peru
<i>Panicum maximum</i>	Common buffalo grass



**1.14 Cont: Pre-emergence application of PALLADIUM PLUS 915 EC in a tank mixture with Crux 425 SC for the control of various weeds in maize and sweet corn.**

<b>PALLADIUM PLUS 915 EC</b> 0.65 to 1.2 ℓ / ha	<b>Crux 425 SC</b> 0.8 to 1.2 ℓ / ha
<b>WEEDS CONTROLLED</b>	
<i>Panicum schinzii</i> (= <i>laevifolium</i> )	Sweet buffalo grass
<i>Physalis angulata</i>	Wild gooseberry
<i>Polygonum aviculare</i>	Prostrate knotweed
<i>Portulaca oleracea</i>	Purslane
<i>Richardia brasiliensis</i>	Tropical Richardia
<i>Schkuhria pinnata</i>	Dwarf marigold
<i>Setaria pumila</i> (= <i>pallide-fusca</i> )	Red bristle grass
<i>Sida cordifolia</i>	Heartleaf Sida
<i>Spermacoce senensis</i>	Spike leaf
<i>Solanum nigrum</i>	Deadly nightshade
<i>Tagetes minuta</i>	Khaki weed
<i>Tribulus terrestris</i>	Dubbeltjie
<i>Urochloa panicoides</i>	Herringbone grass
<i>Xanthium spinosum</i>	Spiny cocklebur
<i>Xanthium strumarium</i>	Cocklebur
<b>Re-cropping intervals:</b> Re-cropping Periods mentioned are only valid if the correct amount of <b>Crux 425 SC</b> has been applied and normal or above normal rains occurred during the season, and normal cultivation practices carried out.	
<b>Maize, sugarcane and sweetcorn</b>	Nil
<b>Grain sorghum</b>	1 month
<b>Sunflowers, groundnuts, soybeans, potatoes, dry beans, forage sorghum and cotton</b>	3 months
<b>Wheat, broccoli, Lucerne, cucurbits, tobacco, green beans, peas (less than 400 mℓ Crux 425 SC) and green peppers</b>	4 months
<b>Small grains and peas</b>	18 months
<b>All other crops</b>	24 months

**2. GROUNDNUTS, DRY BEANS, SUNFLOWERS, SOYBEANS AND LUPINS**

**Table 2: PALLADIUM PLUS 915 EC recommendations for use in broadleaf crops.**

<b>Soil Type</b>	<b>% Clay</b>	<b>PALLADIUM PLUS 915 EC</b> ℓ / ha
Sand / loamy sand / sandy loam	0 to 20	0.5 to 0.7
Sandy clay loam	21 to 30	1.0
Sandy clay loam / sandy clay	> 30	1.3

**NOTE**

- The higher application rates of **PALLADIUM PLUS 915 EC** are recommended for the control of Yellow nutsedge (*Cyperus esculentus*) and Crabfinger-grass (*Digitaria sanguinalis*) and on soils with > 1.0 % organic matter.

**3. POTATOES**

**Pre-emergence in respect of weeds:**

Apply 1.3 litres per hectare, under dry land conditions, pre-emergence to potatoes and weeds, after the first summer rains.

**Early post-emergence in respect of weeds:**

**PALLADIUM PLUS 915 EC** is a pre-emergence herbicide. However, for early post weed emergence apply 1.3 litres per hectare under dry land conditions, after the first summer rains in a tank mixture with **Skoffel® 145 SL** at 1 to 2 litres per hectare. **PALLADIUM PLUS 915 EC / Skoffel® 145 SL** mixtures **must not** be applied after 10 % potato emergence.

A rate of 1.0 litres per hectare **PALLADIUM PLUS 915 EC** can be applied under irrigation.

**PALLADIUM PLUS 915 EC** can also be applied post-emergence to the potatoes after ridging.

#### 4. GRAIN SORGHUM

##### 4.1 Pre-emergence application rates of PALLADIUM PLUS 915 EC followed by a post-emergence application of Terbuclear 600 SC in Grain sorghum.

###### NOTES

- **PALLADIUM PLUS 915 EC**, applied pre-emergence, may be followed up by **Terbuclear 600 SC** early post-emergence in Grain sorghum.
- **Pre-treatment of the sorghum seed with the safener Theory 960 EC, will be required before PALLADIUM PLUS 915 EC can be applied pre-emergence.**
- Always add the surfactant **Villa 51** to post-emergence **Terbuclear 600 SC** spray mixtures.
- **PALLADIUM PLUS 915 EC can only be applied on forage sorghum (Sorghum x sorghum hybrids and Sorghum x Sudan grass hybrids). DO NOT spray forage sorghum hybrids with *Pennisetum* spp. or hybrids containing the BMR genes as this will lead to crop damage.**
- **PALLADIUM PLUS 915 EC** may temporarily damage grain and forage sorghum when high soil moisture conditions occur 4 to 6 weeks after planting. The crop will normally outgrow this injury without any detrimental effect on yield.
- If a soil crust is formed, it should be broken up immediately by means of shallow cultivation.
- The higher dosage rate of **PALLADIUM PLUS 915 EC** on heavier soils can be used to improve the control of Yellow nutsedge (*Cyperus esculentus*) and Sweet signal grass (*Brachiaria eruciformis*) on turf.
- Refer to the **Terbuclear 600 SC** and **Theory 960 EC** labels for **WARNINGS, PRECAUTIONS, USE RESTRICTIONS** and **DIRECTIONS FOR USE**.
- Application of sufficient fertilizer, band placed near the seed at planting, is recommended to enhance vigorous seedling growth.

<b>Soil type</b>	<b>% Clay</b>	<b><u>Pre-emergence:</u> PALLADIUM PLUS 915 EC ℓ / ha</b>	<b><u>Post-emergence:</u> Terbuclear 600 SC ℓ / ha</b>
Sand / laomy sand	0 to 15	<b>Not recommended</b>	
Sandy loam	16 to 20	0.5	2.6
Sandy clay loam	21 to 30	0.6	3.0
Heavier soil (turf soils included)	> 35	0.7 to 1.0	3.0
<b>Grain sorghum, maize and sugarcane</b>			Nil
<b>Dry beans, forage sorghum, groundnuts, potatoes, small grains, soybeans and sunflowers,</b>			18 months
<b>All other crops</b>			24 months

**WEEDS CONTROLLED**

<b>WEEDS CONTROLLED BY PALLADIUM PLUS 915 EC:</b>	
<b>Botanical Name</b>	<b>Common Name</b>
<i>Brachiaria eruciformis</i>	Sweet signal grass
<i>Chloris virgata</i>	Feather-top Chloris
<i>Dactyloctenium aegyptium</i>	Crowfoot
<i>Digitaria sanguinalis</i>	Crabfinger-grass
<i>Digitaria nuda</i>	Naked Crabfinger grass
<i>Echinochloa crusgalli</i>	Barnyard grass
<i>Eleusine indica</i>	Goose grass
<i>Panicum maximum</i>	Common buffalo grass
<i>Panicum schinzii</i> (= <i>laevifolium</i> )	Sweet buffalo grass
<i>Pseudobrachiaria deflexa</i>	False signal grass
<i>Setaria pumila</i> (= <i>pallide-fusca</i> )	Red bristle grass
<i>Setaria verticillata</i>	Bur bristle grass
<i>Tragus berteronianus</i>	Small carrotseed grass
<i>Tragus racemosus</i>	Large carrotseed grass
<i>Urochloa mosambicensis</i>	Bushveld herringbone grass
<i>Urochloa panicoides</i>	Herringbone grass
<b>WEEDS VARIABLY CONTROLLED BY PALLADIUM PLUS 915 EC:</b>	
<b>Botanical Name</b>	<b>Common Name</b>
<i>Amaranthus hybridus</i>	Common pigweed
<i>Amaranthus spinosus</i>	Thorny pigweed
<i>Amaranthus thunbergii</i>	Red pigweed
<i>Chenopodium carinatum</i>	Green goosefoot
<i>Cleome monophylla</i>	Spindlepod
<i>Commelina benghalensis</i>	Wandering Jew
<i>Cyperus esculentus</i>	Yellow nutsedge
<i>Datura ferox</i>	Large thorn apple
<i>Datura stramonium</i>	Thorn apple
<i>Galinsoga parviflora</i>	Gallant soldier
<i>Nicandra physaloides</i>	Apple of Peru
<i>Portulaca oleracea</i>	Purslane

**NOTES**

- The control of Yellow Nutsedge (*Cyperus esculentus*) is dependent on a thorough ploughing immediately before planting, application 1 to 2 days after planting, which is followed by about 10 to 20 mm rain within 7 to 10 days after ploughing. More rain is required on heavy soils.
- Control of *Digitaria nuda* becomes variable 5 to 6 weeks after application of **PALLADIUM PLUS 915 EC**. For extended control, follow the pre-emergence application of **PALLADIUM PLUS 915 EC** with an application of **Palladium 960 EC** plus **Cantron® 480 SC**, following cultivation of the soil to create a new pre-emergence scenario with regard to this and other grass weeds.

The following product mentioned in this label may be replaced with equivalent products:

- **TERBUCIDE PLUS 900 WDG** (L 9888 / W130866) = **TERBUWEED DUO 900 WDG** (L 9890) = **TERBUMAIS PLUS 900 WDG** (L 9998) (**Atrazine + Terbutylazine**),
- **ORTRON 750 WDG** (L 10707) = **GRANTRON 750 WDG** (L 10706) (**Mesotrione**),
- **DISCIPLINE 700 WDG** (L 9440) = **DIRECTION 700 WDG** (L 9439) (**Amicarbazone**),
- **CANTRON® SMART 500 SC** (L 9834) = **ASTRON® SMART 500 SC** (L 9832) (**Mesotrione + Glyphosate**),
- **CORVETTE 425 SC** (L 8323 / N-AR 1322 / W 130663) = **CRUX 425 SC** (L 8325) (**Sulcotrione + Atrazine**),
- **METOLACHLOR 960 EC** (L 7136 / W 130057 / N-AR 1362) = **PLATINUM 960 EC** (L 7434),
- **VELOCITY® SUPER** (L 9603 / W 130996) = **AMS-SUPER** (L 9758),

- **PREMIUM 900 EC** (L 7637) = **ACETOCHLOR 900 EC** (L 7633 / N-AR 1101 / W1301407) = **ARMANN 900 EC** (L 8626),
- **VILLA 51** (L 8050 / W 130454 / N-AR 1090) = **WEN 51** (L 8315),
- **TERBUGOLD 600 SC** (L 10507) = **TERBUCLEAR 600 SC** (L 10506 / W1301416 / N-AR 2240) (**S-metolachlor + terbuthylazine**),
- **CANTRON® 480 SC** (L 8365 / N-AR 1323 / W 130604) = **ASTRON® 480 SC** (L 8366) = **CANONNE 480 SC** (L 8735) (**Mesotrione**) and
- **PENTIUM 960 EC** (L 9830) = **PALLADIUM 960 EC** (L 9360 / W 130772 / N-AR 2242) = **PARTISAN 960 EC** (L 9964) (**S-metolachlor**).

**TERBUSIEN SUPER 600 SC, TERBUWEED DUO 900 WDG, ORTRON 750 WDG, DIRECTION 700 WDG, CANTRON® SMART 500 SC, CRUX 425 SC, PLATINUM 960 EC, ACETOCHLOR 900 EC, THEORY 960 EC, CANTRON® 480 SC and PALLADIUM 960 EC** are registered products of **VILLA CROP PROTECTION (PTY) LTD.**

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