

LAMDEX® 5 EC

Reg. no. L7578 Act/Wet 36 of/van 1947

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

3

INSECTICIDE

GROUP

An emulsifiable concentrate contact and 'n Emulgeerbare konsentraat kontakstomach insecticide for the control of various maaginsekdoder vir die beheer van verskeie insects in crops as indicated. insekte in gewasse soos aangedui. Harmful if swallowed. May be fatal if swallowed and enters airways. Causes serious eye irritation. Harmful if inhaled. May cause drowsiness or dizziness. Very toxic to aquatic life with long lasting effects. Combustible liquid. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. **DANGER** Avoid release to the environment.

ACTIVE INGREDIENT/AKTIEWE BESTANDDEEL

Lambda-cyhalothrin (pyrethroid)	50 g/L	Lambda-sihalotrin (piretroïed)
NET VOLUME/NETTO VOLUME		
L		

REGISTRATION HOLDER/REGISTRASIEHOUERADAMA South Africa (Pty) Ltd; Reg. no. 1992/001741/07

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EMERGENCY NUMBERS:

Griffon Poison Information Centre: +27 82 446 8946 Tygerberg Poison Information Centre: +27 861 555 777

Batch number	 Lotnommer
Date of Manufacture	 Datum van Vervaardiging
Expiry date	 Vervaldatum

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WARNINGS

- Harmful if swallowed.
- May be fatal if swallowed and enters airways.
- Causes serious eye irritation.
- Harmful if inhaled.
- May cause drowsiness or dizziness.
- Very toxic to aquatic life with long lasting effects.
- Combustible liquid.

Withholding periods (Minimum number of days between last application and harvest, grazing or feeding):

Apples, Apricots, Cherries, Nectarines, Pears, Plums and Peaches	14 days
Cotton (grazing), Sorghum, Soybeans (grazing) and Wheat	28 days
Dry beans, Maize and Sweetcorn	7 days
Grapes	28 days
Green beans	1 day
Lucerne	8 days
Peas and Potatoes	3 days
Tomatoes, Cruciferae and Lupins (grazing)	2 days

- Handle with care.
- May be irritating to skin for some individuals.
- Store in a cool, dry place away from food and feed.
- Although LAMDEX®5 EC is of very low risk to bees, it should only be applied during periods when
 bees are not active.
- Re-entry interval: Do not enter treated area within 1 day after application unless wearing protective clothing.
- In case of poisoning call a doctor and show him/her this label.
- Aerial application: Notify all inhabitants in the immediate vicinity of the area to be sprayed and issue the necessary warnings. Do not spray over or allow drift to contaminate water or adjacent areas.

Export fruit: When the product is used according to label recommendations the local MRL will not be exceeded. ADAMA South Africa (Pty) Ltd cannot be held responsible for export fruit exceeding the import tolerances of other countries. The local export marketing bodies should be contacted for further information.

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

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indicated on the label and the occurrence of resistance of the pest to 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 man 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 which could not have been foreseen in terms of the registration. Consult the supplier in the event of any uncertainty.

PRECAUTIONS

- Keep out of reach of children.
- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- Take precautionary measures against static discharge.
- Wear protective gloves, protective clothing, and eye and face protection.
- Avoid breathing dust/fume/gas/mist/vapors or spray.
- Wash hands, face and any exposed skin thoroughly after handling. Do not touch eyes.
- Do not eat, drink or smoke when using this product.
- Use only outdoors or in a well-vintilated area.
- Avoid release to the environment.
- Get medical help if you feel unwell.
- Do NOT induce vomiting.
- IF SWALLOWED: Get emergency medical help immediately and rinse mouth
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- If eye irritation persists: Get medical help.
- Store locked up in a well-ventilated place and keep cool.
- Collect spillage.
- Dispose of contents/container in accordance with national regulation.
- Prevent contamination of food, feed, drinking water and eating utensils.
- Avoid contact with eyes and skin.
- Prevent spray drift onto other crops, grazing, rivers, dams or any other area not under treatment.
- Clean applicator thoroughly after use. Dispose of wash water where it will not contaminate crops, grazing, rivers or dams.
- 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 empty container three times with

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a volume of water equal to 10% of that of the container. Add the rinsings to the contents of the spray tank before destroying the empty container.

- Destroy empty container and do not use for any other purpose.
- · Take off work clothes and wash it. Wash yourself.

RELEVANT SUBSTANCES

Chemical name	w/w %	CAS no.
Lambda-cyhalothrin	<10%	91465-08-6
Solvent naphtha, petroleum, heavy arom.	>60%	64742-94-5
Castor oil ethoxylated	<10%	61791-12-6
2-Ethylhexane-1-ol	<10%	104-76-7
Calcium dodecylbenzenesulphonate	<10%	26264-06-2

FIRST AID

In case of accident or unwellness, seek medical advice immediately. Provide this label and SDS to medical personnel for treatment. Emergency personnel should wear protective clothing appropriate to the type and degree of contamination.

Immediately remove contaminated clothing and remove the affected person from the contamination area. Keep the person warm, calm and covered up. First Aid personnel should pay attention to their own safety.

Take the container label or product name with you when seeking medical attention.

Eye contact: Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. Get medical attention immediately if symptoms occur.

Skin contact: Remove all contaminated clothing and shoes. Rinse the skin immediately with plenty of water for 15 to 20 minutes under the safety shower. Consult a physician if necessary.

Inhalation: Immediately remove the affected victim from exposure to an area with fresh air. If breathing is difficult have qualified personnel administer oxygen. If breathing has stopped, administer artificial respiration. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician.

Ingestion: Call a poison control center or medical practitioner immediately for treatment advice. If conscious, rinse mouth thoroughly with water. Drink plenty of water. Never give anything by mouth to an unconscious or convulsing person. Do NOT induce vomiting. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in of vomit, rinse mouth and administer more water. Get medical attention immediately if symptoms occur.

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TOXICOLOGICAL INFORMATION

Antidotes

None known. Treat symptomatically.

Symptoms of human poisoning

None known.

NOTICE TO THE USER: This agricultural remedy is to be used only in according to the directions of this label. It is an offense under the Act to use this product inconsistent with the directions on the label.

RESISTANCE WARNING

For resistance management, **LAMDEX**® **5 EC** is a group code 3 insecticide. Any insect population may contain individuals naturally resistant to **LAMDEX**® **5 EC** and other group code 3 insecticides. The resistant individuals can eventually dominate the insect population if these insecticides are used repeatedly. These resistant insects may not be controlled by **LAMDEX**® **5 EC** or any other group code 3 insecticides.

To delay insecticide resistance:

- Avoid exclusive repeated use of insecticides from the same insecticide group code. Alternate or tank-mix with products from different insecticide group codes.
- Integrate the control methods (chemical, cultural, biological) into insect control programmes.

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

- **NOTE**: **Warning against resistance**: Resistance of American (African) bollworm (*Helicoverpa armigera*) to synthetic pyrethroids has been confirmed.
- **Cotton:** Synthetic pyrethroids must ONLY be applied to cotton during the period 1 January to 28 February.
- All other crops: DO NOT apply more than two applications per growing season on the same field. If a pyrethroid gives poor performance DO NOT re-spray with any other synthetic pyrethroid, even at a corrective dosage rate. Use a product from a different chemical group with a different mode of action.

MODE OF ACTION

3: Sodium channel modulators. Keep sodium channels open, causing hyperexcitation and, in some cases, nerve block. Sodium channels are involved in the propagation of action potentials along nerve axons.

DIRECTIONS FOR USE

Use only as indicated.

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Mixing Instructions

Half fill the spray tank with clean water. Add the required volume of **LAMDEX® 5 EC** to the water while agitating. Fill the spray tank while agitation is maintained. Ensure that agitation is maintained during mixing and application. Mix only sufficient spray mixture to be used in the same day.

APPLICATION

Ground application

LAMDEX® **5 EC** can be applied by means of any suitable medium or high volume spray apparatus that is calibrated correctly, is fitted with an efficient agitating system and is able to distribute the spray mixture evenly over the target area.

Aerial application

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

Equipment

- Use suitable atomising equipment (hydraulic nozzles or rotary atomisers) that will produce the
 desired droplet size and coverage of the target area and will ensure the minimum loss of product
 through drift.
- The operator must use a nozzle set-up that will produce a droplet spectrum with the lowest possible relative span.
- All nozzles and atomisers should be positioned within the inner 75 % of the wingspan to prevent droplets from entering the wingtip vortices.

Application parameters

- A minimum volume of 30 L spray mixture/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.
- A droplet coverage of 30–40 droplets/cm² must be recovered at the target.
- A droplet spectrum with a VMD of 250–280 micron is recommended. Ensure that the production of fine droplets, with a VMD less than 150 micron, is restricted to a minimum.
- The height of the spray boom should be maintained at between 3–4 m above the target.
- Do not spray when the aircraft is in a climb, at the top of a turn or during a dive or when banking.
- Apply before the crop growth becomes too dense, which will interfere with overall plant coverage.

Meteorological conditions

- The difference between the wet and dry bulb readings as determined by a whirling hygrometer must not exceed 8 °C.
- Do not spray under turbulent, unstable conditions or during the heat of the day when rising thermals and downdraughts occur.
- Do not spray under temperature inversion conditions (spraying in or above the inversion layer).
- Do not spray when the wind speed exceeds 15 km/h.

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General

- Ensure that fields are accurately marked and 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.
- Prepared spray mixture must not be left in the spray tank for any length of time e.g. overnight.

APPLICATION RATES

CROP AND TARGET	DOSAGE	REMARKS
All crops Cutworm (Agrotis spp.)		Apply LAMDEX® 5 EC as a pre-emergence or early post-emergence application. The soil must be well prepared and free of clods and excessive plant debris. In situations where reduced tillage is practised, cutworm populations are usually high. Therefore, the cutworm population must be monitored after the first application and if necessary, a second application should be applied. Apply as an overall, corrective spray at the recommended rate. Note: It is of the utmost importance that the top 3
	0.23 ml/100 m row	cm of soil is moist at the time of application. Row treatment : Apply in 3 L water/100 m row length as a 30 cm band over the row.
	70 ml/ha 70 ml/ha	Overall treatment: Apply in at least 200 L water/ha. Aerial application: Apply in at least 30 L water/ha.
Apples and pears Codling moth (Cydia pomonella)	10 ml/100 L water (250–350 ml/ha)	Apply as a high volume application at 75% petal fall and repeat every 14–18 days. Do not apply during periods when bees are active. Refer to WARNINGS regarding EXPORT FRUIT.
American (African) bollworm (Helicoverpa armigera)	10 ml/100 L water (250–350 ml/ha)	Apply at the first sign of infestation but not before 75% petal fall. Repeat if necessary. Refer to WARNINGS regarding resistance and EXPORT FRUIT.
Banded fruit weevil (Phlyctinus callosus)	Foliar application: 20 ml/100 L water (500–700 mL/ha)	Apply two high volume sprays. The first at 75% petal drop and the second 4 weeks later. If necessary, a third spray can be applied 4 weeks after the second spray to prevent late season damage. A single spray or a programme of sprays for weevils at this dosage rate will also suppress or even control low populations of red spider mite.

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Cotton: Synthetic pyrethroids should be sprayed in cotton only during the period 1 January to 28 February for the control of American (African) bollworm. No sprays should be necessary for American (African) bollworm control during the first eight weeks after plant emergence. Should Red bollworm be present a remedy which does not promote Red spider mite should be sprayed. Thereafter (10–12 weeks later) recommendations as below can be followed.

LAMDEX® 5 EC should only be applied 12 weeks after plant emergence and after regular scouting. Application should commence when five American (African) bollworm, two Spiny bollworm or Red bollworm larvae are found on 24 plants in an area of 15 ha or if 12 American (African) bollworm, 6 Red bollworm or 4 Spiny bollworm eggs are found on 24 plants in an area of 15 ha. Ensure thorough wetting of all plant parts. Larvae that are already inside bolls might not be controlled effectively. Repeat application after scouting indicates the necessity of another application.

CROP AND TARGET	DOSAGE	REMARKS
Cotton American (African) bollworm (H. armigera) Red bollworm (Diparopsis castanea) Spiny bollworms (Erias spp.) Cotton strainers (Dysdercus spp.)	Ground application: Plants smaller than 60 cm: 60 ml/ha Plants taller than 60 cm: 120 ml/ha	Ensure thorough wetting of all plant parts. Use at least 100 L water/ha for plants smaller than 60 cm and at least 200 L water/ha for plants taller than 60 cm.
	Tramline application: Plants smaller than 60 cm: 0.6 ml/100 m row. Plants taller than 60 cm: 1.2 mL/100 m row. Aerial application:	Apply in 50 L water/ha on plants less than 60 cm and 100 L water/ha on plants taller than 60 cm. See "Tramlines" below. Apply in at least 30 L water/ha. Use the lower
	66–132 ml/ha	dosage rate for plants smaller than 60 cm and the higher dosage rate for plants taller than 60 cm. Refer to WARNINGS regarding resistance.

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CROP AND TARGET	DOSAGE	REMARKS
Cotton continues American (African) bollworm (H. armigera) and Red bollworm (D. castanea)	ULV-appliaction: Plants smaller than 60 cm: 88 ml/ha in sunflower oil. Plants taller than 60 cm: 120 ml/ha in sunflower oil.	Use only acknowledged ULV applicators. Apply a total spray mixture volume of 3.0 L/ha. Make the LAMDEX® 5 EC dosage as indicated up with sunflower oil to a spray volume of 3.0 L. Refer to WARNINGS regarding resistance.

Tramlines – Cotton: Dosage recommendation is per single row. Therefore 1 tramline = 2 rows. Mount 5 suitable hollow cone nozzles over tramlines so that one nozzle sprays directly over the top of each row, one in between and two spray on the outside of each of the two rows. For the best results the two outside nozzles should be mounted on drop arms and should be set 45° upwards. 1 m row spacing = 10° 000 running m/ha.

Cruciferae American (African) bollworm (H. armigera) Diamond back moth larva (Plutella xylostella)	8 ml/100 L water	Commence application as soon as pest is noticed and repeat every 10–14 days. Apply as a high volume application at 500–1000 L spray mixture per ha. Add a suitable wetter to the spray mixture at the registered rate to ensure good coverage. Refer to WARNINGS regarding resistance.
Dry beans, green beans, groundnuts and peas American (African) bollworm	100 ml/ha	Commence application as soon as pest is noticed. Larvae should ideally be not bigger than 1 cm in length but definitely not bigger than 2 cm. Apply in 250–500 L water/ha depending on plant size. Repeat application if necessary.
(H. armigera)	100 ml/ha	Aerial application: (All crops excluding peas). Apply in at least 30 L water/ha. Refer to WARNINGS regarding resistance.

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CROP AND TARGET	DOSAGE	REMARKS
Grapes (Table & Wine) Weevils (Eremnus setulosus, E. cerealis and P. callosus)	Stem treatment: 20 ml/100 L water (200 ml/ha)	Start scouting for weevils activity from beginning of October and throughout the growing season. Commence application as soon as activity is noticed on the stem. Apply at 1000 L spray mixture/ha (0.5 L/stem) up to a height of 1.0 m. Wet the stem thoroughly and allow excess spray mixture to run down to the soil surrounding the stem. In the case of low growing vines, spray up to the first lateral branches. Repeat application every 3–4 weeks if necessary.
	Foliar application: 20 ml/100 L water (200 ml/ha)	If a dense canopy has formed, weevils tend to hide in there and do not migrate back to the stem. Commence application as soon as the first damage is noticed. Apply as a high-volume spray at 1000 L spray mixture/ha. Repeat application if necessary. Refer to WARNINGS regarding EXPORT FRUIT.
Lucerne Lucerne caterpillar (Colias electo)	80–100 ml/ha	Commence application as soon as pest is noticed. Apply in 250–500 L water/ha and ensure good coverage of plants. Use the lower rate in stands which is not very dense and the higher rate in dense stands. The larvae should not be bigger than 1 cm but definitely less than 2 cm in length at time of application. Follow-up applications may be necessary based on scouting to determine re-infestations.
American (African) bollworm (<i>H. armigera</i>)	100 ml/ha	Apply as above. Refer to WARNINGS regarding resistance.
Lupins American (African) bollworm (H. armigera)	110–120 ml/ha	Application should be done at a count of 1–2 larvae/m² before pods are penetrated by the larvae. Apply in 300 L water/ha. Use the lower rate for smaller plants and the higher rate for bigger plants.
	120 ml/ha	Aerial application: Apply in at least 30 L water/ha. Refer to WARNINGS regarding resistance.

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CROP AND TARGET	DOSAGE	REMARKS
Maize Stalkborer (<i>Busseola fusca</i>)	1.2 ml/100 m row (120 ml/ha)	Commence application as soon as eggs are found on 5% of the plants or 10% of the plants show typical shot hole damage. Apply directly into the funnels of plants before larvae migrate to the stem in 3 L water/100 m row. A second application might be necessary 10–14 days later.
	120 ml/ha	Aerial application: Apply in at least 30 L water/ha.
Chilo stalkborer (Chilo partellus)	1.2 ml/100 m row	Commence application as soon as 10% of the plants are damaged. Apply directly into the funnels in 3 L water/100 m row before the larvae migrate to the stalk. A second spray might be necessary before tasseling.
	120 ml/ha	Aerial application: Apply in at least 30 L water/ha.
American (African) bollworm (H. armigera)	100 ml/ha	Commence application as soon as pest is noticed from flowering onwards. Scout fields weekly for presence of pest. Ensure thorough coverage of plants and apply in 250–500 L water/ha depending on plant size. Ideally larvae should be less than 2 cm in length at application. Repeat application if necessary.
		Refer to WARNINGS regarding resistance.
Apricots, cherries, nectarines, peaches and plums American (African) bollworm (H. armigera) Banded fruit weevil (P. callosus)	10 ml/100 L water (250–350 ml/ha)	Commence application only after 75% petal drop if pest is noticed. Repeat if necessary. Refer to WARNINGS regarding resistance and EXPORT FRUIT.
	Stem treatment 20 ml/100 L water (200 ml/ ha)	Refer to remarks under "Grapes" for recommendations.
,	Foliar application 20 ml/100 L water (500–700 ml/ha)	Commence application as soon as the first signs of feeding are noticed. Repeat application 3–4 weeks later. Refer to WARNINGS regarding EXPORT FRUIT. Do not apply more than 2 applications of lamda-cyhalothrin/season to cherries.

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CROP AND TARGET	DOSAGE	REMARKS
Potatoes Tuber moth larva (Phthorimaea operculella) and	120 ml/ha	Apply in 250–500 L water/ha depending on plant size. Commence application as soon as pest is noticed. Repeat every 10–14 days and ridge at least twice during the growing season.
American (African) bollworm (<i>H. armigera</i>)	132 ml/ha	Aerial application: Apply in at least 30 L water/ha. Refer to WARNINGS regarding resistance.
Sorghum		
American (African) bollworm (<i>H. armigera</i>)	100 ml/ha	Commence application as soon as pest is noticed. Apply in at least 250–500 L water/ha. Repeat if necessary.
	100 ml/ha	Aerial application: Apply in at least 30 L water/ha. Refer to WARNINGS regarding resistance.
Maize stalkborer (<i>B. fusca</i>)	1.0 ml/100 m row	Commence application as soon as 5% of the plants show shothole damage and before the larvae migrate into the stalk. Direct the spray over the funnels and apply in 3 L water/100 m row. Will also control <i>Chilo</i> stalkborer if present.
	100 ml/ha	Aerial application: Apply in at least 30 L water/ha.
Soybeans African (American) bollworm (H. armigera)	120 ml/ha	Commence application as soon as pest is noticed and before pods are penetrated. Apply in 200–300 L water/ha. Ensure good coverage of plants. Repeat when necessary.
(in annigora)	120 ml/ha	Aerial Application: Apply in at least 30 L water/ha.
		Refer to WARNINGS regarding resistance.
Sweetcorn American (African) bollworm (H. armigera)	100 ml/ha	Commence application as soon as pest is noticed from flowering onwards. Scout fields weekly for presence of pest. Ensure thorough coverage of plants and apply in 250–500 L water/ha depending on plant size. Ideally larvae should be less than 2 cm in length at application. Repeat application if necessary.
	100 ml/ha	Aerial application: Apply in at least 30 L water/ha.
		Refer to WARNINGS regarding resistance.

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CROP AND TARGET	DOSAGE	REMARKS
Sweetcorn continues		
Pink stalkborer (Sesamia calamistis)	1.0 ml/100 m row	Ground application: Apply directly into the funnel of the plants 14 days after plant emergence. A follow-up application must be applied 10–14 days later and if necessary up to flowering to control re-infestations. Apply in a minimum of 3.0 L water/100 m row.
Tomatoes American (African) bollworm (H. armigera) Semi-looper (Chrysodeixes acuta)	7.5 ml/100 L water	Commence application when plants start to flower or when pest is noticed. Apply as a full cover spray at 500–1000 L spray mixture/ha depending on plant size up to 1 m tall. For plants taller than 1 m the water volume should be increased while maintaining the concentration. Repeat application every 7–10 days if necessary. Refer to WARNINGS regarding resistance.
Wheat American (African) bollworm	100 ml/ha	Commence application as soon as pest is noticed. Apply in 250–500 L water/ha. Repeat if necessary.
(H. armigera)	100 ml/ha	Aerial application: Apply in at least 30 L water/ha. Refer to WARNINGS regarding resistance.

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