

# TouchdownForte®

Hi Tech

syngenta®

Reg. No. L7305 Act No. 36 of 1947 N-AR 0625 (Namibia) W130339 (Botswana)

A soluble concentrate, non-selective, foliar, systemic herbicide with a wetting agent for use in glyphosate tolerant crops and for the control of a wide range of annual- and perennial grasses, broadleaf weeds, certain woody perennials and industrial weed control.

GROUP 9 HERBICIDE

**Active Ingredients:**  
Glyphosate (glycine)..... 500 g acid equivalent/ (potassium salt)



**Hazard statement:**

Toxic to aquatic life with long-lasting effects. May be harmful if inhaled.

**Precautionary statements:**

Keep out of reach of children.

**Prevention:** Avoid release to the environment.

**Response:** Collect spillage.

**Storage:** Store locked-up.

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

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

UN NOT REGULATED

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WARNING

Registration holder  
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## 1. WARNINGS:

**Hazard statement:** Toxic to aquatic life with long-lasting effects. May be harmful if inhaled.

### Waiting period:

- Do not transplant seedlings within 7 - 10 days after the last **TOUCHDOWN FORTE HITECH** application.
- The germination and growth of small seeded crops e.g., onions can be reduced significantly up to eight (8) weeks after application on soils with a very low clay content (< 10% clay).

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

**GREEN MEALIES**..... 42 days  
**MAIZE** (grazing)..... 28 days

- Harmful if swallowed or inhaled.
- Avoid contact with skin or eyes since product is an eye-irritant and may cause skin sensitisation.
- Store away from food, feed, fertilisers and other chemicals.
- Keep out of reach of children, uninformed persons and animals.
- Flammable:** Keep away from heat and flames.
- Re-entry:** Do not enter treated area until spray deposit has dried unless wearing protective clothing.

### Transgenic and conventional crops:

Care should be taken to reduce drift of **TOUCHDOWN FORTE HITECH** to an absolute minimum. **TOUCHDOWN FORTE HITECH** can cause serious damage to adjacent crops. This is especially important when **TOUCHDOWN FORTE HITECH** is used on glyphosate tolerant crops with conventional crops adjacent or even in the vicinity.

### Aerial application: (Only aquatic and invader plants).

- Notify all inhabitants in the immediate vicinity of the area to be sprayed and issue the necessary warnings. Do not spray over, or allow accidental drift to contaminate water or adjacent areas. However, aerial application is only

recommended for the control of aquatic and invader weeds despite of them growing in water bodies.

- Glyphosate is a highly active herbicide, that, in very small quantities can cause serious damage to crop seedlings, deciduous fruit trees and grapevines during the budding and early season growth stages. Under the following conditions it can cause serious damage as far as 3 - 5 kilometers from the nearest flight path of the aircraft:
  - Cloudy weather.
  - Relative humidity above 80%.
  - Low air movement of less than 5 km per hour.
- Where such conditions prevail aerial application should not be carried out where crop seedlings, or deciduous fruit and grapevines in budding or early development stages are present within five (5) kilometers of the nearest flight path of the aircraft.

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

## 2. PRECAUTIONS:

**Precautionary statements:** Keep out of reach of children.  
**Prevention:** Avoid release to the environment. **Response:** Collect spillage. **Storage:** Store locked-up. **Disposal:** Dispose of contents/container to an approved waste disposal plant.

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

- Wear rubber gloves and a face shield when handling the concentrate. If you get it in your eyes, flush it out at once. If you get it on your skin, wash it off at once. If you spill it on your clothes, change and wash them.
- Invert the empty container over the spray or mixing tank and allow to drain for at least 30 seconds after the flow has slowed down to a drip. Thereafter, rinse the container three (3) times with a volume of water equal to a minimum of 10% of that of the container. Add the rinsate to the contents of the spray tank before destroying the container in the prescribed manner.
- While spraying, avoid contact with the spray as much as you can. Avoid spray drift onto other crops, grazing rivers, or dams.
- Clean applicator thoroughly after use and dispose of wash water where it will not contaminate crops, grazing, rivers, or dams. Destroy empty container in the prescribed manner and do not use for any other purpose.
- Change and wash your work clothes. Wash yourself.

### 3. RELEVANT SUBSTANCES:

|                       |                              |
|-----------------------|------------------------------|
| <b>Chemical name</b>  |                              |
| <b>Not applicable</b> |                              |
| <b>Classification</b> | <b>Concentration (% w/w)</b> |
| <b>Not applicable</b> | <b>Not applicable</b>        |

### 4. RESISTANCE MANAGEMENT:

**TOUCHDOWN FORTE HITECH** is a group code 9 herbicide. Any weed population may contain individuals naturally resistant to **TOUCHDOWN FORTE HITECH** and other group code 9 herbicides. The resistant individuals can eventually dominate the weed population if these herbicides are used repeatedly and exclusively in programs. These resistant weeds may not be controlled by **TOUCHDOWN FORTE HITECH** or any other group code 9 herbicides.

#### To delay herbicide resistance:

- Avoid exclusive repeated use of herbicides from the same herbicide group code. Alternate or tank mix with products from different herbicide group codes. Refer to individual product labels when alternating products or when using tank mixtures.
- Integrate other control methods (chemical, cultural, biological) into weed control programs.
- Follow a sound crop rotation system wherein different herbicides from different herbicide mode of action classes can be used e.g., follow glyphosate tolerant maize with conventional soybeans in order to satisfy the requirement for crop rotation and the avoidance of repeated use of glyphosate.
- All cultivation of fields should be done to prevent weeds from flowering and seedling.
- Maintain herbicide-use records for each field.
- Prevent movement of resistant weed seeds and vegetative material to other fields by cleaning harvesting and tillage equipment and planting clean seed.
- Inspect each land annually in order to identify the development of resistance early.
- Populations of *Conyza bonariensis*, *Lolium rigidum* and *Plantago lanceolata* have already been identified and reported with known resistance against glyphosate

containing herbicides. Avoid spraying such populations with **TOUCHDOWN FORTE HITECH**.

- Due to the fact that these resistance populations vary in size and localities and are difficult to ascertain; it is essential that each field must be inspected annually to identify possible resistance early. If the preventative measures discussed above are not strictly adhered to SYNGENTA cannot be held responsible for the failure of **TOUCHDOWN FORTE HITECH** to control resistant weeds.
- Always use **TOUCHDOWN FORTE HITECH** as part of an integrated crop- and resistance management program (strategy) in order to prevent weed resistance.
- This crop- and resistance management strategy should always include sequences with herbicides of alternative modes of action.
- **TOUCHDOWN FORTE HITECH** should not be used more than three (3) times a year per field. If it becomes necessary to spray escapee target plants, use herbicides from another chemical class.
- To control and eliminate resistant or possible resistant weeds the aim should be a total prevention of seeding these biotypes.
- **TOUCHDOWN FORTE HITECH** should be used as a tool to manage weed populations in order to prevent or delay resistance to products of various chemical classes and control various levels of resistance to different products and chemical classes.

A local farm strategy for preventing and managing possible resistance or actual resistance should be adopted. For specific information on resistance management contact the registration holder of this product.

### 5. DIRECTIONS FOR USE: Use only as indicated.

- **TOUCHDOWN FORTE HITECH** should only be applied to actively growing weeds that are not dormant or under temperature, moisture, or any other stress. Rain or irrigation a few days prior to a **TOUCHDOWN FORTE HITECH** application ensures that weeds are actively growing, resulting in optimum efficacy. Weeds growing during a stress period might seem small however, it could have completed its biological growth phase and by should therefore be treated as a mature weed when selecting dosage rates. The same apply to plants that have been grazed, cut, burned or even sprayed once with **TOUCHDOWN FORTE HITECH** or any other herbicide.
- Use only clean water with no suspended soil particles in the spray mixture.
- Always ensure that spray equipment is clean, free from all sediments, rust or dust and correctly calibrated before spraying.
- Use a low spray pressure (100 - 200 kPa) and the correct nozzles to avoid spray drift.
- Ensure even coverage of all weeds under application and apply to incipient runoff.
- When using **TOUCHDOWN FORTE HITECH** for chemical seedbed preparation for transplanted tomatoes, tobacco or any transplanted crop with green, soft stems, allow a minimum of 14 days between application and transplanting of seedlings.
- **TOUCHDOWN FORTE HITECH** is actively absorbed through immature bark and leaves of most plants and trees. Contact with immature bark, such as in trees



younger than three (3) years, can result in serious localised or translocated damage. Therefore, contact with leaves, green, or immature bark and fruit of desired plants, whether direct or by spray drift, must be avoided. Always make sure that only undesired plants are treated.

- Do not spray onto pruned vines or fruit trees until wounds have sealed properly.
- **TOUCHDOWN FORTE HITECH** is a non-selective systemic herbicide and is only active when applied to the foliage and green bark of plants. The visible effect of **TOUCHDOWN FORTE HITECH** on treated foliage usually appears at 7 - 10 days after treatment but may vary according to weather conditions.
- Rain or irrigation within three (3) hours of application can reduce the efficacy of **TOUCHDOWN FORTE HITECH**.
- Do not spray on weed foliage covered with a layer of dust. In these situations apply after recent rain.
- Do not apply **TOUCHDOWN FORTE HITECH** to weeds that are covered with dew, or in a dormant growth phase or under stress conditions e.g., moisture, heat, or cold stress.
- Do not apply **TOUCHDOWN FORTE HITECH** when the atmospheric conditions are less favourable e.g., the humidity is less than 40% or the wind speed is more than 10 km/h.
- Pesticide runoff onto **TOUCHDOWN FORTE HITECH**-treated weeds under trees in orchards can adversely affect the herbicide's activity. Do NOT spray other pesticides within 12 hours of a **TOUCHDOWN FORTE HITECH** application. **TOUCHDOWN FORTE HITECH** has no pre-emergence activity, therefore repeat applications are necessary (when applied on its own) to control weeds germinating from seed. Ensure that target weeds are fully-exposed to the **TOUCHDOWN FORTE HITECH** spray.
- **TOUCHDOWN FORTE HITECH** can be applied on glyphosate tolerant cotton, soybean and maize plants. Any individual plants that do not contain the glyphosate tolerant gene would die when sprayed with glyphosate based products e.g., **TOUCHDOWN FORTE HITECH**.
- **TOUCHDOWN FORTE HITECH** will not control volunteer glyphosate tolerant crops.
- Inconsistent and variable control of weeds even at high rates may be experienced due to a number of reasons namely drought stress; cold or heat stress; plants with waxy layers e.g., *Portulaca oleracea*, *Chenopodium album*, *Giselia pharnecoides*; natural resistance to glyphosate-based products e.g., *Commelina bengalensis*, *Ipomoea* spp. and *Conyza bonariensis*; acquired resistance due to the repeated use of glyphosate e.g., *Lolium* spp. and *Conyza bonariensis* (confirmed resistance in the RSA); poor coverage and penetration of exposed leaves e.g., *Argemone subfusiformis*; plants with bulbs and tubers e.g., *Cyperus* spp.; inconsistent relationship between above soil parts and below soil parts e.g., *Conyza bonariensis* after dry periods or growth during the winter and poor water quality.

### 5.1 Compatibility

**TOUCHDOWN FORTE HITECH** is compatible with CALLISTO (L6795), DUAL GOLD (L5749), METAGAN GOLD (L5748), GARDOPRIM PLUS GOLD (L7736), KARATE (L3752), KARATE ZEON (L6330), tebuthiuron and diuron. Consult the various labels for DOSAGE RATES, WARNINGS and PRECAUTIONS.

### Adjuvants:

- The addition of 0.5 - 2% ammonium sulphate in tank mixtures will enhance the efficacy of **TOUCHDOWN FORTE HITECH** when using poor quality water or water of an unknown quality. For optimal weed control ammonium sulphate should be used at all times.
- **TOUCHDOWN FORTE HITECH** may not be mixed or used with any other adjuvant other than ammonium sulphate. The use of other adjuvants could lead to reductions in activity for which the registration holder would not accept any responsibility.

### Atrazine:

- **TOUCHDOWN FORTE HITECH** is not compatible with any atrazine-containing product and should not be tankmixed with any such products. Such mixtures would result in poor control of weeds.

### 5.2 Spraying Equipment

- All spray equipment must be properly calibrated and fitted with nozzles that deliver the correct volume of spray mixture in order to reach the spray target while covering the target evenly with droplets.
- The following equipment and corresponding volume spray mixture/ha is suitable for **TOUCHDOWN FORTE HITECH** applications (Consult the mobile application Cropwise Spray Assist):

|  |                |
|--|----------------|
| Tractor boom sprayers                              | 100 - 300 ℓ/ha |
| Knapsack sprayers                                  | 100 - 300 ℓ/ha |
| Aerial<br>(only aquatic and invader plant control) | 30 - 40 ℓ/ha   |

- The percentage solution spray recommendations refers to a solution made up of **TOUCHDOWN FORTE HITECH** in 100 ℓ water e.g., 2% solution = 2 ℓ **TOUCHDOWN FORTE HITECH** in 100 ℓ water.
- **NOTE:** When spraying with such a solution, the minimum application rate is 200 ℓ spray mixture/ha.

### 5.3 Mixing Instructions

- If ammonium sulphate is required, it should be added to the spray water first.
- Agitate the water until the ammonium sulphate is dissolved. Then add the required quantity of **TOUCHDOWN FORTE HITECH**.
- Ensure thorough agitation while mixing the spray mixture. Agitation must be continuous before and during spraying.
- When using tank mixes with residual herbicides in glyphosate tolerant crops, mix the EC formulations first into the water, then the SC formulations and only then the **TOUCHDOWN FORTE HITECH** while continuous agitation is taking place.

**Clean-up procedure:** To avoid subsequent injury to crops, clean application equipment and protective equipment thoroughly immediately after spraying by thoroughly flushing with water.

### 5.4 Application

- Always ensure that spray equipment is clean and free of

rust and dust.

- Remove sediments e.g., residues of wettable powder pesticides, from spray tanks before use.
- Always use clean water.
- Avoid the use of brack or muddy water, or water with a high colloidal content derived from soils high in organic matter.
- Correctly calibrate all sprayers under field conditions prior to application.
- It is not necessary to spray to the point of runoff, but essential to ensure complete coverage of the target weed.
- Even application is essential for good results.

#### 5.4.1 Ground application

**TOUCHDOWN FORTE HITECH** can be applied with conventional ground equipment (tractor mounted booms, knapsack, etc.) Optimum spray deposits are obtained with ground equipment calibrated to spray 100 - 300 ℓ/ha with suitable nozzles to ensure adequate coverage. Where drift is a problem do not exceed 2 bar. Use only the pressures recommended for specific nozzles to avoid drift.

#### 5.4.2 Aerial application

(Only aquatic and invader plant control)

Aerial application of this product may only be done by a registered aerial application operator using a correctly calibrated, registered aircraft according to the instructions of SANS 10118 (Aerial Application of Agricultural Remedies). It is important to ensure that the spray mixture is distributed evenly over the target area and that the loss of spray material during application is restricted to a minimum. It is therefore essential that the following criteria are met:

a) Application parameters:

- **Volume:** A volume of 30 ℓ/ha is recommended. As this product has not been evaluated at a reduced volume rate, the registration holder cannot guarantee efficacy or be held responsible for any adverse effects if the product is applied aerially at a lower volume rate than recommended above.
- **Droplet coverage:** A droplet coverage of 30 - 45 droplets per cm<sup>2</sup> must be recovered at the target.
- **Droplet size:** A droplet spectrum with a VMD of 300 - 350 microns is recommended. Ensure that the production of fine droplets (less than 150 microns - high drift and evaporation potential) is restricted to a minimum.
- **Flying height:** The height of the spray boom should be maintained at 3 - 4 metres above the target. Do not spray when aircraft is in a climb, at the top, during a dive, or when banking.

b) Equipment:

- Use suitable atomising equipment 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 - 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. Do not spray when the relative humidity is less than 40%.
- Stop spraying if the wind speed exceeds 10 km/h.
- Aerial application with 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.

**General:** Do not spray plants covered with a thick layer of dust.

**Obtain assurance from the aerial spray operator that the above specifications will be met.**

#### 5.5 Application Rates

- **TOUCHDOWN FORTE HITECH** will control most emerged annual weeds germinating from seed in situations such as fallow land, preplant of crops, reduced or conservation tillage, perennial vine and tree crops and industrial areas.
- Apply the **TOUCHDOWN FORTE HITECH** dosage rate according to the weed growth stage: The higher dosage rates within the range should be used when the weeds are older and more established in the specific growth stage. The dosage rates under industrial weed control apply to that sector only.

### 1. CONTROL OF NOXIOUS AND TROUBLESOME WEEDS

#### 1.1 NOXIOUS WEEDS AND INVADER PLANTS

| Botanical name<br>Common name/<br>algemene naam                         | Remarks  | Dosage rate |          |
|---|--|-------------|----------|
|   |  | ℓ/ha        | Solution |
| <i>Acacia mearnsii</i><br><b>black wattle/</b><br>swartwattel           | Apply in summer to young trees from 0.1 - 2 m high.  | 2 ℓ         | 1%       |
| <i>Acacia saligna</i><br><b>Port Jackson willow/</b><br>goudwilger      | Apply in autumn or spring.<br><b>Seedlings only:</b><br>Bipinnate leaf stage:<br>1.3 ℓ/ha.<br>Up to 60 cm high:<br>2.6 ℓ/ha. | 1.3 ℓ       | 1%       |
| <i>Caesalpinia decapetala</i><br><b>Mauritius thorn/</b><br>kraaldoring | Apply by knapsack sprayer during summer.   | 2 ℓ         | 1%       |
| <i>Chromolaena odorata</i><br><b>paraffin weed/</b><br>paraffienbos     | Slash re-growth in winter if necessary. Apply in summer to new growth when more than 0.5 m high.                             | -           | 0.7%     |



**NOXIOUS WEEDS AND INVADER PLANTS cont.**

| Botanical name<br>Common name/<br>algemene naam   | Remarks  | Dosage rate |            |
|---|--|-------------|------------|
|   |  | ℓ/ha        | Solution   |
| <i>Convolvulus arvensis</i><br><b>field bind-weed/</b><br>akkerwinde                      | Apply in summer at onset of flowering. If re-growth occurs spray with 1% solution.   | 4 ℓ         | -          |
| <i>Lantana camara</i><br><b>common Latana/</b><br>gewone Latana                           | Slash large bushes in winter if necessary. Apply on active growth in summer.   | 4 ℓ         | 2%         |
| <i>Opuntia ficus-indica</i><br><b>prickly-pear/</b><br>turksvy                            | <b>For trees with 20 - 250 cladodes:</b><br>Drill 4 - 12 holes in stem and inject 3 ml of a 22% solution per hole.   | -           | 22%        |
| <i>Phytolacca heptandra</i><br><b>ink berry/</b><br>inkbossie                             | Apply in summer by knapsack sprayer.   | 2 ℓ         | 1%         |
| <i>Plantago lanceolata</i><br><b>narrow-leaved</b><br><b>ribwort/</b><br>smalweëblaar     | Apply in spring before flowering.  | 2 ℓ         | 1%         |
| <i>Rubus cuneifolius</i><br><b>American</b><br><b>bramble/</b><br>Amerikaanse<br>braambos | Slash rank growth in winter. Apply in autumn or summer when new growth is more than 0.5 m high. If re-growth occurs, spray with 1% solution.   | 4 ℓ         | 2%         |
| <i>Sesbania punicea</i><br><b>red Sesbania/</b><br>rooi Sesbania                          | <b>Seedling plants less than 1 m high:</b><br>Use 1% solution.<br><b>Tall shrubs:</b> Slash, spray re-growth with 1 - 1.3% solution at 1 m high.   | 2 ℓ         | 1%         |
| <i>Solanum mauritanium</i><br><b>bugweed/</b><br>luisboom                                 | Apply in spring or summer.<br><b>Large trees:</b> Cut to 50 cm, allow new growth of at least 50 cm before application.<br><b>Saplings:</b> Apply directly to foliage.  | 1.3 ℓ       | 1%         |
| <i>Prosopis</i> spp.<br>(e.g., <i>Prosopis glandulosa</i> )                               | <b>Control of vegetative growth and reproduction processes</b><br><b>Mesquite seedlings and coppice</b><br><i>Prosopis</i> of Suidwes doring saaiïnge en stomp hergroei  |             |            |
|   | <b>Foliar applications</b><br>Apply in mid summer (January - March) after good rains when <i>Prosopis</i> spp. are actively growing.<br>Apply to seedlings 1 - 2 m high. Seedlings should be actively growing and should not show any signs of wilting or any other stress. The seedlings should be well-foliated before spraying.<br>Foliar applications will control <i>Prosopis</i> spp. for one (1) year [one (1) season]. | -           | 3.5 - 6.6% |

|  |   |                    |            |
|--|---|--------------------|------------|
| Povision should be made to treat subsequent escapes, coppice developments and new seedlings in the following year.   |   |                    |            |
| <b>Coppice applications</b><br>Coppice should not exceed 1 m heights. The coppice should be well-foliated before spraying. The coppice should be actively growing and should not show any signs of wilting or any other stress. Care should be taken to wet the coppice thoroughly on the outside as well as on the inside of the canopy.  |   | -                  | 3.5 - 6.6% |
| <i>Prosopis</i> spp.<br>(e.g., <i>Prosopis glandulosa</i> )  | <b>Mesquite</b><br>( <i>Prosopis</i> of Suidwes doring) | <b>Dosage rate</b> |            |
|  |   | ℓ/ha               | Solution   |
| <b>Aerial applications</b><br>Apply in mid summer (January - March) after good rains when <i>Prosopis</i> spp. are actively growing.<br>Applications should be done in at least 30 - 40 spray volume/ha.<br>Follow-up applications owing to the reproductive and growth habit of the weed, could be necessary between 2 - 3 years after the initial application. These follow-up applications will be necessary due to re-growth where insufficient coverage was achieved and re-germination from the seedbed. Follow-up spot treatments should be done with a 3% solution.<br><b>General</b><br>The disturbance of the soil owing to removal of dead trees may lead to the germination of new seedlings.<br><b>TOUCHDOWN FORTE HITECH</b> does not offer any residual herbicidal action.<br><ul style="list-style-type: none"> <li>A coarse spray should be used.</li> <li>The optimum application time is when leaves have matured usually during January - March (do not apply on the light green young leaves in early spring and summer as leave drop would take place and no translocation to the roots).</li> <li>Avoid applications during the mid-day leaf closure period.</li> <li>Warning: Do not use ammonium sulphate in application on <i>Prosopis</i> spp.</li> </ul> |   | 10 ℓ/ha            | -          |

**1.2 PERENNIAL GRASSES**

| Botanical name<br>Common name/<br>algemene naam                                  | Remarks  | Dosage rate |          |
|--|--|-------------|----------|
|  |  | ℓ/ha        | Solution |
| <i>Cynodon dactylon</i><br><b>common couch/</b><br>gewone kweekgras              | <b>Summer rainfall region</b><br>Apply to active growth in autumn or summer. If re-growth occurs, spray with 1.65% solution. | 4 ℓ         | -        |
|  | <b>Winter rainfall region</b><br>Apply as above in autumn.   | 6 ℓ         | -        |
| <i>Eragrostis curvula</i><br><b>weeping love</b><br><b>grass/</b><br>oulandsgras | Apply to active growth in summer or autumn.  | 1.3 ℓ       | 1%       |

**PERENNIAL GRASSES** cont.

| Botanical name<br>Common name/<br>algemene naam  | Remarks   | Dosage rate |          |
|--|---|-------------|----------|
|  |   | ℓ/ha        | Solution |
| <i>Eragrostis curvula</i><br><b>weeping love grass/</b><br>oulandsgras                                     | Applications to established tufts of weeping love grass could lead to poor control. Follow-up applications of 1% solutions would be necessary to control the re-growth. | 1.3 ℓ       | 1%       |
| <i>Paspalum dilatatum</i><br><b>common Paspalum/</b><br>gewone Paspalum                                    | Apply in summer at flower but before seed drop. If re-growth occurs, spray with 1% solution.  | 4 ℓ         | 2%       |
| <i>Paspalum paspalodes</i><br><b>couch Paspalum/</b><br>kweek Paspalum                                     | Apply in summer at flowering but before seed drop. If re-growth occurs, spray with 1.3% solution or 2.6 ℓ/ha. Apply the higher rate in the winter rainfall region.      | 5.3 - 6 ℓ   | -        |
| <i>Panicum maximum</i><br><b>common buffalo grass/</b><br>gewone buffelsgras                               | Apply in summer to actively growing plants. If re-growth occurs, spray with 1% solution.  | 2.6 ℓ       | 1.3%     |
| <i>Pennisetum clandestinum</i><br><b>kikuyu/</b><br>kikoejoe   | Apply in summer to actively growing plants. If re-growth occurs, spray with 1% solution.  | 2.6 ℓ       | 1.3%     |
| <i>Setaria megaphylla</i><br><b>bush buffalo grass/</b><br>bosbuffelgras                                   | Apply to actively growing plants in autumn or summer. If re-growth occurs, spray with 1% solution.  | 4 ℓ         | 2%       |
| <i>Sorghum halepense</i><br><b>Johnson grass/</b><br>Johnsongras   | Apply in summer or autumn. If re-growth occurs, spray with 1% solution.   | 2.6 ℓ       | 1.3%     |
| <i>Sorghum bicolor</i> subsp.<br><i>arundinaceum</i><br><b>common wildsorghum/</b><br>gewone wilde sorghum | Apply to actively growing plants in summer or autumn.   | 1.3 ℓ       | 1%       |
| <i>Stipa trichotoma</i><br><b>nassela tussock/</b><br>nassela polgras                                      | Apply in winter using high water volumes. If re-growth occurs, spray with 1% or 1.3% solution.  | 2.6 ℓ       | 1%       |

**1.3 AQUATIC WEEDS**

| Botanical name<br>Common name/<br>algemene naam | Remarks       | Dosage rate |          |
|---|---------------|-------------|----------|
|   |               | ℓ/ha        | Solution |
| <i>Eichornia</i>                                | <b>Ground</b> | 4 - 5.3 ℓ   | -        |

**AQUATIC WEEDS** cont.

|  |  |           |          |
|--|--|-----------|----------|
| <i>crassipes</i><br><b>water hyacinth/</b><br>waterhiasint                 | <b>application</b><br>Apply in summer on active growth in 500 - 800 ℓ water/ha. Follow-up applications may be necessary due to the reproductive and growth habit of the weed.<br><b>Aerial application</b><br>Apply in summer on active growth in 30 ℓ water/ha.   | 4 - 5.3 ℓ | -        |
| <i>Phragmites australis</i><br><b>common reed/</b><br>gewone fluitjiesriet | <b>Ground application</b><br>Apply in summer at 20 - 30% flowering in 1 000 - 1 500 ℓ spray mixture/ha. Use the lower rate if growing conditions are favourable. Follow-up applications may be necessary due to the reproductive and growth habit of the weed. Slash any re-growth, repeat at 0.5 m height with a 1.3% solution.<br><b>Aerial application</b><br>Apply in summer in 20 ℓ water/ha at early flowering stage on actively growing weeds. Follow-up applications may be necessary due to the reproductive and growth habit of the weed. To improve the coverage it is recommended that the application should be made with a split application from both directions. | -         | 1.3 - 2% |
|  |  | 10 ℓ      | -        |

**1.4 SEDGES**

| Botanical name<br>Common name/<br>algemene naam                     | Remarks   | Dosage rate |          |
|---|---|-------------|----------|
|   |   | ℓ/ha        | Solution |
| <i>Cyperus esculentus</i><br><b>yellow nutsedge/</b><br>geeluintjie | Apply in summer at pre-flowering stage. If re-growth occurs, spray with 1% solution or 2 ℓ/ha. (Best results in Feb/March). | 4 ℓ         | 2%       |
| <i>Cyperus rotundus</i><br><b>purple nutsedge/</b><br>rooiuintjie   | Apply in summer at pre-flowering stage. If re-growth occurs, spray with 1% solution or 2 ℓ/ha. (Best results in Feb/March). | 4 ℓ         | 2%       |

## 1.5 INDUSTRIAL WEED CONTROL

The rates indicated below are only applicable to industrial weed control.

| Botanical name<br>Common name/<br>algemene naam  | Remarks   | Dosage rate |          |
|--|---|-------------|----------|
|  |   | ℓ/ha        | Solution |
| <b>Perennial grasses:</b><br><i>Cynodon dactylon</i><br><b>common couch/</b><br>gewone kweekgras |   | 4 ℓ         | 2%       |
| <i>Cynodon nlemfuensis</i><br><b>stargrass/</b><br>reuse kweekgras of stergras                   | Apply to vigorous growing plants in summer or in autumn when nutrients are actively translocated to roots, rhizomes and stolons. Follow-up with 2.6 ℓ/ha (1.6% solution) if any re-growth occurs. | 4 ℓ         | 2%       |
| <i>Pennisetum clandestinum</i><br><b>kikuyu/</b><br>kikoejoe                                     | Spray on active growth in summer. Spray re-growth with 2 ℓ/ha or 1% solution.   | 2.6 ℓ       | 1.3%     |
| <i>Paspalum paspalodes</i><br><b>couch Paspalum/</b><br>kweek Paspalum                           |   | 4 ℓ         | 2%       |
| <i>Paspalum dilatatum</i><br><b>common Paspalum/</b><br>gewone Paspalum                          | Apply on active growing plants. Follow-up with half the recommended dosage rate if re-growth occurs.  | 4 ℓ         | 2%       |

## ANNUAL BROADLEAF WEEDS AND ANNUAL GRASSES

| Botanical name   | Common name<br>(algemene naam)   | Dosage rate |          |
|--|--|-------------|----------|
|  |  | ℓ/ha        | Solution |
| <b>Annual broadleaf weeds</b>  |  |             |          |
| <i>Amaranthus hybridus</i><br><i>Amaranthus spinosus</i><br><i>*Argemone subfusiformis</i> | <b>common pigweed</b><br>(Kaapse misbredie)<br><b>thorny pigweed</b><br>(doringmisbredie)<br><b>white flowered Mexican poppy</b><br>(witblom bloudissel) | 2.6 - 4 ℓ   | 1.3 - 2% |
| <i>Bidens bipinnata</i>  | <b>Spanish black jack</b><br>(Spaanse knapsekêrel)   |             |          |
| <i>Bidens pilosa</i>   | <b>black jack</b><br>(knapsekêrel)   |             |          |
| <i>Chenopodium album</i>   | <b>white goosefoot</b><br>(withondebossie)   |             |          |
| <i>Conyza floribunda</i>   | <b>tall fleabane</b><br>(springkaanbos)  |             |          |
| <i>Datura ferox</i>  | <b>large thorn apple</b><br>(groot stinkblaar)   |             |          |
| <i>Datura stramonium</i>   | <b>thorn apple</b><br>(stinkblaar)   |             |          |
| <i>Oxalis pes-caprae</i>   | <b>yellow sorrel</b><br>(geelsuring)   |             |          |

## ANNUAL BROADLEAF WEEDS AND ANNUAL GRASSES cont.

| Botanical name  | Common name<br>(algemene naam)  | Dosage rate |          |
|---|---|-------------|----------|
|   |   | ℓ/ha        | Solution |
| <b>Annual broadleaf weeds</b>   |   |             |          |
| <i>Polygonum aviculare</i><br><i>Richardia brasiliensis</i>                               | <b>Prostrate knotweed</b><br>(voëlduisendknoop)<br><b>tropical Richardia</b><br>(tropiese Richardia)                                | 2.6 - 4 ℓ   | 1.3 - 2% |
| <i>Senecio ilicifolius</i>  | <b>ragwort</b><br>(gifbossie)   |             |          |
| <i>Schkuhria pinnata</i>  | <b>dwarf marigold</b><br>(kleinkakiebos)  |             |          |
| <i>Tagetes minuta</i>   | <b>khaki weed</b><br>(kakiebos)   |             |          |
| <b>Annual Grasses</b>   |   |             |          |
| <i>Aristida junciformis</i><br><i>Cymbopogon plurinodes</i>                               | <b>bristle grass</b><br>(koperdraadgras)<br><b>bitter turpentine grass</b><br>(bosveld terpentyn gras)                              | 2.6 - 4 ℓ   | 1.3 - 2% |
| <i>Digitaria sanguinalis</i><br><i>Diheteropogon filifolius</i><br><i>Eleusine indica</i> | <b>crab fingergrass</b><br>(kruisvingergras)<br><b>wire blue stem</b><br>(smallblaarblougras)<br><b>goose grass</b><br>(Jongosgras) |             |          |
| <i>Eragrostis curvula</i>   | <b>weeping love grass</b><br>(oulandsgras)  |             |          |
| <i>Eulalia villosa</i>  | <b>golden velvet grass</b><br>(geel fluweelgras)  |             |          |
| <i>Loudetia simplex</i>   | <b>russet grass</b><br>(stingelgras)  |             |          |
| <i>Monocymbium cerasiiforme</i><br><i>Panicum maximum</i>                                 | <b>wild oat grass</b><br>(wildehawergras)<br><b>common buffalograss</b><br>(gewone buffelsgras)                                     |             |          |
| <i>Panicum natalense</i>  | <b>Natal buffalo grass</b><br>(Natal buffelsgras)   |             |          |
| <i>Rhynchelytrum repens</i>   | <b>Natal red-top</b><br>(Natalse rooipluimgras)   |             |          |
| <i>Sporobolus africanus</i>   | <b>rush grass</b><br>(taaipol)  |             |          |
| <i>Stiburus alopecuriodes</i><br><i>Tragus racemosus</i>                                  | <b>pongwa grass</b><br>(koperdraadgras)<br><b>large carrotseed grass</b><br>(groot wortelsaadgras)                                  |             |          |
| <i>Urochloa panicoides</i>  | <b>herringbone grass</b><br>(beesgras)  |             |          |

\* Inconsistent control

## 2. CONTROL OF ANNUAL WEEDS

**TOUCHDOWN FORTE HITECH** will give inconsistent control of

- *Commelina benghalensis* (wandering Jew).



- Plants with thick waxy leaves e.g., *Portulaca oleracea*.

The registration holder will not accept any responsibility for poor control of these plants.

## 2.1 BROADLEAF WEEDS

The following broadleaf weeds will be controlled at the rates of **TOUCHDOWN FORTE HITECH** and growth stages as indicated below:

| Growth stage                      | Dosage   |
|-----------------------------------|--|
| 1 to 12-leaf                      | 0.5 - 0.7 ℓ/ha   |
| 12-leaf to pre-bloom              | 0.7 - 1 ℓ/ha   |
| Flowering                         | 1 - 1.3 ℓ/ha   |
| Botanical name                    | Common name (algemene naam)                              |
| <i>Alternanthera pungens</i>      | <b>khaki bur weed</b> (kakiedubbeltjie)                  |
| <i>Amaranthus hybridus</i>        | <b>common pigweed</b> (Kaapse misbredie)                 |
| <i>Amaranthus spinosus</i>        | <b>thorny pigweed</b> (doringmisbredie)                  |
| <i>Amaranthus thunbergii</i>      | <b>red pigweed</b> (rooimisbredie)                       |
| <i>Arctotheca calendula</i>       | <b>Cape marigold</b> (witgousblom)                       |
| <i>Arctotis venusta</i>           | <b>Free State daisy</b> (soetgousblom)                   |
| * <i>Argemone subfusiformis</i>   | <b>white flowered Mexican poppy</b> (witblom bloudissel) |
| <i>Bidens pilosa</i>              | <b>black jack</b> (knapsekêrel)                          |
| <i>Boerhavia diffusa</i>          | <b>erect Boerhavia</b> (regop Boerhavia)                 |
| <i>Ceniza turbinata</i>           | <b>goose daisy</b> (ganskos)                             |
| * <i>Chenopodium album</i>        | <b>white goosefoot</b> (withondebossie)                  |
| * <i>Chenopodium ambrosioides</i> | <b>American goosefoot</b> (kruiehondebossie)             |
| * <i>Chenopodium carinatum</i>    | <b>green goosefoot</b> (groen hondebossie)               |
| * <i>Chenopodium murale</i>       | <b>nettle-leaved goosefoot</b> (muurhondebossie)         |
| <i>Cirsium arvense</i>            | <b>Canada thistle</b> (Kanada-dissel)                    |
| <i>Citrullus lanatus</i>          | <b>bitter apple</b> (karkoer)                            |
| <i>Conyza canadensis</i>          | <b>horseweed fleabane</b> (Kanadese skraalhans)          |
| *** <i>Conyza floribunda</i>      | <b>tall fleabane</b> (vaalskraalhans)                    |
| *** <i>Coronopus didymus</i>      | <b>Swinecress</b> (peperkruid)                           |
| <i>Cotula tenella</i>             | - (-)  |
| <i>Crotalaria sphaerocarpa</i>    | <b>mealie Crotalaria</b> (mielie Crotalaria)             |
| <i>Cucumis</i> spp.               | <b>wild cucumber</b> (wildekomkommer)                    |
| <i>Datura ferox</i>               | <b>large thorn apple</b> (grootstinkblaar)               |
| <i>Datura stramonium</i>          | <b>thorn apple</b> (stinkblaar)                          |
| <i>Emex australis</i>             | <b>spiny Emex</b> (Kaapse dubbeltjie)                    |
| <i>Fumaria muralis</i>            | <b>fumitory</b> (duiwekerwel)                            |
| <i>Galinsoga parviflora</i>       | <b>gallant soldier</b> (knopkruid)                       |
| * <i>Gisekia pharnaceioides</i>   | <b>Gisekia</b> (Gisekia)                                 |
| <i>Gnaphalium subfalcatum</i>     | <b>cudweed</b> (-)                                       |
| <i>Hibiscus cannabinus</i>        | <b>kenaf</b> (wildestokroos)                             |
| <i>Hibiscus trionum</i>           | <b>bladderweed</b> (Terblansbossie)                      |

## BROADLEAF WEEDS cont.

|                                     |   |
|-------------------------------------|---|
| ** <i>Ipomoea purpurea</i>          | <b>common morning glory</b> (purpurwinde)       |
| <i>Lepidium africanum</i>           | <b>pepper cress</b> (peperbossie)               |
| <i>Medicago</i> spp.                | - (-)   |
| <i>Oxalis pes-caprae</i>            | <b>yellow sorrel</b> (geelsuring)               |
| <i>Pentzia grandiflora</i>          | <b>stinkweed</b> (stinkkruid)                   |
| <i>Physalis angulata</i>            | <b>wild gooseberry</b> (wilde appelliefie)      |
| ** <i>Portulaca oleracea</i>        | <b>purslane</b> (porslein)                      |
| <i>Pseudognaphalium luteo-album</i> | <b>cudweed</b> (-)                              |
| <i>Pseudognaphalium undulatum</i>   | <b>undulate cudweed</b> (-)                     |
| <i>Schkuhria pinnata</i>            | <b>dwarf marigold</b> (kleinkakiebos)           |
| * <i>Senecio burchellii</i>         | <b>molteno-disease-plant</b> (burshell-senecio) |
| * <i>Senecio consanguineus</i>      | <b>starvation Senecio</b> (hongerbossenecio)    |
| <i>Sesamum triphyllum</i>           | <b>wild sesame</b> (wildeasem)                  |
| <i>Sonchus oleraceus</i>            | <b>sowthistle</b> (sydissel)                    |
| <i>Spergula arvensis</i>            | <b>corn spurry</b> (sporrie)                    |
| <i>Stellaria media</i>              | <b>chickweed</b> (sterremuur)                   |
| <i>Tagetes minuta</i>               | <b>khaki weed</b> (kakiebos)                    |
| <i>Tetragonia caesia</i>            | - (-)   |
| <i>Tribulus terrestris</i>          | <b>dubbeltjie</b> (dubbeltjie)                  |
| <i>Veronica</i> spp.                | <b>Veronica</b> (Veronica)                      |

\* Inconsistent control of certain populations of *Chenopodium* spp. have been seen. Care should be taken to avoid the development of resistance in these populations by alternating different herbicides from chemical classes as suggested in the paragraph on resistance management of this label.

\*\* Even at high rates variable control of *Ipomoea* spp. and *Portulaca* spp. can be experienced which would require a follow-up application.

\*\*\* Inconsistent control and resistance problems.

## 2.2 GRASSES

The following grasses will be controlled at the rates of **TOUCHDOWN FORTE HITECH** and growth stages as indicated below:

| Growth stage           | Dosage                                      |
|------------------------|---|
| 1 to 12-leaf           | 0.5 - 0.7 ℓ/ha                              |
| 12-leaf to pre-bloom   | 0.7 - 1 ℓ/ha                                |
| Flowering              | 1 - 1.3 ℓ/ha                                |
| Botanical name         | Common name (algemene naam)                 |
| • <i>Avena</i> spp.    | <b>wild oats</b> (wildehawer)               |
| • <i>Avena fatua</i>   | <b>common wild oats</b> (gewone wildehawer) |
| <i>Briza maxima</i>    | <b>quaking grass</b> (bewertjiesgras)       |
| <i>Bromus diandrus</i> | <b>rippgut brome</b> (predikantsluis)       |
| <i>Chloris virgata</i> | <b>feathertop Chloris</b> (witpluimchloris) |
| <i>Eleusine indica</i> | <b>goose grass</b> (jongosgras)             |



## GRASSES cont.

|   |   |
|---|---|
| <i>Ehrharta longiflora</i>              | <b>oat-seed grass</b><br>(hawersaadgras)                    |
| <i>Hordeum murinum</i>                  | <b>wild barley</b><br>(wildegras)                           |
| • <i>Lolium multiflorum</i>             | <b>Italian ryegrass</b><br>(Italiaanse raaigras)            |
| • <i>Lolium temulentum</i>              | <b>darnel</b><br>(drabok)                                   |
| <i>Panicum schinzii</i>                 | <b>sweet buffalo grass</b><br>(soet buffelsgras)            |
| <i>Paspalum urvillei</i> (seedlings)    | <b>tall Paspalum</b><br>(langbeen Paspalum)                 |
| • <i>Phalaris canariensis</i>           | <b>canary grass</b><br>(kanariegras)                        |
| • <i>Phalaris minor</i>                 | <b>little-seeded canary grass</b><br>(kleinsaadkanariegras) |
| <i>Poa annua</i>                        | <b>winter grass</b><br>(wintergras)                         |
| <i>Rhynchelytrum repensx</i>            | <b>Natal red-top</b><br>(Natalse rooipluim)                 |
| <i>Secale cereale</i>                   | <b>rye</b><br>(-)   |
| <i>Setaria pallide-fusca</i>            | <b>red bristle grass</b><br>(rooi borselgras)               |
| <i>Setaria verticillata</i>             | <b>sticky bristle grass</b><br>(kliitsborselgras)           |
| <i>Sorghum bicolor subsp drummondii</i> | <b>wild grain-sorghum</b><br>(wildegraansorghum)            |
| <i>Tragus racemosus</i>                 | <b>large carrot-seed grass</b><br>(grootwortelsaadgras)     |
| <i>Triticum aestivum</i>                | <b>volunteer wheat</b><br>(opslagkoring)                    |
| * <i>Zea mays</i>                       | <b>volunteer maize</b><br>(opslagmielie)                    |

\* **TOUCHDOWN FORTE HITECH** will not control volunteer glyphosate tolerant cotton, soybeans or maize.

Even at the higher rates, the control of large-established tufted ryegrass species, weeping love grass tufts and other tufted grasses as well as volunteer conventional maize may be variable which may necessitate a follow-on re-spray. Adjust the rates for volunteer maize according to weed size and density.

## 2.3 BROADLEAF WEEDS

The following broadleaf weeds will be controlled at the rates of **TOUCHDOWN FORTE HITECH** and growth stages as indicated below:

| Growth stage                  | Dosage   |
|-------------------------------|--|
| 1 to 12-leaf                  | 0.8 - 1 l/ha   |
| 12-leaf to pre-bloom          | 1 - 1.3 l/ha   |
| Flowering                     | 1.6 - 2 l/ha   |
| Botanical name                | Common name<br>(algemene naam)                             |
| <i>Acalypha glabrata</i>      | -<br>(-)   |
| <i>Ageratum conyzoides</i>    | <b>invading Ageratum</b><br>(indringer-Ageratum)           |
| <i>Aizoon canariense</i>      | -<br>(-)   |
| <i>Boerhavia erecta</i>       | <b>erect Boerhavia</b><br>(-)                              |
| <i>Cleome gynandra</i>        | <b>spider wasp</b><br>(-)                                  |
| * <i>Conyza bonariensis</i>   | <b>flax-leaf fleabane</b><br>(kleinskraalhans)             |
| <i>Corchorus trilocularis</i> | -<br>(-)   |
| <i>Echium lycopsis</i>        | <b>purple Echium</b><br>(-)                                |
| <i>Euphorbia chamaesyce</i>   | <b>hairy creeping milk weed</b><br>(harige kruipmelkkruid) |

## BROADLEAF WEEDS cont.

|                                  |  |
|----------------------------------|--|
| <i>Euphorbia geniculata</i>      | <b>painted milkweed</b><br>(-)                             |
| <i>Euphorbia hirta</i>           | <b>red milkweed</b><br>(rooimelkkruid)                     |
| <i>Euphorbia inaequilatera</i>   | <b>smooth creeping milk weed</b><br>(gladdekruipmelkkruid) |
| <i>Fimbristylis hispidula</i>    | <b>slender sedge</b><br>(-)                                |
| <i>Flaveria bidentis</i>         | <b>smelter's bush</b><br>(smeltersbossie)                  |
| <i>Gnaphalium undulatum</i>      | <b>undulated cudweed</b><br>(groenbossie)                  |
| <i>Hyporchoeris radicata</i>     | <b>hairy wild lettuce</b><br>(harige skaapslaai)           |
| * <i>Ipomoea plebeia</i>         | -<br>(-)   |
| <i>Lactuca serriola</i>          | <b>wild lettuce</b><br>(wildeslaai)                        |
| <i>Lepidium bonariense</i>       | <b>pepper cress</b><br>(peperbossie)                       |
| <i>Melinis nerviglumis</i>       | -<br>(-)   |
| <i>Nicandra physaloides</i>      | <b>apple of Peru</b><br>(basterappelliefie)                |
| <i>Oenothera rosea</i>           | <b>rose evening primrose</b><br>(rooskleurige nagblom)     |
| <i>Oxalis</i> spp.               | <b>sorrel</b><br>(suring)                                  |
| <i>Oxygonum sinuatum</i>         | -<br>(-)   |
| <i>Parthenium hysterophorus</i>  | <b>Domonion weed</b><br>(domoniabossie)                    |
| <i>Polygonum arviculare</i>      | <b>prostrate knotweed</b><br>(voëlduisendknoop)            |
| <i>Raphanus raphanistrum</i>     | <b>wild radish</b><br>(ramenas)                            |
| <i>Senecio apifolius</i>         | -<br>(-)   |
| <i>Sida cordifolia</i>           | <b>heartleaf Sida</b><br>(hartblaartaaiman)                |
| <i>Sida rhombifolia</i>          | <b>arrowleaf-Sida</b><br>(smalblaartaaiman)                |
| <i>Solanum nigrum</i>            | <b>black nightshade</b><br>(nastergal)                     |
| <i>Tephrosia polystachya</i>     | -<br>(-)   |
| <i>Trianthema portulacastrum</i> | -<br>(-)   |
| <i>Verbena officinalis</i>       | <b>European Verbena</b><br>(-)                             |

\* Even at high rates variable control of *Ipomoea* spp. and *Conyza bonariensis* can be experienced which would require a follow-up application.

## 2.4 GRASSES

| Growth stage                    | Dosage   |
|---------------------------------|--|
| 1 to 12-leaf                    | 0.8 - 1 l/ha                                   |
| 12-leaf to pre-bloom            | 1 - 1.3 l/ha                                   |
| Flowering                       | 1.6 - 2.6 l/ha                                 |
| Botanical name                  | Common name<br>(algemene naam)                 |
| <i>Bothriochloa insculpta</i>   | -<br>(-)                                       |
| <i>Brachiaria eruciformis</i>   | <b>sweet signal grass</b><br>(litjesinjalgras) |
| <i>Dactyloctenium aegyptium</i> | <b>crowfoot</b><br>(hoenderspoor)              |
| <i>Digitaria sanguinalis</i>    | <b>crab finger-grass</b><br>(kruisingergras)   |
| <i>Echinochloa colona</i>       | <b>marsh grass</b><br>(moerasgras)             |
| <i>Echinochloa crus-galli</i>   | <b>barnyard grass</b><br>(hanepootmanna)       |
| <i>Eragrostis capensis</i>      | -<br>(-)                                       |
| <i>Eragrostis ciliaris</i>      | -<br>(-)                                       |

## GRASSES cont.

|                                 |   |
|---------------------------------|---|
| <i>Eragrostis virescens</i>     | <b>Chilean love grass</b><br>(Chileense eragrostis)     |
| <i>Heteropogon contortus</i>    | <b>common spear grass</b><br>(gewone pylgras)           |
| <i>Hyparrhenia gazensis</i>     | -   |
| <i>Panicum maximum</i>          | (-)   |
| <i>Paspalum urvillei</i>        | <b>common buffalo grass</b><br>(gewone buffelsgras)     |
| <i>Pseudobrachiaria deflexa</i> | <b>tall Paspalum</b><br>(langbeen Paspalum)             |
| <i>Setaria sphacelata</i>       | <b>false signal grass</b><br>(bastersinjaalgras)        |
| <i>Themeda triandra</i>         | -   |
| <i>Tragus berteronianus</i>     | (-)   |
| <i>Urochloa mosambicensis</i>   | (rooigras)  |
| <i>Urochloa panicoides</i>      | <b>small carrot-seed grass</b><br>(kleinwortelsaadgras) |
| <i>Trystachia leucotrix</i>     | <b>bushveld herringbone grass</b><br>(bosveld beesgras) |
|                                 | <b>herringbone grass</b><br>(beesgras)                  |
|                                 | -   |
|                                 | (-)   |

## 2.5 BROADLEAF WEEDS

The following broadleaf weeds will be controlled at the rates of **TOUCHDOWN FORTE HITECH** and growth stages as indicated below:

| Growth stage             | Dosage                              |
|--------------------------|-------------------------------------|
| 1 to 12-leaf             | 1 - 2 ℓ/ha                          |
| 12-leaf to pre-bloom     | 2 ℓ/ha                              |
| Flowering                | 2 ℓ/ha                              |
| Botanical name           | Common name (algemene naam)         |
| <i>Erodium moschatum</i> | <b>musk heron's bill</b> (turknael) |

| 1 to 12-leaf  | 0.5 - 2 ℓ/ha                      |
|---|-----------------------------------|
| 12-leaf to pre-bloom  | 2 ℓ/ha                            |
| Flowering   | not to be sprayed                 |
| Botanical name  | Common name (algemene naam)       |
| <i>Malva parviflora</i>   | <b>small mallow</b> (kiesieblaar) |
| <ul style="list-style-type: none"> <li>Not recommended for <i>Malva parviflora</i> (small mallow) control at flowering.</li> <li>For control of <i>Malva parviflora</i> (small mallow) and <i>Oenothera stricta</i> (evening primrose) (smaller than 12-leaf stage), apply <b>TOUCHDOWN FORTE HITECH</b> at 2 ℓ/ha in combination with the recommended SIMAZINE SC rate for the soil type.</li> </ul> |                                   |

| Growth stage             | Dosage                               |
|--------------------------|--------------------------------------|
| 1 to 12-leaf             | 5 - 6 ℓ/ha                           |
| 12-leaf to pre-bloom     | 5 - 6 ℓ/ha                           |
| Flowering                | 5 - 6 ℓ/ha                           |
| Botanical name           | Common name (algemene naam)          |
| <i>Rumex angiocarpus</i> | <b>sheep sorrel</b> (steenboksuring) |

## 2.6 DIFFICULT-TO-CONTROL WEEDS IN UNDER COLD STRESS CONDITIONS

For spraying in midwinter in the winter rainfall areas when conditions are less favourable for plant uptake of herbicides, the following application rates are recommended:

| Growth stage         | Dosage   |
|----------------------|----------|
| 1 to 12-leaf         | 2 ℓ/ha   |
| 12-leaf to pre-bloom | 2.3 ℓ/ha |

| Flowering                    | 2.5 ℓ/ha   |
|------------------------------|--|
| Botanical name               | Common name (algemene naam)                      |
| <i>Arctotheca calendula</i>  | <b>Cape marigold</b><br>(soetgousblom)           |
| <i>Chenopodium album</i>     | <b>white goosefoot</b><br>(withondebossie)       |
| <i>Conyza floribunda</i>     | <b>tall fleabane</b><br>(vaalskraalhans)         |
| <i>Erodium moschatum</i>     | <b>musk heron's bill</b><br>(turnael)            |
| <i>Hypochoeris radicata</i>  | <b>hairy wild lettuce</b><br>(harige skaapslaai) |
| * <i>Lolium</i> spp.         | <b>ryegrass</b><br>(raaigras)                    |
| <i>Medicago poly-morpha</i>  | <b>clover</b><br>(klawer)                        |
| <i>Raphanus raphanistrum</i> | <b>wild radish</b><br>(ramenas)                  |
| <i>Sonchus oleraceus</i>     | <b>sow thistle</b><br>(sydissel)                 |

\* Refer to the RESISTANCE MANAGEMENT paragraph of this label.

## 3. SPECIFIC CROP RECOMMENDATIONS

| Crop  | Remarks  |
|---|--|
| <p><b>General</b><br/>Aloes, hops, olives and prickly pears.</p> <p><b>Deciduous Fruits</b><br/>Apples, apricots, nectarines, peaches, pears, plums, prunes and quince.</p> <p><b>Subtropical fruits</b><br/>Avocados, bananas, citrus, coffee, granadilla, guava, kiwi fruit, litchies, mangoes, pawpaw, pineapples and tea.</p> <p><b>Nut and berry crops</b><br/>Almonds, blackberry, cherries, macadamia- and pecan nuts.</p> | <p>See weed tables for dosage rates of <b>TOUCHDOWN FORTE HITECH</b>.</p> <p>Protect young trees with green bark from direct spray.</p>  |
| <b>Vines and fruit trees</b>  | <p>Apply before bud burst to vines older than two (2) years. Younger vines with green bark should be shielded. Spray should be directed onto weeds.</p> <p>Do not spray onto pruned vines or fruit trees until wounds have sealed properly.</p> <p><b>Crop-cover destruction in grapevines</b><br/>For the control of <i>Avena</i> spp. (bearded oats, common oats), *<i>Lolium</i> spp. (Italian ryegrass, darnel) and *<i>Secale cereale</i> (rye grass), apply <b>TOUCHDOWN FORTE HITECH</b> at 0.7 ℓ/ha. Apply 10 days or more after pruning and before bud burst.</p> |
| <b>Sisal</b>  | Applications can be made to nursery and mature plants.   |
| <b>Arable land</b>  | <p>Use <b>TOUCHDOWN FORTE HITECH</b> after harvesting of previous crop.</p> <p>Do not disturb target plants before six (6) hours after application (before planting of crops) and prior to emergence of new crop.</p> <p>Weeds should always be active growing at time of application.</p>   |

## FORESTRY USAGE

| Situation   | Botanical name<br>(Common name/<br>algemene naam)  | Dosage rate               |                 |
|---|--|---------------------------|-----------------|
|   |  | ℓ/ha                      | Solution        |
| <b>Forest maintenance</b><br>(Established forests)  | <i>Acacia mearnsii</i><br><b>(black wattle/swart wattel)</b><br>Apply to young trees from 0.1 - 2 m high.  | <b>2 - 2.6 ℓ/ha</b>       | <b>1 - 1.3%</b> |
|   | <i>Solanum mauritianum</i><br><b>(bugweed/luisboom)</b><br><b>Large trees:</b><br>Cut to 50 cm, allow new growth of at least 50 cm before application.<br><b>Saplings:</b><br>Apply directly to foliage.   | <b>1.3 ℓ/ha</b>           | <b>1%</b>       |
|   | <i>Rubus</i> spp.<br><b>(American Bramble/ Amerikaanse Braam)</b><br>Slash excessive<br>Growth in winter.<br>Apply when new growth is more than 0.5 m high.<br>If re-growth occurs, spray with 1% solution.  | <b>4 ℓ/ha</b>             | <b>2%</b>       |
| <b>Fire-breaks</b><br>Fire-breaks preparation either tracer belts or total area.  | The weed population would include perennials and annuals. Refer to list under INDUSTRIAL USAGE.<br>A minimum of 200 ℓ spray mixture/ha must be applied when using the 1.3% solution.<br>A follow-up treatment may be necessary to control some hardy perennials using a 1.3% solution on a spot spray basis. | <b>2.6 ℓ/ha</b>           | <b>1.3%</b>     |
| <b>Band preparation for tree seedlings</b><br>Situations suitable for such treatments include:<br>a) Virgin veld<br>b) Clear/felled forests | The weed population would include perennials and annuals. Refer to list under INDUSTRIAL USAGE.<br>A minimum of 200 ℓ spray mixture/ha must be applied when using the 1.3% solution.<br>A follow-up treatment may be necessary to control some hardy perennials using a 1.3% solution on a spot spray basis. | <b>2.6 ℓ/ha</b>           | <b>1.3%</b>     |
| <b>General</b>  | <i>Eucalyptus grandis</i><br><b>(bluegum/bloekomboom)</b><br>Apply 50 mℓ solution to a clean cambium area  | <b>Single stem stumps</b> | <b>3.3%</b>     |

## FORESTRY USAGE cont.

| General |   | Single stem stumps      | 3.3%        |
|---------|---|-------------------------|-------------|
|         | immediately after felling.  |                         |             |
|         | Apply 100 mℓ solution to a clean, fully-exposed cambium layer immediately after felling. If re-growth occurs, spray with 1.3% solution. | <b>Multistem stumps</b> | <b>4.6%</b> |

## 4. SPECIALISED PRACTICES

### 4.1 SUGARCANE ERADICATION

| Crop  | Dosage                | Remarks   |
|---|-----------------------|---|
| <b>SUGARCANE ERADICATION</b><br>(minimum tillage) | <b>5.3 - 6.6 ℓ/ha</b> | <b>TOUCHDOWN FORTE HITECH</b> will effectively kill last ratoon sugarcane after it has been harvested and allowed to re-grow to a height of ± 45 cm, when tillering is complete.<br>Spray actively growing sugarcane when tillers have emerged, using 100 - 600 ℓ/ha. Re-growth can be removed by hand.<br>Contact your distributor for detailed information on all aspects of minimum tillage before spraying. |
|   | <b>6.6% solution</b>  | For spot eradication of diseased (e.g., smut) and off-type cane stools. Apply as a directed spray on the target plant foliage.  |
|   | <b>1.3% solution</b>  | For spot spraying around fields, telephone poles etc.   |

### 4.2 GROWTH SUPPRESSION (chemical mowing)

The growth and flowering tempo of tufted and running perennial grasses can be suppressed by applying sub-lethal rates of **TOUCHDOWN FORTE HITECH**, 5 - 10 days after mowing and before growth of seed heads has started. Depending on species and dosage rate, grass growth can be prevented or reduced for up to 70 days (see dosage rates below).

High dosage rates will have a longer growth suppression period and a corresponding increase in chlorosis (yellowing).

Over-application of **TOUCHDOWN FORTE HITECH** can lead to severe injury or death of the plants. Do not apply to grasses under stress conditions, e.g., drought, waterlogging etc. Adverse climatic conditions may lead to variable results and periods of growth suppression are those expected under prevailing weather conditions. After mowing, excess plant material which may prevent the spray from coming into contact with the green grass foliage, should be removed prior to spraying.

Grasses are most sensitive to **TOUCHDOWN FORTE HITECH** in autumn and chlorosis can be expected to be greater in this period. Where minimum levels of chlorosis are required, dosage rates should not exceed 0.4 ℓ **TOUCHDOWN FORTE HITECH**/ha in summer or in



autumn. Spray volumes should be from 50 - 150 ℓ/ha and ensure even droplet distribution on the green petal foliage. Spray runoff should be avoided.

Rates of **TOUCHDOWN FORTE HITECH** and expected periods of growth suppression:

#### 4.2.1 TUFTED PERENNIAL GRASS

| Botanical name (common/algemene naam)                                       | Rate product/ha                  | Period (days)        |
|---|----------------------------------|----------------------|
| <i>Digitaria smutsii</i> (smuts finger grass/ smutsvingergras)              | 0.3 ℓ<br>0.4 ℓ<br>0.5 ℓ<br>0.7 ℓ | 30<br>50<br>60<br>70 |
| <i>Hyperrhenia hirta</i> (common thatching grass/ gewone dektamboekiesgras) |                                  |                      |
| <i>Festuca</i> spp. (fescues)<br><i>Lolium</i> spp. (ryegrass/raaigras)     | 0.4 - 0.5 ℓ                      | 30                   |
| <i>Sporobolus africanus</i> (rush grass/taaiopol)                           | 0.4 ℓ<br>0.5 ℓ<br>0.7 ℓ          | 20<br>40<br>50       |

#### 4.2.2 RUNNING AND PERENNIAL GRASSES

| Botanical name (common/algemene naam)                   | Rate product/ha                  | Period (days)        |
|---|----------------------------------|----------------------|
| <i>Cynodon dactylon</i> (common couch/gewone kweekgras) | 0.3 ℓ<br>0.4 ℓ<br>0.5 ℓ<br>0.7 ℓ | 10<br>20<br>30<br>40 |
| <i>Pennisetum clandestinum</i> (kikuyu/kikoejoe)        | 0.13 ℓ<br>0.26 ℓ<br>0.40 ℓ       | 30<br>40<br>60       |

#### 4.2.3 FOLLOW-UP APPLICATIONS

The period of growth suppression can be extended by follow-up sprays, which must take place before excessive foliar growth and seed heads start forming. The follow-up rate of **TOUCHDOWN FORTE HITECH** is dependent on desired length of growth suppression. Do not exceed a total of 0.65 ℓ/ha.

| First spray product/ha | Follow-up spray product/ha |
|------------------------|----------------------------|
| 0.3 - 0.7 ℓ            | 0.3 - 0.4 ℓ                |

#### 4.2.4 BROADLEAF PLANTS AND GRASS SEEDLINGS

The growth of broadleaf plants will also be suppressed by these rates of **TOUCHDOWN FORTE HITECH**. Seedlings and young plants may be controlled by these treatments.

#### 4.3 UNWANTED WEEDS

| TOUCHDOWN FORTE HITECH | Remarks  |
|------------------------|--|
| 2 - 4 ℓ/ha             | <b>Aerial application</b> <ul style="list-style-type: none"> <li>Apply on actively growing plants in 30 - 50 ℓ water/ha.</li> <li>Dosage rate will depend on plant size and density.</li> <li>Plants 500 - 900 mm; apply 2 ℓ/ha.</li> <li>Plants 1 - 1.9 m; apply 2.6 ℓ/ha.</li> <li>Plants &gt; 2 m; apply 3.3 ℓ/ha.</li> </ul> |

#### UNWANTED WEEDS cont.

|            |  |
|------------|--|
| 2 - 4 ℓ/ha | <ul style="list-style-type: none"> <li>On very dense plant growth apply 4 ℓ/ha.</li> <li>Do not apply more than 2 ℓ/ha in ecologically sensitive areas.</li> </ul> <b>Ground application</b> <ul style="list-style-type: none"> <li>Apply as above in 100 - 600 ℓ water/ha.</li> </ul> |
|------------|--|

#### 4.4 GENETICALLY MODIFIED CROPS

(Glyphosate tolerant cotton, soybeans and maize)

- TOUCHDOWN FORTE HITECH** can be applied on glyphosate tolerant cotton, soybean- and maize plants. Any individual plant that does not contain the glyphosate tolerant gene will die when sprayed with glyphosate based products e.g., **TOUCHDOWN FORTE HITECH**.
- Special care should be taken to apply it only over glyphosate tolerant crops or cultivars within the crop.
- Avoid drift, or the application of **TOUCHDOWN FORTE HITECH** on conventional crops (non-glyphosate tolerant crops) as this will result in severe crop injury, reduced yields and crop losses.
- TOUCHDOWN FORTE HITECH** may not be applied by means of aerial application to glyphosate tolerant crops.
- As Syngenta does not control the quality of glyphosate tolerant seed production no responsibility can be taken if certain individuals from glyphosate tolerant seed population are controlled by **TOUCHDOWN FORTE HITECH** due to the fact that they do not contain the glyphosate tolerant gene.
- Take into account when planning to plant a glyphosate tolerant crop, the control of the volunteer plants in the following season as **TOUCHDOWN FORTE HITECH** does not control any volunteer glyphosate tolerant plants from the previous season.

| Crop   | Weeds (Refer to the tables above for individual weeds)   | Rate/ha |
|--|--|---------|
| Glyphosate tolerant cotton, soybeans and maize | Before weeds are 100 mm high   | 1.5 ℓ   |
|  | When weeds are 100 - 200 mm high   | 1.8 ℓ   |
|  | The following weeds are controlled inconsistently and would require a follow on spray: <i>Commelina bengalensis</i> , <i>Chenopodium</i> spp., <i>Cyperus esculentus</i> , <i>Ipomeae purpurea</i> and <i>Portulaca oleracea</i> . | 2.2 ℓ   |

#### GENERAL

- Care should be taken of the WARNINGS and USE DIRECTIONS on this label as it also applies to glyphosate tolerant crops.
- The weed spectrum in cotton, soybean and maize fields can differ due to the following variables e.g., region, moisture and light as well as soil type resulting in a weed population with different weeds and in several different growth stages. The table above indicates rates that should control most weed populations within the size parameters set in the tables on this label. For other weeds, refer to the other tables on this label. Other provisions on this label should be adhered to e.g., relating to growth stages.

- Applications should be made very early in the growth stage of the weeds but before the 6-leaf stage. In this case only one (1) application of **TOUCHDOWN FORTE HITECH** would be necessary to control an existing population. This would also minimize weed competition in very critical stages of the cotton, soybeans and maize.
- **TOUCHDOWN FORTE HITECH** has no residual weed control and repeated follow-on applications could be necessary to control weeds germinating after application.

### GLYPHOSATE TOLERANT SOYBEANS

- **TOUCHDOWN FORTE HITECH** can be applied to glyphosate tolerant soybeans post-emergent from soon after emergence up to the end of flowering.
- A minimum of 14-days should be allowed between application and harvesting.
- Up to three (3) applications of **TOUCHDOWN FORTE HITECH** could be made on glyphosate tolerant soybeans without any damage to the crop. Do not spray more than 7.2 l/ha (3 600 g ae/ha) cumulatively in one (1) particular season.
- The use of residual herbicides would be recommended at all times as soybeans do not tolerate any weed competition. METAGAN GOLD or BATELEUR GOLD (L6136) should be used at planting and **TOUCHDOWN FORTE HITECH** should only be used later in the season to control new flushes of weeds. METAGAN GOLD can be applied in combination with **TOUCHDOWN FORTE HITECH** to provide residual grass control.

### GLYPHOSATE TOLERANT MAIZE

- **TOUCHDOWN FORTE HITECH** may be applied post-emergence in glyphosate tolerant maize (e.g., Roundup Ready®, Agrisure® GT) for the control of the weeds listed.
- On glyphosate tolerant maize, **TOUCHDOWN FORTE HITECH** can **only** be applied from soon after emergence up to the V8-leaf stage of the maize. This stage is reached when the first plants in the field have 8 leaves with closed collars around the main stem. (The actual number of leaves may be more).
- Do not make broadcast applications if mechanical crop damage due to the passing of the sprayer will or has occurred or if hail damage has occurred.
- Where sequential applications are necessary to control specific weed species (e.g., *Cyperus esculentus*), the second application should not occur within 10 days of the first application in order to allow the weeds to become actively growing again.
- If the maize is beyond the V8-stage, a directed application must be done.
- Care must be taken not to spray the reproductive parts of the maize plant.
- On glyphosate tolerant maize up to two (2) applications of up to 2.2 l/ha at a time can be made without any damage to the crop. Do not spray more than 4.4 l/ha (2 160 g ae/ha) cumulatively in one (1) particular season.
- The use of residual herbicides would be recommended at all times as maize does not tolerate any weed competition. CALLISTO, DUAL GOLD or PRIMAGRAM GOLD (L7308) should be used at planting.
- **TOUCHDOWN FORTE HITECH** must only be used later in the season after initial application of residual

herbicides at planting to control new flushes of weeds or difficult to control weeds.

- **TOUCHDOWN FORTE HITECH** can be applied in tankmixes with CALLISTO and METAGAN GOLD or GARDOPRIM PLUS GOLD to provide residual control.
- **TOUCHDOWN FORTE HITECH** may not be applied with atrazine-containing products e.g., GESAPRIM 90WG, GESAPRIM SUPER, PRIMAGRAM GOLD, or with any adjuvants as on the CALLISTO label. The post-emergence recommendation of CALLISTO on the CALLISTO label should then be changed to replace GESAPRIM 90WG (L4764) or GESAPRIM SUPER (L3914) or PRIMAGRAM GOLD with **TOUCHDOWN FORTE HITECH**.
- No tank mixture with **TOUCHDOWN FORTE HITECH** should contain any adjuvant. See the comment "adjuvants" under COMPATIBILITY in this label.

### GLYPHOSATE TOLERANT COTTON

- The above-recommended **TOUCHDOWN FORTE HITECH** rates may be applied in cotton varieties which are designated glyphosate tolerant cultivars.
- **TOUCHDOWN FORTE HITECH** can be recommended in combination with a pre-emergence application of METAGAN GOLD at rates as recommended on the METAGAN GOLD label.

### POST-EMERGENCE BROADCAST APPLICATION

#### OVER-THE-TOP OF THE COTTON PLANTS

- A broadcast application of **TOUCHDOWN FORTE HITECH** can ONLY be applied from the ground cracking stage up to the fourth true leaf stage of the cotton. This growth stage is reached when the first cotton plants in the field have reached the 4-leaf stage.
- A broadcast application after this time could result in boll loss, delayed maturity or even yield loss.
- Between the soil cracking stage and the 4-leaf stage of the cotton only two (2) or less applications of **TOUCHDOWN FORTE HITECH** may be done.
- If a second **TOUCHDOWN FORTE HITECH** application is needed,
  - the period between the first and the second application should be at least 10 days.
  - the cotton must have grown at least two (2) more leaves since the first application.
- If by this time the cotton is beyond the 4-leaf/node stage a post-directed (see below) application will be necessary.

#### Post-emergence directed application

- **TOUCHDOWN FORTE HITECH** can be applied as a directed spray between the cotton. This application method is essential if applications are after the 4-leaf stage of the cotton.
- Equipment such as spray guards should be used to protect the cotton foliage from excessive spray drift. The weeds within the cotton row however should be well-covered by the spray for effective control.
- For best results, make applications while weeds are small (less than 100 mm high). Sequential directed applications must also be at least 10 days apart and two (2) nodes of

incremental growth between applications.

- Only two (2) applications should be made between the fifth leaf to the fifteenth node stage.
- Repeated applications of **TOUCHDOWN FORTE HITECH** can be avoided by applying effective pre-emergence residual herbicides e.g., METAGAN GOLD.

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