SPYRO 915 EC

Reg. No. L10839, Act No. 36 of 1947 | Reg. Nr. L10839, Wet Nr. 36 van 1947

An emulsifiable concentrate herbicide for pre-emergence control of annual grasses and under certain conditions also yellow nutsedge in maize, sweet corn, grain sorghum, forage sorghum, green beans, groundnuts, dry beans, kidney beans, sunflowers, soybeans, lupins and cotton as well as potatoes and tobacco in the summer rainfall region.

'n Emulgeerbarekonsentraat onkruiddoder vir vooropkomsbeheer van eenjarige grasse en onder sekere omstandighede ook geeluintjies in mielies, suikermielies, graansorghum, voersorghum, groenbone, grondbone, droëbone, nierbone, sonneblomme, sojabone, lupiene, katoen en ook aartappels en tabak in die somerreënvalstreek.

HRAC HERBICIDE GROUP CODE K3

ACTIVE INGREDIENT:

S-metolachlor (chloro-acetanilide) 915g/ℓ

HRAC ONKRUIDDODERGROEPKODE K3

AKTIEWE BESTANDDEEL:

S-metolachlor (chloorasetanilied) 915g/ℓ

Registration Holder | Registrasiehouer

Sharda International Africa (PTY) LTD
Reg. No./Reg. Nr. 2010/002268/07
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BATCH NO. LOT NR.	
EXPIRY DATE VERVAL DATUM	

NET CONTENTS / NETTO INHOUD

20 ℓ

UN No./VN Nr. 3082

HARMFUL
SKADELIK

WARNINGS
- Handle with care.
- Harmful if swallowed.
- May cause sensitisation by skin contact.
- Toxic to fish.
- 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 show this label to him/her.
- 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.

Although this remedy has been extensively tested under a large variety of conditions, the registration holder does not guarantee that it will be effective under all conditions. The activity and effect may be affected by factors such as abnormal soil, climatic and storage conditions, quality of dilution water, compatibility with other substances not indicated on the label and the occurrence of resistance of the weed against the remedy, as well as by the method, time and accuracy of application. The registration holder furthermore does not accept responsibility for damage to crops, vegetation, the environment or harm to man or animal, or for lack of performance of the remedy concerned due to failure by the user to follow the label instructions, or to the occurrence of conditions which could not have been foreseen in terms of the registration. Consult the supplier in the event of any uncertainty.

PRECAUTIONS

- Do not inhale 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 or applying the product or before washing hands and face.
- Avoid drift of spray onto other crops, grazing, rivers, dams, boreholes and areas not under treatment.
- Clean applicator after use. Dispose of wash water 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 times with a volume of clean water equal to a minimum of 10 % of that of the container. Add the wash water to the contents of the spray tank before destroying the container.
- Do not use the empty container for any other purpose.

SYMPTOMS OF HUMAN POISONING
No case of human poisoning is on record. Under laboratory conditions the poisoning symptoms were: sedation, dyspnoea, exophthalmos, curved posture and ruffled fur.

FIRST AID TREATMENT
If poisoning is suspected immediately call a physician. Remove patient from further contact with pesticide and place him in a well-ventilated area. In case of eye contact hold eyelids open and flush with a steady, gentle stream of water for 15 minutes. In case of skin contact, wash with plenty of soap and water. Consult a physician if irritation persists. If the substance has been swallowed promptly administer a large quantity of milk, egg whites, gelatine solution or, if these are not available large quantities of water. Do not induce vomiting or give anything by mouth to an unconscious person.

NOTE TO PHYSICIAN
No specific antidote is known. If ingested, induce emesis or lavage stomach. Administration of aqueous slurry of activated charcoal may be considered. Apply symptomatic therapy.

RESISTANCE MANAGEMENT

SPYRO 915 EC is a group code K3 herbicide. Any weed population may contain individuals naturally resistant to **SPYRO 915 EC** and other group code K3 herbicides. The resistant individuals can eventually dominate the weed population if these herbicides are used repeatedly and exclusively in programs. **SPYRO 915 EC** or any other group code K3 herbicides may not control these resistant weeds.
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.

USE RESTRICTIONS

SPYRO 915 EC on green beans is only registered for use by McCain's on the cultivars
Fortè, Masai and Dark Seeded Provider in the production area of the Loskop scheme, Letsitele,
Ohrigstad and certain areas of the Highveld.

SPYRO 915 EC may damage maize and sweet corn under the following conditions:
- Poorly drained soils or soils with a compaction layer.
- Inbred parent plants of maize hybrids. Consult a representative of Sharda International Africa, the distributor or seed supplier.

SPYRO 915 EC may damage certain other crops under the following conditions:
- Tobacco and forage sorghum planted on very sandy and/or gravely soils.
- Grain sorghum and forage sorghum on soils with a high percentage (more than 60 %) fine sand and/or poor structure. These soils are inclined to compact with rain and are therefore poorly aerated. Grain Sorghum and forage sorghum planted deeper than 50 mm.
- Grain sorghum, forage sorghum and dry beans on fields with a high incidence of soil borne diseases and/or where monoculture is practised.
- Dry beans in hot, dry conditions especially in the presence of a compaction layer in the soil. Under these conditions beans might also be susceptible to wind damage.
- Sunflowers and dry beans on waterlogged, shallow, sandy soils of <100 cm depth with an impermeable clay sub soil.

Important
Where other herbicides are used in combination with **SPYRO 915 EC** the use restrictions as given on the labels of the herbicides concerned, must be adhered to.

WEEDS CONTROLLED
The following weed species are normally controlled by a pre-emergence application of **SPYRO 915 EC** at the dosage rates indicated below:

Brachiaria eruciformis	sweet signal grass
Chloris virgata	feather top Chloris
Dactyloctenium aegyptium	crowfoot
Digitaria sanguinalis	crab finger-grass
Echinochloa crusgalli	barnyard grass
Eleusine indica	goose grass
Panicum maximum	common buffalo grass
Panicum schinzii	sweet buffalo grass
Pseudobrachiaria deflexa	false signal grass
Setaria pallide-fusca	red bristle grass
Setaria verticillata	sticky bristle grass
Tragus berteronianus	small carrotseed grass
Tragus racemosus	large carrot seed grass
Urochloa mosambicensis	bushveld herringbone grass
Urochloa panicoides	herringbone grass
Control of the following weeds is variable	
Amaranthus hybridus	Cape pigweed
Amaranthus spinosus	thorny pigweed
Amaranthus thunbergii	red pigweed
Chenopodium carinatum	green goosefoot
Cleome monophylla	spindle pod
Commelina benghalensis	Bengal wandering Jew
Cyperus esculentus	yellow nutsedge
Datura ferox	large thorn apple
Datura stramonium	thorn apple
Galinsoga parviflora	gallant soldier
Nicandra physaloides	Apple of Peru
Portulaca oleracea	purslane

Important
Yellow nutsedge *(Cyperus esculentus)*
The control of *C. esculentus* can be improved provided the following conditions are met:
- Thorough ploughing with a mouldboard plough should immediately preceed planting.
- 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).
  These conditions are more likely to occur during the latter half of the planting season (November). More rain is required on heavier soils to obtain good results. This is the reason for the very poor control sometimes obtained on turf soils.
- Rainfall following herbicide application but before emergence of *C. esculentus* is necessary for optimum *C. esculentus* control. For this reason application of **SPYRO 915 EC** should be made at or immediately after planting into moist soil.
- When planting into dry soil (insufficient moisture for *C. esculentus* germination) **application of SPYRO 915 EC should be timed as close as possible to, but definitely before the first rains.**

DIRECTIONS FOR USE
Use only as directed

MIXING INSTRUCTIONS
Replace cap after use.
Half-fill the spray tank with water, then pour the required amount of **SPYRO 915 EC** into the spray tank while the water is being stirred. Top up with water to the final volume required.

Ensure thorough agitation of the mixture in the tank during mixing and spraying.

APPLICATION TECHNIQUES

Post plant pre-emergence
When planting into moist soil, **SPYRO 915 EC** must be applied within three days of planting (but preferably at planting) on a fine, even, firm and freshly prepared weed free seedbed. To obtain good results it is necessary that rain or irrigation follows application 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.
When planting into dry soil (insufficient moisture for germination), **SPYRO 915 EC** must be applied as close to, but definitely before the first rain.

Emerged weeds at the time of application will not be controlled.

Post-emergent:(maize, sweet corn, potatoes)

SPYRO 915 EC has very limited post-emergence effect. It may however be applied post emergence to the crop immediately after cultivation i.e. when no weeds are present. Weeds that are present after the cultivation will not be controlled.

Ground application:
SPYRO 915 EC may be applied with any medium or high volume sprayer, properly calibrated, and which is equipped with an efficient agitation mechanism. Choice and arrangement of fan-type spray nozzles should be such as to ensure even distribution and optimal recovery of the herbicide. The recommended amount of **SPYRO 915 EC** should be applied in at least 200 ℓ water/ha.

Aerial application:
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 Code 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 be met:
a) Application parameters:
- Volume: A minimum volume of 30 litres per hectare is recommended. As this product has not been evaluated at a reduced volume rate, the registrat ion 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 30 - 40 droplets per cm² must be recovered at the target.
- Droplet size: A droplet spectrum with a VMD of 250 - 280 microns is recommended. Ensure that the production of fine droplets (less than 150 microns - high drift & evaporation potential) 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 setup that will produce a droplet spectrum with the lowest possible relative span.
All nozzles / atomisers should be positioned within the inner 60% to 75% of the wingspan to prevent droplets from entering the wingtip vortices.

c) Meteorological conditions:
The difference in temperature between the wet and dry bulb thermometers, of a whirling hygrometer, should not exceed 8°C. The addition of a suitable anti-evaporant is recommended if the VMD of the droplets is less than 200 - 250 microns.
Stop spraying if the wind speed exceeds 15 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. **SPYRO 915 EC** in a tank mixture with may be applied aerially provided that the spray mixture is distributed evenly over the target area and the loss of spray material during application is restricted to a minimum.

To achieve this, it is essential that the following requirements be met:
- Use a conventional boom. Nozzles must be equipped with flat fan tips e.g. SS 6515 or similar.
- Maintain a flying height of three metres above the target area at wind speeds of 0 to 8 km/h and a flying height of two metres at wind speeds of 8 - 15 km/h. Do not spray when the wind speed exceeds 15 km/h.
- The difference between the wet and dry bulb reading, as determined with a swing hygrometer, must not exceed 8 ° C.
- Do not spray during the heat of the day.
- Ensure that fields are accurately marked.

Pre-emergence application
- A minimum spray volume of 30 l/ha.
- A minimum of 20 to 30 droplets per square centimetre must be recovered on the target area.
- Employ a droplet spectrum with a VMD of 350-400 micron.

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

Centre pivot irrigation application:

SPYRO 915 EC may be applied in irrigation water pre-emergence (after planting but before weeds or crop emerge) at rates recommended on this label.

Use only centre pivot systems that apply water uniformly. Prepare a mixture with a minimum of one part of water to one part herbicide and inject this mixture into the centre pivot system using a positive displacement pump. Injecting a larger volume of a more dilute mixture per hour will usually provide more accurate calibration of metering equipment. Maintain sufficient agitation to keep the herbicide in suspension. Apply in 12,5 - 25 mm of water. Use the lower water volume (12,5 mm) on coarser textured soils and the higher volume (25mm) on finer textured soils. More than 25 mm of water at application may reduce weed control by moving the herbicide below the effective zone in the soil.

Precautions for centre pivot applications:
- Apply only through irrigation systems containing anti-siphon and check valves to prevent contamination of the well during shutdown and overflow of solution tank.
- Inject ahead of any right angle turn in the main line to insure adequate mixing.
- Chemical injection pumps and water pumps must have interlocking controls to insure simultaneous shut-off.
- Application when drift may occur, such as from windy conditions, or when system joints and connections are leaking, or when nozzles are not providing uniform distribution, may cause crop injury.
- Where sprinkler distribution patterns do not overlap sufficiently this may result in poor weed control. Where sprinkler distribution patterns overlap excessively, crop injury or unacceptable residues may result.

RECOMMENDATIONS AND APPLICATION RATES

MAIZE AND SWEETCORN
SPYRO 915 EC may be applied immediately following planting but pre-emergence with respect to maize, sweetcorn and weeds or it may be shallowly incorporated into the soil just prior to planting. It may also be applied post-emergence after cultivation. Where **yellow nuts edge** *(C. esculentus)* constitutes an important part of the weed population and planting commences during the first half of the planting season (prior to 20 October), it is recommended that a shallow incorporation of **SPYRO 915 EC** be carried out. Where **yellow nutsedge** is not a problem or where planting only commences during the second half of the planting season (after 20 October) the incorporation of **SPYRO 915 EC** is not recommended.

Since SPYRO 915 EC inadequately controls broadleaf weeds, the use of a broadleaf herbicide in combination with **SPYRO 915 EC** is recommended. The broadleaf herbicide may be applied preor post-emergence. As post-emergence treatments afford more effective and also more reliable control of especially deep germinating broadleaf weeds such as *Datura* spp., *Xanthium* spp., *Tribulus terrestris*, C. *benghalensis* and *Cucumis myriocarpus* post-emergence treatments are preferred. The different combinations, which may be used, are indicated in the following five tables.

TABLE 1: SPYRO 915 EC plus DUPLEX 600 SC SC applied pre-emergence as a tank mixture or pre-plant incorporated application of SPYRO 915 EC followed by pre-emergence application of DUPLEX 600 SC SC:

Soil type	% Clay	*SPYRO 915 EC* (ℓ/ha)	DUPLEX 600 SC SC (ℓ/ha)
Sand	**0 – 10**	***0.4 – 0.65***	***2.2***
Loamy sand / sandy loam	***11 – 20***	***0.4 – 0.6***	***2.5***
Sandy clay loam	***21 – 30***	***0.5 – 0.7***	***3.2***
Sandy clay loam / sandy clay	***31 – 40***	***0.6 – 0.7***	***4.0***
Sandy clay / Turf	***41 – 50***	***0.6 – 0.8***	***4.8***

Important
- Consult the DUPLEX 600 SC labels for crop rotation recommendations.

Use the higher rates of where longer residual action with regard to broadleaf weeds is required, especially those that germinate late in the season such as **khaki weed** *(Tagetes minuta)* and **thorn apple** *(Datura stramonium)*. Where khaki weed is the main problem DUPLEX 600 SC is preferred.

TABLE 2: SPYRO 915 EC applied pre-emergence or pre-plant incorporated followed by DUPLEX 600 SC SC early post-emergence:

Soil type	% Clay	*SPYRO 915 EC* (ℓ/ha)	GARDOMIL GOLD 600 SC (ℓ/ha)
Sand	**0 – 10**	***0.55 – 0.65***	***2.3***
Loamy sand / sandy loam	***11 – 20***	***0.5 – 0.65***	***2.8***
Sandy clay loam	***21 – 30***	***0.65 – 0.8***	***3.2***
Sandy clay loam / sandy clay	***31 – 40***	***0.75 – 0.9***	***3.2 – 4.8***
Sandy clay / Turf	***41 – 50***	***0.8 – 1.0***	***3.2 – 4.8***

TABLE 3: SPYRO 915 EC applied pre-emergence or pre-plant incorporated followed by an early post emergence application of DUPLEX 600 SC plus 2,4-D amine:

Soil type	% Clay	*SPYRO 915 EC* (ℓ/ha)	DUPLEX 600 SC (ℓ/ha)
Sand/ Loamy sand / sandy loam	0 – 20	*0.7 – 0.9*	All soil types 1,25ℓ DUPLEX 600 SC 0,75ℓ 2,4 – D 480 SL OR 1,7ℓ DUPLEX 600 SC + 0,5ℓ 2,4 – D 480 SL
Sandy clay Loam	*21 – 30*	*0.8 – 1.0*	
Sandy clay loam / sandy clay	*31 – 40*	*0.95 – 1.1*	
Sandy clay / Turf	*41 – 50*	*0.95 – 1.3*	

Crop rotation
The above mentioned quantities of GARDOMIL GOLD 600 SC recommended in Tables 1 and 2 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 GARDOMIL GOLD 600 SC should not exceed 2,2 ℓ /ha (Table 4).

TABLE 4: SPYRO 915 EC plus DUPLEX 600 SC SC applied pre-emergence as a tank mixture or pre-plant incorporated application of SPYRO 915 EC followed by pre-emergence application of DUPLEX 600 SC SC to facilitate crop rotation:

Soil type	% Clay	*SPYRO 915 EC* (ℓ/ha)	GARDOMIL GOLD 600 SC (ℓ/ha)
Sand/ Loamy sand / sandy loam	0 – 20	*0.5 – 0.65*	*2.2*
Sandy clay loam	*21 – 30*	*0.6 – 0.8*	*2.2*
Sandy clay loam / sandy clay	*31 – 40*	*0.8 – 0.9*	*2.2*
Sandy clay / Turf	*41 – 50*	*0.9 – 1.1*	*2.2*

COMMENTS TABLES 1, 2, 3 and 4

Important Note
- Do not use GARDOMIL GOLD 600 SC as follow-up application or in combination with **SPYRO 915 EC** on SWEETCORN. Use only the recommendations in Table 3 for sweetcorn.
- Use the higher application rates of **SPYRO 915 EC** for improved control of *C. esculentus* (**yellow nuts edge**).
- Use the higher application rates of **SPYRO 915 EC** where heavy infestations of *D. sanguinalis* (**crab finger- grass**) exist.
- Use the higher application rates of **SPYRO 915 EC** for good control of *B. eruciformis* (**sweet signal grass**).
- Use the higher application rates when **SPYRO 915 EC** is pre-plant incorporated.
- Use the higher application rates of **SPYRO 915 EC** where organic matter in the soil exceeds 1%.
- On soils containing more than 30 % clay broadleaf weeds may not be controlled satisfactorily pre emergence (Table 1) and preference should be given to post-emergence control of broadleaf weeds (Tables 2 and 3).
- On soils containing more than 30 % clay where the **SPYRO 915 EC** plus GARDOMIL GOLD 600 SC split treatment is selected, the rate of DUPLEX 600 SC can be varied according to the degree of pre-emergence control achieved and the prevailing weather conditions.

COMPLEMENT must be added to the spray mixture when DUPLEX 600 SC is applied post emergence.

COMPLEMENT must not be added to the GESAPRIM SUPER 600 SC plus 2,4-D amine mixture.
- On soils with 0 - 10 % clay in the North West Province and North Western Free State or on calcareous soils the low rates of GARDOMIL GOLD 600 SC (Table 3) may still damage follow-up crops.
- These low rates may result in poorer broadleaf control and shorter residual effect on soils with more than 20 % clay (Table 4). Thus post-emergence control of broadleaf weeds as recommended in Table 2 is preferred when crop rotation with sensitive crops is practised.
- Consult the DUPLEX 600 SC and DUPLEX 600 SC labels for additional Information.

Grass killers belonging to the chloroacetamide group of herbicides (that includes **SPYRO 915 EC** are absorbed via the coleoptile 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 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. A split application (as recommended in Table 3) is recommended if **SPYRO 915 EC** is used on such soils. Permeating and/or persistent rain after the split application will have the same result.

Where EPTC is used for the control of yellow nutsedge *(C. esculentus)* and grasses, improved late season control of these weeds can be obtained if EPTC is followed by an early post-emergence application of a **SPYRO 915 EC** plus DUPLEX 600 SC SC tank mixture. EPTC should be used as recommended on the label.

TABLE 5: SPYRO 915 EC applied early post- emergence in a tank mixture with GARDOMIL GOLD 600 SC after initial application of EPTC:

Soil type	% Clay	*SPYRO 915 EC* (ℓ/ha)	DUPLEX 600 SC SC (ℓ/ha)
Sand	0 – 10	*0.55*	*2.2*
Loamy sand / sandy loam	*11 – 20*	*0.5*	*2.5*
Sandy clay loam	*21 - 30*	*0.6*	*3.2*

Important

COMPLEMENT must be added to this post-emergence spray mixture.
Improved initial broadleaf control
In order to improve the variable initial broadleaf control of **SPYRO 915 EC** it can be used pre-mergence in a tank mixture with DUPLEX 600 SC SC followed early post-emergence with DUPLEX 600 SC SC.

TABLE 6: SPYRO 915 EC applied pre-emergence in a tank mixture with GARDOMIL GOLD 600 SC for more reliable initial broadleaf control:

Soil type	% Clay	PRE-EMERGENCE SPYTO 915 EC + GARDOMIL GOLD 600 SC(ℓ/ha)	EARLY POST EMERGENCE GARDOMIL GOLD 600 SC SC (ℓ/ha)
Sand/ loamy sand / sandy loam	0 – 20	*0.65 + 0.8*	*2.0*
Sandy clay loam	*21 – 30*	*0.75 + 1.0*	*2.2*
Sandy clay loam/ sandy clay	*>30*	*0.9 + 1.2*	*2.8*

STALE SEEDBED / MINIMUM TILLAGE / STUBBLE MULCH
(Maize, sweet corn, grain sorghum)

Where minimum tillage or stubble mulch is practised, weeds may have emerged at the time of planting. If crops are planted under such conditions or into a stale seedbed, where grass weeds have already emerged and/or the broadleaf weeds have developed beyond the seedling stage, it is recommended that SHARDA PARAQUAT 200 SL or STING be added to **SPYRO 915 EC** according to the recommendations of the manufacturer. The SHARDA PARAQUAT 200 SL or STING will destroy the emerged weeds and create a pre-emergence situation for the **SPYRO 915 EC** to act.
When SHARDA PARAQUAT 200 SL or STING is added, spraying should be carried out prior to emergence of the crop, as SHARDA PARAQUAT 200 SL and STING will damage the crop if it is applied post-emergence.
In the case of minimum tillage or stubble mulch the density of the stubble and humus may affect the efficacy of **SPYRO 915 EC** . Therefore, consult a representative of Sharda International Africa or distributor.

Important:
- All dosage rates given above apply to full cover sprays. In the case of band treatment over the rows the corresponding amount of herbicide should be calculated in accordance with the band and row widths.
- Ensure that the crop is properly fertilised to ensure vigorous seedling growth.

OTHER COMBINATIONS:
SPYRO 915 EC can be used in combination with SHARDA MESOTRIONE 480 SC to control grasses and broadleaf weeds. Consult the SHARDA MESOTRIONE 480 SC label for detailed recommendations.

GROUNDNUTS, GREEN BEANS, DRY BEANS, KIDNEY BEANS, SUNFLOWERS, SOYBEANS AND LUPINS:

TABLE 7: The following SPYRO 915 EC application rates are recommended for the different crops on various soil types and for the control of certain weeds:

Soil type	% Clay	SPYRO 915 EC (ℓ/ha)
Sand/ loamy sand/ sandy loam	0 – 20	*0.6 – 0.8*
Sandy clay loam	*21 – 30*	*0.8 – 1.0*
Sandy clay loam	*>30*	*1.0 – 1.3*

Use the higher application rate of **SPYRO 915 EC** for improved control of **yellow nutsedge** *(C. esculentus)* or where heavy infestations of **crab finger-grass** *(D. sanguinalis)* exist or where the organic matter in the soil exceeds 1 % carbon.

Important

Groundnuts only
- To obtain good broadleaf control, IGRAN 500 SC may be added to **SPYRO 915 EC** at the rates indicated on the IGRAN 500 SC label as per soil type. **IGRAN 500 SC is only recommended where overhead sprinkler irrigation is practiced.**

Tank mixtures with HAMMER 100 SL

The following application rates as tank mixtures of **SPYRO 915 EC** plus HAMMER 100 SL are recommended for the different crops on various soil types and for the control of certain weeds.

TABLE 8: Tank mixtures of SPYRO 915 EC + HAMMER 100 SL on dry beans:

Soil type	% Clay	SPYRO 915 EC (ℓ/ha)	HAMMER 100 SL (ℓ/ha)
Sand/ loamy sand	0 – 15	*0.6*	*0.3*
Sandy loam / sandy clay loam	*16 – 25*	*0.6*	*0.4*
Sandy clay loam/ sandy clay	*26 – 35*	*0.8*	*0.5*
Sandy clay/ Turf	*>35*	NOT RECOMMENDED	

TABLE 9:
The following application rates DUBBEL GOUD 915 EC are recommended for groundnuts and Soybeans on various soil types and for the control of certain weeds:

Soil type	% Clay	SPYRO 915 EC (ℓ/ha)	HAMMER 100 SL (ℓ/ha)
Sand/loamy sand/sandy loam	0 – 25	*0.5 – 0.8*	*0.4*
Sandy clay loam/sandy clay	*26 – 35*	*0.8 – 1.0*	*0.5*
Sandy clay/ Turf	*>35*	NOT RECOMMENDED	

Remarks (Tables 9 and 10)
- A tank mixture of **SPYRO 915 EC** plus HAMMER 100 SL may damage the crop when used on a soil with a pH of more than 7 in water
- The control of certain weeds may be detrimentally affected under the following conditions:
- A poorly prepared seedbed.
- Soils with a pH (H20) of less than 5.
- Dry conditions directly after application or a lack of sufficient rain on heavy soils.
- Consult the HAMMER 100 SL label for full details.

POTATOES (SUMMER RAINFALL REGION ONLY)

Apply 1,3 ℓ/ha **SPYRO 915 EC** on all soil types. To obtain good broadleaf weed control SENCOR 480 SC may be added to **SPYRO 915 EC** at a rate of 1,1 ℓ/ha. When used in combination with BUZZIN 480 SC, the rate of **SPYRO 915 EC** may be lowered to 1,0 ℓ/ha where potatoes are planted during the rainy season or under irrigation. Where potatoes are planted on dry land, prior to the start of the rainy season, the higher rate of **SPYRO 915 EC** should be applied even when used in combination with BUZZIN 480 SC.

The restrictions with regard to BUZZIN 480 SC as indicated on the label must be observed.

Ridging

After herbicide application, ridging should be delayed as long as possible since untreated soil is brought to the surface by this operation, which may result in a new flush of weed growth. **SPYRO 915 EC** can also be applied post-emergence to the potatoes after ridging. Under these circumstances a directed application is preferable although not essential.

GRAIN SORGHUM / FORAGE SORGHUM
SPYRO 915 EC may be used in grain sorghum and forage sorghum **provided the sorghum seed has been properly treated as prescribed with CONCEP® 960 EC**. The following application rates are recommended for the control of annual grasses and partial control *of C. esculentus*.

TABLE 10: SPYRO 915 EC rates when applied on CONCEP 960 EC treated sorghum:

Soil type	% Clay	*SPYRO 915 EC* (ℓ/ha)
Sand/ Loamy sand / sandy loam	0 – 20	NOT RECOMMENDED
Sandy clay loam	*21 – 30*	*0.8*
Sandy clay	*31 – 40*	*0.95*
Turf	*>40*	*0.95 – 1.3*

Important
- On turf soils, *B. eruciformis* may require 1,3 l/ha of **SPYRO 915 EC** for good control. It may also improve the control of *C. esculentus*.
- Use the higher application rates of **SPYRO 915 EC** where heavy infestations of *D. sanguinalis* (**crab finger- grass**) exist.
- If grain and forage sorghum seed are not properly pre-treated with CONCEP 960 EC, **SPYRO 915 EC 915 EC** will cause severe injury to the crop.
- If a soil crust is formed it should be broken up immediately by means of shallow cultivation.
- Grain and forage sorghum may be damaged temporarily when high soil moisture conditions occur 4 – 6 weeks after planting. The crop will normally outgrow this injury without any detrimental effect on yield.

Pre-emergence control of broadleaf weeds and grass in grain sorghum.
- A tank mix of **SPYRO 915 EC** + META SUPER 600 SC at 0,5 l/ha + 3,0 l/ha may also be used for pre-emergence weed control in grain sorghum on soils with 21 - 30 % clay and 0,6 l + 3,7 l/ha respectively on soils with 31 - 35 % clay. (Consult the META SUPER 600 SC label.)
- On all soil types a pre-emergence treatment of **SPYRO 915 EC** for grass control may be followed by an early post-emergence treatment of GESAPRIM SUPER 600 SC plus 2,4-D amine to control the broadleaf weeds (consult the GESAPRIM SUPER 600 SC label).
- An alternative after a pre-emergence treatment of **SPYRO 915 EC** is an early post emergence follow-up treatment with META SUPER 600 SC. META SUPER 600 SC may only be applied from the 5-leaf stage of the grain sorghum.
- When crop rotation is practiced the META SUPER 600 SC rate must not exceed 2,0 l/ha. Consult the META SUPER 600 SC label.

The following application rates should be used:

TABLE 11: SPYRO 915 EC followed by META SUPER 600 SC to improve broadleaf weed control on grain sorghum:

Soil type	% Clay	Pre-emergence	Post-emergence
		SPYRO 915 EC (ℓ/ha)	META SUPER 600 SC(ℓ/ha)
Sand/loamy sand	0 – 15	NOT RECOMMENDED	
Sandy loam	*16 – 20*	*0.5*	*2.6*
Sandy clay loam	*21 – 30*	*0.6*	*3.0*
Heavier soils including Turf	*>30*	*0.7 – 1.0*	*3.0*

Important
- The adjuvant COMPLEMENT should be added to all post-emergence applications except GESAPRIM SUPER 600 SC plus 2,4-D amine.
- On turf soils 1,0 l/ha **SPYRO 915 EC** may be required for good control of *B. eruciformis* and it can also be used for improved control of *C. esculentus.*

TOBACCO (SUMMER RAINFALL REGION ONLY)
Apply **SPYRO 915 EC** as a full cover spray within 3 days after transplanting of the tobacco while the plants are still wilted. When **SPYRO 915 EC** is applied to turgid tobacco transplants the spray must be directed in such a way that it does not enter the funnel of the plant where it may damage the growing point. Where **SPYRO 915 EC** is sprayed on the leaves of actively growing tobacco scorching may occur. On light soils (0 -10 % clay) **SPYRO 915 EC** must only be applied between plant rows in such a way that an unsprayed strip with a width of about 20 - 25 cm on top of the ridge (i.e., 10 cm on both sides of the plant row) is left.
Existing weeds must be removed before **SPYRO 915 EC** application. This may be done mechanically or by hand or by application of SHARDA PARAQUAT 200 SL immediately before transplanting. Any growing weeds present at the time of application will not be controlled. Where tobacco is planted on ridges, use 110° nozzles and position the nozzles between the ridges. This will ensure more even distribution of the herbicide.
In order to activate the **SPYRO 915 EC** overhead irrigation of at least 10 mm but not more than15 mm should be applied within 2 - 3 days after **SPYRO 915 EC** application on soils with less than 35 % clay and at least 20 mm but not more than 30 mm on soils with more than 35 % clay.

Only strong and healthy plants should be transplanted. Tobacco plants with roots exposed to **SPYRO 915 EC** at the time of application will be adversely affected. Ensure, therefore, that planting is done properly.

TABLE 12: Application rates of SPYRO 915 EC on Tobacco:

Soil type	% Clay	*SPYRO 915 EC* (ℓ/ha)
Sand	0 – 10	0.5
Loamy sand / sandy loam	*11 – 20*	*0.7*
Sandy clay loam	*21 – 35*	*1.0*
Sandy clay	*>35*	*1.4*