

Agri
NOVAGENIX

MOCHACO

Reg. No. / Nr L11884 Act No. 36 of 1947 / Wet Nr 36 van 1947

READ THE LABEL BEFORE USE
KEEP OUT OF REACH OF CHILDREN AND ANIMALS

GROUP

15

HERBICIDE

An emulsifiable concentrate herbicide for the control of weeds in the crops as listed.

'n Emulgeerbare konsentraat onkruidodder vir die beheer van onkruid in die gewasse soos aangedui.

WARNING



In case of poisoning, call the following number: Poisons Information Helpline: +27 861 555 777
EMERGENCY NUMBER: +27 82 446 8946

Hazard statements

May cause an allergic skin reaction.
Very toxic to aquatic life with long lasting effects.

Precautionary statements

IF ON SKIN: Wash with plenty of water.
Collect spillage.
Avoid release to the environment.

Active Ingredient / Aktiewe Bestanddeel

S-metolachlor (chloro-acetanilide)...contains 960 g a.i. per l..... S-metolachloor (chloorasetanilied)

Net volume l Netto volume

Batch No./Date manufactured/Expiry date: Refer to details printed on container.
UN No. / VN Nr. 3082

REGISTRATION HOLDER / REGISTRASIEHOUER:

Novagen Innovations (Pty) Ltd / (Edms) Bpk t/a Agri Novagenix
Reg. No. 2020/891524/07
6 Antwerp Street, Apex, Benoni, 1540, South Africa / Suid-Afrika



WARNINGS

- GHS Hazard statements

May cause an allergic skin reaction.
Very toxic to aquatic life with long lasting effects.

- Handle with care.
- Harmful if swallowed.
- Do not contaminate dams, rivers, lakes, or any other water sources.
- Store under lock and key in the original container in a cool, dry, well-ventilated place out of direct sunlight.
- Store away from food, feed, fertilizer, and seed.
- Keep out of reach of children, uninformed persons, and animals.
- **Re-entry:** Do not enter a treated field within 1 day following application unless wearing protective clothing.
- **Aerial application:** Notify all inhabitants in the immediate area to be sprayed and issue the necessary warnings. Do not spray over or allow spray drift to contaminate adjacent areas such as crops, rivers, dams and wetlands.
- **In case of poisoning immediately call a physician and make this label available to him/her.**

DISCLAIMER

Although this remedy has been 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 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 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

- GHS Precautionary statements

If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Read carefully and follow all instructions.
Avoid breathing dust/fume/gas/mist/vapours/spray.
Contaminated work clothing should not be allowed out of the workplace.
Avoid release to the environment.
Wear protective gloves.
IF ON SKIN: Wash with plenty of water.
Specific treatment (See FIRST AID TREATMENT on this label).
If skin irritation or rash occurs: Get medical help.
Take off contaminated clothing and wash it before reuse.
Collect spillage.
Dispose of contents/container in accordance with national regulations.

- OPERATOR PROTECTION
 - Handle with care.
 - Do not inhale spray mist or fumes.

- Wash with soap and water after use and accidental skin contact as well as contact with contaminated clothing.
 - Avoid skin contact by wearing protective clothing when mixing the product.
 - Avoid contact with the spray as far as possible.
 - Should eye contact occur, flush the eyes with plenty of clean water for 15 minutes holding eyelids open. Remove contact lenses after five minutes of irrigation. Seek medical attention if required.
 - Wash contaminated clothing after use.
 - Do not eat, drink, or smoke while mixing or applying the product or before washing hands and face.
- **ENVIRONMENTAL PROTECTION**
 - Do not contaminate dams, rivers, lakes, or any other water sources.
 - Avoid drift of spray onto other crops, grazing, rivers, dams, and areas not under treatment.
 - Clean the applicator with clean water directly after use. Dispose of the rinsate where it will not contaminate crops, grazing, rivers, dams, and boreholes.
- **STORAGE AND DISPOSAL**
 - Store under lock and key in the original container in a cool, dry, well-ventilated place out of direct sunlight.
 - Store away from food, feed, fertilizer, and seed.
 - **KEEP OUT OF SIGHT AND REACH OF CHILDREN**, uninformed persons, untrained personnel, unauthorised personnel and animals.
 - Do not allow access to this product by children, uninformed persons, untrained personnel, unauthorised personnel, or animals under any circumstances.
 - Prevent contamination of food, feeds, drinking water and eating utensils.
 - Containers and packages must be completely emptied before disposal.
 - **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 times in succession with one quarter of the container volume fresh water and decant the rinsate into the spray or mixing tank. Destroy the triple rinsed container by perforation and flattening and do not use for any other purpose. Store appropriately until it can be disposed of via an approved collector or recycler authorised to recycle or destroy waste in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) and the relevant waste management regulations. Empty containers and product should not be burnt. Do not bury, burn or donate the container to any other parties that may use it as a container for food or beverages.

RELEVANT SUBSTANCES

Hazardous ingredient	Concentration (w/v)
S-metolachlor	96%

FIRST AID TREATMENT

If medical advice is needed, have product container or label at hand. Provide medical personnel with the product container, label or safety data sheet (SDS) when seeking medical attention.

General Information: Remove patient from exposed area. Never give fluids or induce vomiting if the patient is unconscious or is having convulsions.

Inhalation: Remove patient to fresh air. Loosen clothing around neck. Lie down and keep warm and rested. If breathing is shallow or has stopped ensure airway is clear and apply resuscitation. Seek medical assistance if irritation occurs or persists.

Skin contact: Immediately flush body and clothes with large amounts of water and soap. Remove contaminated clothing and footwear. Wash affected areas with soap and water. Do not rub skin. Persons providing first aid must wear gloves to avoid self-contamination. If skin irritation persists, seek medical assistance.

Eye contact: Immediately flush eyes with plenty of water for at least 15 minutes holding the eyelids open. Remove contact lenses, if present and easy to do, after the first five minutes. Seek medical assistance if irritation occurs and persists.

Ingestion: Never give anything by mouth to an unconscious person. Do not induce vomiting unless instructed to do so by a physician. Have the patient rinse their mouth with water if they are alert and able. For advice, contact the National Poisons Centre. Seek medical assistance if irritation occurs or persists.

No specific antidote known. Treat symptomatically and supportively. Do not induce vomiting: Contains petroleum distillates and/or aromatic solvents. For further information on the treatment of poisoning refer to the product Safety Data Sheet provided.

RESISTANCE MANAGEMENT WARNING STATEMENT

For resistance management, **MOCHACHO** is a group code 15 herbicide. Any weed population may contain individuals naturally resistant to **MOCHACHO** and other group code 15 herbicides. These resistant individuals can eventually dominate the weed population if these herbicides are used repeatedly. These resistant weeds may not be controlled by **MOCHACHO** or any other group code 15 herbicide.

To delay herbicide resistance:

- Avoid the exclusive repeated use of herbicides from the same herbicide group code. Alternate, or tank mix, with registered products from different herbicide group codes. Large numbers of healthy surviving weeds can be an indication that resistance is developing. Efforts should be taken to prevent seed set of these survivors.
- Integrate other control methods (such as chemical, cultural, biological) into weed control programmes.
- Maintain herbicide use records for each field.
- Refer to the Herbicide Resistance Action Committee for information regarding any applicable resistance management of group 15 herbicides at <https://hracglobal.com/> for more information.
- Avoid distribution of the resistant species to adjacent fields by implements during the cultivation period.
- When grazing, start with lands with the lowest weed resistance before moving to lands with a high resistance as the animals may spread the seed.
- Inspect all lands annually in order to identify the development of resistance from an early stage.

As the occurrence of resistance cannot be forecast, users are advised to keep all treated crops under close observation. If the treatment is not effective following the use of **MOCHACHO** as recommended, a resistant strain may be present. If a resistant strain is positively identified, consideration should be given to the prompt use of a herbicide with a different mode of action against which no record of resistance exists.

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

The presence of resistant weeds is difficult to detect prior to use and therefore neither the Registration Holder nor the Distributor can accept responsibility for any losses as a result of **MOCHACHO** not controlling resistant weeds. Do not apply **MOCHACHO** alone in situations where weed resistance has been confirmed. Sub-standard application of **MOCHACHO** or other group code 15 herbicides will lead to inferior weed control and may assist in the development of herbicide resistance.

MODE OF ACTION

S-metolachlor is the S-enantiomer of Metolachlor and is a chloroacetamide herbicide. It controls weeds via the inhibition of the growth of seedling shoots by inhibiting the formation of very long chain fatty acids. S-metolachlor is a selective herbicide, absorbed predominantly by the hypocotyls and shoots and inhibits germination.

GRASS CONTROL

Grass killers belonging to the chloroacetamide group of herbicides (including **MOCHACHO**) are absorbed via the coleoptiles of grass weeds. Thus, 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, determines the resultant concentration of these herbicides in the top layers of the soil profile. Due to the low adsorption capacity of sandy soils (0-15% clay, <1.0% 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 or more within 1 day). Persistent rain (50 mm or more distributed over 3 – 7 days) will have the same result. It may therefore happen that grasses germinate if such conditions prevail. Split applications are recommended if **MOCHACHO** is used on such soils. Permeating and / or persistent rain after the split application will have the same result.

DIRECTIONS FOR USE - Use only as directed.

NOTICE TO USER: This agricultural remedy is to be used only in accordance with the instructions on the label. It is an offence under Act No. 36 of 1947 to use this agricultural remedy for any purpose or in any manner contrary to the directions on the label.

COMPATIBILITY

The compatibility of **MOCHACHO** with other products depends on the formulations of the respective products as well as on the quality of the spray water to be used. As formulations may change from time-to-time, it is recommended that a physical compatibility test be done to the tank mixture being made. **MOCHACHO** is compatible with METHOS (L11114). All WARNINGS, PRECAUTIONS, USE RESTRICTIONS and DIRECTIONS FOR USE on the product labels must be fully adhered to. Consult the relevant labels for full details.

MOCHACHO should not be mixed with products other than those specifically listed in this label.

USE RESTRICTIONS

- Do not apply **MOCHACHO** to poorly drained soils or soils with a compaction layer, as waterlogging and herbicide injury may occur.

- Heavy rain (25 mm per day or 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.
- **Do not apply MOCHACHO as a pre-emergence application on Maize.**
- **MOCHACHO** may cause damage to certain crops under the following conditions:
 - Inbred parent plants of maize hybrids. Consult with the seed company or your chemical supplier first.
 - Tobacco and forage sorghum planted on very sandy and/or gravelly soils or where flood irrigation is practised.
 - Grain sorghum and forage sorghum on soils with a high percentage (greater than 60%) fine sand and/or poor structure which are inclined to compact with rain, and which are therefore aerated, or 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.
 - Forage and Grain sorghum which has not been pre-treated with a suitably registered seed treatment to prevent phytotoxicity by acetanilide products.
- **MOCHACHO** can only be used on forage sorghum which are sorghum x sorghum hybrids and sorghum x Sudan grass hybrids. Hybrids with *Pennisetum* spp. and hybrids containing the BMR genes should not be sprayed with **MOCHACHO**.
- When **MOCHACHO** is applied to crops susceptible to soil-borne diseases such as drybeans or grain sorghum, the seed must be treated with effective fungicides to control seedling diseases.

Potential damage to triazine sensitive crops:

- The possibility of crop damage increases dramatically where triazines were applied previously and the soil has been treated with lime to correct the pH of the soil. Refer to the product labels of the specific triazine herbicides used.
- 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 following soil pH adjustment with lime. This restriction applies even if triazines were used at the crop rotation rates in previous years.
- Triazine sensitive crops include all broadleaf crops.
- Adherence to these warnings does not guarantee that no damage will be experienced to even the following maize crop as large volumes of previously applied triazines may now be available depending on the volume of lime applied as well as the rainfall experienced.

Potential for increased efficacy, phytotoxicity and residual action:

- Where the soil pH levels are increased above 7, conditions for increased efficacy and reduced selectivity may occur. Additionally, an increased soil pH may result in an increased soil residual action of certain herbicides, which may affect follow-up crops – especially those grown under irrigation.
- In soils where pH adjustments have been carried out, caution must be exercised where sulphonyl urea herbicides, triazolopyrimidine sulfonanilide herbicides and imidazolinone herbicides, which are all sensitive to soil pH fluctuations, have been, or are expected to be used.

Contact your agrichemical representative to determine suitable crop rotation and weed control programmes prior to making any soil pH adjustments.

- If **MOCHACHO** is used in a tank mix with other recommended remedies, consideration should be given to the restrictions of those respective products.
- Do not apply **MOCHACHO** to any crop or situation not mentioned in this instruction leaflet.
- Only apply **MOCHACHO** using an accurate and safe application technique.
- Do not apply this product in combination or tank mixture with any other product or agricultural remedy which is not specifically listed on this label. Novagen Innovations (Pty) Ltd t/a Agri Novagenix accepts no responsibility for any negative effects experienced if the instructions on this label are not adhered to, unless an Agri Novagenix representative was consulted beforehand.
- By buying this product, the buyer undertakes that the user is fully aware of and suitably trained on the hazards associated with the preparation and use of this product. By selecting this product voluntarily, the user assumes responsibility for his or her own personal protection whilst storing, mixing, and applying the product in the approved manner according to the instructions for use. The user also confirms to have consulted the SDS of this product and he/she is aware of the potential health hazards which could arise out of use and misuse of this product. Users are encouraged to keep records of all procedures followed and which personal protection equipment was used at all times. All personal protection equipment used must be kept clean and in good working order according to the manufacturer's specifications. Novagen Innovations (Pty) Ltd accepts no responsibility for any adverse effects experienced if the instructions on this label are not adhered to or resulting from improper use of this product or the use of unsuitable personal protection equipment. The user has selected to use this product at his/her own free will and risk.

MIXING INSTRUCTIONS

Half-fill the spray tank with suitable water. Add the required quantity of **MOCHACHO** slowly to the spray or mixing tank while agitating. Fill the spray tank to the required volume with suitable water while maintaining agitation. Ensure continuous agitation throughout the mixing and spraying operation. Should agitation be suspended for longer than 5 minutes, the spray mixture must first be re-suspended before spraying is commenced.

Should tank mixtures with other products be made, follow the respective manufacturer's label recommendations. Should tank mixtures be made, the following mixing sequence should be adhered to when adding to the spray water in the mixing or spraying tank:

1. Fill the spray tank to three quarters with clean water, then add the required quantity of the complementary herbicide to the spray water while maintaining constant agitation.
2. Continue to fill the spray tank with suitable, clean water, and add the required quantity of **MOCHACHO** to the spray tank just before it is filled.
3. Fill the spray tank to its maximum while maintaining constant agitation.

Ensure thorough and constant agitation of the mixture in the tank during mixing and application. Tank mixtures must be sprayed out immediately and not allowed to stand in the spray tank overnight. Spraying equipment must be thoroughly flushed out at the end of the spraying operation as described above.

Ensure that spray premixes and/or final spray mixtures are kept out of reach of children, uninformed persons, untrained personnel, unauthorised personnel and animals.

APPLICATION METHODS

Post plant pre-emergence

- 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.
- **MOCHACHO** must be applied within three days of planting (preferably at planting) onto a moist, fine, even, firm and freshly prepared weed-free seedbed free of weeds, trash and clods. Use 200 litres spray mixture per hectare for overall ground application, and 30 to 40 litres per hectare for aerial application.
- **MOCHACHO** must be shallowly incorporated into the soil early in the season, to ensure reliable weed control.
- 10 to 20 mm rain within 7 to 10 days after application is required 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 the soil.
- If soil crusting becomes a problem, rotary harrow in the same direction that the rows are planted, in order to assist crop germination.
- Harrowing after application may however reduce weed control if untreated soil is thrown into deep planter furrows.
- When planting into dry soil (where moisture is insufficient for germination), **MOCHACHO** must be applied as close to, but definitely before, the first rain. Emerged weeds at the time of application will not be controlled.

Post-emergence application (maize and potatoes)

MOCHACHO has a very limited post-emergence effect. It may, however, be applied post-emergence to the crop immediately after a cultivation i.e., where no weeds are present. Weeds that are present after the cultivation will not be controlled.

GROUND APPLICATION

- **MOCHACHO** may be applied with any medium or high volume sprayer properly calibrated, and which is equipped with an efficient agitation mechanism. The 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 **MOCHACHO** should be applied in at least 200 ℓ water/ha.

AERIAL APPLICATION

Notify all inhabitants of the immediate area to be sprayed and issue the necessary warnings. Do not spray over or allow drift to contaminate adjacent areas or water. Please refer to the SANS Code of Practice for the aerial application of agricultural chemicals.

Aerial application of **MOCHACHO** may only be performed 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). 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:

- Volume: A minimum volume of 30 ℓ (pre—emergence) and 35 ℓ (post-emergence) spray mixture per ha is recommended. As this product has not been evaluated at a reduced volume rate, the registration holder cannot guarantee efficacy nor be held responsible for any adverse effects if this product is applied aerially at a lower volume rate than recommended.
- Droplet coverage: The following number of droplets per cm² must be recovered at the target area: Pre-emergence - 20 to 30. Post-emergence - 30 to 45.

- **Droplet size:** The following droplet spectra are recommended: Pre-emergence- VMD of 350 to 400 microns. Post-emergence - VMD of 350 to 400 microns. Limit the production of fine droplets less than 150 microns (high drift and evaporation potential) to a minimum.
- **Flying height:** Maintain the height of the spray boom at 3 to 4 metres above the target. Do not spray when aircraft dives, is in a climb or when banking.
- Use suitable atomising equipment that will produce the desired droplet size and coverage, but which will ensure the minimum loss of product. The spraying system must produce a droplet spectrum with the lowest possible Relative Span.
- Position all the atomisers 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 kilometres per hour.
- Stop spraying under turbulent, unstable and dry conditions during the heat of the day.
- 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:
 - 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 drifting of the suspended spray cloud away from the target field.
- Ensure that the aerial spray operator knows exactly which fields to spray.

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

APPLICATION THROUGH CENTRE PIVOT IRRIGATION SYSTEM

- **MOCHACHO** may be applied in irrigation water pre-emergence (after planting but before the weeds or crops emerge)
- Use only centre pivot systems that apply water uniformly. Prepare a mixture with a minimum of one part herbicide to one part water and inject this mixture into the centre pivot system using a positive displacement pump. Injecting a larger volume of a more diluted 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 (25 mm) 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.
- Make sure that the chemigation system is a purpose-designed, calibrated centre pivot irrigation system, equipped with an injector system which is in good working order.
- Contamination of boreholes or dams by means of spillages of chemicals in the irrigation system **must** be avoided. The injector pump, as well as the water pump, must be equipped with valves to stop injection the moment the pivot stops moving forward. It is recommended to inject the chemicals at the centre or as close as possible. The main water supply line must also be equipped with a non-return valve in order to avoid treated water from flowing back into the supply source.
- Determine the correct injection rate and confirm that it is correctly injected by the system.
- Avoid over dosing and possible crop damage by monitoring the overlap area at the end of the cycle.
- Avoid over application of the chemicals due to breakages or stoppages during application through the centre pivot system.

APPLICATION RATES

1. GROUNDNUTS, BEANS (DRY BEANS, GREEN BEANS, KIDNEY BEANS AND SOYBEANS), COTTON, SUNFLOWERS, AND LUPINS

Table 1: MOCHACHO recommendations for use in broadleaf crops as listed above

Soil type	% Clay	MOCHACHO (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/Sandy clay	> 30	1.0 – 1.3

NOTE:

- The higher application rates of **MOCHACHO** are recommended for the control of yellow nutsedge (*Cyperus esculentus*) and Crabfinger-grass (*Digitaria sanguinalis*) and also on soils with > 1.0 % organic matter.

2. POTATOES (summer rainfall region only) (Post-emergence)

Table 2: MOCHACHO applied post-emergence in Potatoes

Soil type	MOCHACHO (ℓ/ha)
All soil types	1.2

NOTE

- 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.
- MOCHACHO** can also be applied post-emergence to the potatoes after ridging. Under these circumstances a directed application is preferable although not essential.

3. MAIZE (Post-emergence)

i) Residual grass control

MOCHACHO applied post-emergence may prolong residual grass control after a pre-emergence application of s-metolachlor 915EC. The **MOCHACHO** application must be made after a thorough cultivation as emerged grass weeds will not be controlled.

Table 3: MOCHACHO applied post-emergence in Maize

Soil type	% Clay	MOCHACHO (ℓ/ha)
Sand	0 - 10	0.35
Loamy sand/Sandy loam	11 - 20	0.3
Sandy clay loam	21 - 30	0.35
Sandy clay loam/Sandy clay	31 - 40	0.35 – 0.5
Sandy clay/Turf	41 - 50	0.35 – 0.5

NOTE

- The higher dosage rate of **MOCHACHO** may be used if grass weeds have started to emerge at the time of the post-emergence application.

4. GRAIN- AND FORAGE SORGHUM

MOCHACHO can be used in grain and forage sorghum provided that the seed has been correctly pre-treated, as prescribed, with a suitable, registered seed treatment to prevent phytotoxicity by **MOCHACHO**.

Table 4: MOCHACHO applied pre-emergence in sorghum following seed treatment

Soil type	% Clay	MOCHACHO (ℓ/ha)
Sand/Loamy sand/Sandy loam	0 – 20	Not recommended
Sandy clay loam	21 - 30	0.8
Sandy clay	31 - 40	1.0
Turf	>40	1.0 – 1.3

NOTE:

- The application rate of 2.0 litres per hectare is recommended on turf soils (>40% clay) for the improved control of sweet signal grass and yellow nutsedge.
- Use the higher application rates of **MOCHACHO** where heavy infestations of *Digitaria sanguinalis* (crab fingergrass) exist.
- If grain and forage sorghum seed are not properly pre-treated with a suitable seed treatment to prevent phytotoxicity by **MOCHACHO**, **MOCHACHO** will cause severe injury to the crop.
- Prevent the formation of a soil crust through a shallow cultivation as soon as possible.
- Very wet conditions during the first 4 to 6 weeks following application of **MOCHACHO** may damage the sorghum, however this is normally outgrown without any detrimental effect on the crop yield.
- The presence of seedling diseases may result in **MOCHACHO** damage to the sorghum.

5. SUGARCANE

Pre-emergence application:

Table 5: MOCHACHO pre-emergence application in sugarcane

Dosage rates and tank mixtures	Remarks
MOCHACHO 1.0 – 1.6 ℓ/ha	Apply higher rates if clay content > 35 %, to improve control of <i>Panicum maximum</i> and <i>Cyperus esculentus</i> and for longer residual control.
MOCHACHO 2.0 ℓ/ha	Apply on soils with > 35 % clay and > 1 % organic matter.
MOCHACHO as above followed post-emergence by MCPA 400 SL or 2,4-D Amine 480 SL	Consult the relevant MCPA 400 SL or 2,4-D Amine 480 SL labels for the complete particulars.

6. TOBACCO (Summer rainfall region only)

Apply **MOCHACHO** within 3 days after transplanting while the plants are still wilted. When the tobacco is turgid, the spray must be directed in order to prevent it from entering the funnel, where the growing point may be damaged. If actively growing leaves are sprayed, scorching may occur. If **MOCHACHO** is sprayed on gravelly or soils with less than 10 % clay, the spray should be directed at least 10 cm on both sides away from the plant row in order to prevent leaching to the root zone of the tobacco.

Existing weeds must be removed before **MOCHACHO** is applied. This may be done mechanically, by hand or by application of a suitably registered herbicide immediately before transplanting. Any growing weeds present at the time of application of **MOCHACHO** will not be controlled.

Where tobacco is planted on ridges, use 110° nozzles and position the nozzles between the ridges. This will ensure an even distribution of the herbicide.

In order to activate the **MOCHACHO**, overhead irrigation of at least 10 mm, but not more than 15 mm (on soils with less than 35.0% clay) and at least 20 mm, but not more than 30 mm (on soils with greater than 35.0% clay), should be applied within 2 – 3 days following the **MOCHACHO** application.

Table 6: MOCHACHO application rates in Tobacco

Soil type	% Clay	MOCHACHO (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

NOTE

- Only strong and healthy plants should be transplanted.
- Tobacco should be properly transplanted. Roots that are exposed to **MOCHACHO** at application will result in adversely affected plants.

7. FORESTRY

Table 7: MOCHACHO application rates in forestry applications

Soil type	% Clay	MOCHACHO (ℓ/ha)
Sand/Loamy sand/Sandy loam	0 – 20	1.0
Sandy clay loam	21 – 30	1.3
Sandy clay loam/Sandy clay	> 30	1.6 – 2.0

NOTE

- Apply the higher rate where the soil organic matter content exceeds 1.0%.
- Apply **MOCHACHO** on a well-prepared weed-free seedbed immediately following transplanting of the young trees.
- Where grass weeds are present at the time of planting it is recommended to remove these weeds by mechanical or chemical means, prior to planting to create a pre-emergence situation for **MOCHACHO** to act effectively.
- Where grass weeds are present after planting of the trees, follow the **MOCHACHO** application one week later with an application of a registered grass killer as recommended.

WEEDS CONTROLLED:

Weeds normally controlled by MOCHACHO

Scientific name	Common name
<i>Bidens pilosa</i>	Blackjack
<i>Brachiaria eruciformis</i>	Sweet signal grass
<i>Chloris virgata</i>	Feathertop Chloris
<i>Digitaria sanguinalis</i>	Crab finger grass
<i>Echinochloa crusgalli</i>	Barnyard grass
<i>Eleusine indica</i>	Goose grass
<i>Panicum maximum</i>	Common buffalo grass
<i>Panicum schinzii</i>	Sweet buffalo grass

<i>Setaria verticillata</i>	Sticky bristle grass
<i>Urochloa panicoides</i>	Herringbone grass

The control of the above-mentioned weeds may be adversely affected under the following conditions:

- A poorly prepared seedbed.
- Soil with a p (H₂O) of less than 5.0 and an organic matter content of more than 3%.
- Dry conditions directly following application or a lack of sufficient rain on heavy soils.
- Occurrence of soil erosion as a result of excessive rain, irrigation or wind erosion can result in poor weed control.

Weed species that were not present during the development trials of the product could possibly also be controlled to a greater or lesser degree. The registration holder does not accept any responsibility for unlisted weeds

ACKNOWLEDGEMENT OF TRADEMARK

METHOS (L11114)

Agritech Bioscience (Pty) Ltd t/a Carabiner