



Denim[®] Fit

syngenta.

Reg. No. L 9978 Act No. 36 of 1947

A wettable soluble granular translaminar insecticide with stomach and insect growth inhibiting (IGI) action for the control of lepidoptera and thrips in various crops as listed.

GROUP	6	INSECTICIDE
	15	

Active Ingredients:
emamectin benzoate..... 100 g/kg
lufenuron (benzamide)..... 400 g/kg

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DANGER

Hazard statements: Harmful if swallowed or inhaled. Causes damage to organs (nervous system) through prolonged or repeated exposure. Very toxic to aquatic life with long-lasting effects.

Precautionary statements: Keep out of reach of children. **Prevention:** Do not breathe dust. Wash skin thoroughly after handling. **Response:** If inhaled, remove person from volatile contamination source to fresh air and keep comfortable for breathing. If you feel unwell, are exposed, or concerned, call a POISON CENTRE/doctor. Collect spillage. **Storage:** Store locked-up. Store in a well-ventilated place. **Disposal:** Dispose of contents/container to an approved waste disposal plant.

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UN 3082

Registration holder
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1. WARNINGS:

Hazard statements: Harmful if swallowed or inhaled. Causes damage to organs (nervous system) through prolonged or repeated exposure. Very toxic to aquatic life with long-lasting effects.

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

BARLEY.....	35 days
CRUCIFERAE (Cabbage group).....	7 days
DRY BEANS.....	35 days
EGGPLANT.....	7 days
GRAIN SORGHUM.....	35 days
GREEN BEANS.....	14 days
GROUNDNUTS.....	35 days
LEGUME VEGETABLES.....	14 days
MAIZE.....	35 days
PEPPERS (Capsicum group).....	3 days
SOYBEANS.....	35 days
SUNFLOWERS.....	35 days
SWEETCORN.....	14 days
TOBACCO.....	66 days
TOMATOES.....	3 days
WHEAT.....	35 days

NOTE: Compliance with these withholding periods will ensure that residues do not exceed local maximum residue limits (MRL), but the import tolerances of other countries might possibly be exceeded. If the crop to be treated is intended for export, consult the relevant importer or exporting body regarding the use of this product, MRL's and recommended withholding periods.

- Do not allow animals to feed on treated foliage.
- Overripe tomatoes, which have been treated with **DENIM FIT**, should not be used as cattle feed.
- Handle with care.
- Harmful if swallowed or inhaled.
- May cause skin and eye irritation.
- Very toxic to fish, crustaceans and aquatic invertebrates. May cause long-term adverse effects in the aquatic environment.
- Harmful to birds.

- Very toxic to bees. Do not apply or allow the product to drift to plants in bloom if bees are actively foraging in the treatment area.
- Store in original container. Keep container tightly closed in a dry, cool and well-ventilated place.
- Keep away from food, drink and feed.
- Protect from light.
- Keep out of reach of children, uninformed persons and animals.
- Unprotected workers must vacate the area being treated.
- Re-entry:** Do not enter treated area until spray deposit has dried unless wearing protective clothing.

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, 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, which 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:** Do not breathe dust. Wash skin thoroughly after handling. **Response:** If inhaled, remove person from volatile contamination source to fresh air and keep comfortable for breathing. If you feel unwell, are exposed, or concerned, call a POISON CENTRE/doctor. Collect spillage. **Storage:** Store locked-up. Store in a well-ventilated place. **Disposal:** Dispose of contents/container to an approved waste disposal plant.

- Avoid eye and skin contact.
- Do not inhale spray mist.
- Wash with soap and water immediately after use.
- Wash contaminated clothing after use.

- Do not eat, drink, or smoke while mixing or applying the product or before washing hands and face.
- Wear suitable protective clothing when mixing: Protective gloves, coverall, boots and a face shield.
- Do not spray during periods of bee activity.
- Avoid excessive drift. Do not treat if wind velocity exceeds two (2) meters per second (7 km/h).
- Clean applicator after use. Dispose of rinsate where it will not contaminate crops, grazing, rivers, dams and boreholes.
- Prevent contamination of food, feed, drinking water and eating utensils.
- Rinse the empty container three (3) times with a volume of clean water equal to a minimum of 10% of the container. Add the rinsate to the contents of the spray tank before destroying the empty container in the prescribed manner.
- Do not use the empty container for any other purpose.

First Aid

If poisoning is suspected, stop working immediately, call a doctor and present this label. Early signs of intoxication include dilation of pupils, muscular incoordination and muscular tremors.

Skin contact: Remove all contaminated clothing immediately and thoroughly wash the effected parts of the body with water for 15 - 20 minutes. If skin irritation persists, call a doctor. Wash contaminated clothing before re-use.

Eye contact: Hold eyes open and rinse slowly and gently with water for 15 -20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. Immediate medical attention is required.

Inhalation: Move patient to fresh air. If breathing is irregular or stopped, administer artificial respiration. Keep patient warm and at ease.

If swallowed: Seek medical advice immediately and present this label. Do NOT induce vomiting unless told to do so by the doctor.

Note: Never give anything by mouth to an unconscious patient.

Medical Treatment

- Toxicity can be minimized by early administration of chemical absorbents (e.g., activated charcoal). There is no specific antidote available. Treat symptomatically.
- If toxicity from exposure has progressed to cause severe vomiting, the extent of the resultant fluid and electrolyte imbalance should be gauged. Appropriate supportive parenteral fluid replacement therapy should be given, along with other required supportive measures (such as maintenance of blood pressure levels and proper respiratory functionality) as indicated by clinical signs, symptoms and measurements.
- In severe cases, observations should continue for at least several days until clinical condition is stable and normal. Since emamectin benzoate is believed to enhance GABA activity in animals, it is probably wise to avoid drugs that enhance GABA activity (e.g., barbiturates, benzodiazepines, valproic acid) in patients

with potentially toxic emamectin benzoate exposure.

3. RELEVANT SUBSTANCES:

Chemical name	
emamectin benzoate (ISO)	
Classification	Concentration (% w/w)
Acute Tox. 3; H301 Acute Tox. 3; H331 Acute Tox. 3; H311 Eye Dam. 1; H318 STOT SE 1; H370 (nervous system) STOT RE 1; H372 (nervous system) Aquatic Acute 1; H400 Aquatic Chronic 1; H410	≥ 10 - < 20
M-Factor (Acute aquatic toxicity): 10 M-Factor (Chronic aquatic toxicity): 10	

4. RESISTANCE MANAGEMENT:

DENIM FIT is a group code 6 and 15 insecticide. Any insect population may contain individuals naturally resistant to **DENIM FIT** and other group code 6 and 15 insecticides. The resistant individuals can eventually dominate the insect population if these insecticides are used repeatedly and exclusively in programs. These resistant insects may not be controlled by **DENIM FIT** or any other group code 6 and 15 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 other control methods (chemical, cultural, biological) into insect control programs.

Please note that both abamectin and emamectin benzoate belongs to group 6 insecticides. Do not tank-mix these products or apply **DENIM FIT** within three (3) weeks prior to or after an abamectin application.

Syngenta cannot accept responsibility for any losses that may result from the failure to control pests resistant to DENIM FIT.

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

5. PRODUCT PROPERTIES:

- **DENIM FIT** is a mixture of emamectin benzoate and lufenuron.
- Emamectin is a Lepidoptera larvicide of the avermectin family which acts as a GABA agonist resulting in the blocking of the nerve signals. The larva stops feeding, causing damage within minutes, and becomes irreversibly paralysed. Death occurs within four (4) days maximum.
- Emamectin acts mainly by ingestion, but does have short contact activity. It is translaminar and degrades rapidly on the leaf surface.

- Lufenuron is an IGR larvicide acting by inhibition of chitin biosynthesis, thus interfering with the formation of the cuticle. It displays strong stomach and moderate contact activity. It is non-systemic.
- Both emamectin and lufenuron are effective against pests resistant to organophosphates and pyrethroids.
- DENIM FIT** is highly active on leaf feeding Lepidopterous larvae. It also exhibits ovicidal activity in certain species. At high doses, it also controls tomato leafminer moth (*Phthorimaea absoluta* Syn. *Tuta absoluta*) and thrips.

6. DIRECTIONS FOR USE: Use only as indicated.

6.1 Compatibility

The compatibility of **DENIM FIT** with other products may be influenced by the formulation of the products involved as well as the quality of the water. Since the formulation of other products may change without the knowledge of Syngenta and the quality of water may vary from farm to farm, a physical compatibility test should always be carried out prior to application.

6.2 Mixing Instructions

- Fill the spray tank one quarter with clean water.
- Measure out the required quantity of **DENIM FIT** and add to the tank.
- Fill spray tank with water while maintaining agitation to ensure thorough mixing.
- Maintain agitation during spraying.
- Use the prepared mixture immediately. Do not prepare more spray mixture than is needed for immediate application. Do not allow to stand overnight.

6.3 Equipment and Spray Volume

- Thorough and even coverage of the crop is essential, in particular also of the lower plant parts, but do not spray to the point of run-off.
- Ensure the equipment is correctly calibrated to give an even distribution at the correct volume.
- Tractor sprayers with boom and nozzles, tractor mist blowers, knapsack sprayers and motorised mist blowers are recommended.
- Do not apply during the heat of the day, if the plants are wet, or if rain is imminent.

6.4 Application Rates

BARLEY, CRUCIFERAE, DRY BEANS, GRAIN SORGHUM, GROUNDNUTS, LEGUME VEGETABLES [succulent seeds and immature pods; includes peas (green) and beans (green)], **MAIZE, SOYBEANS, SUNFLOWER, SWEETCORN and WHEAT**

Pest	Dosage
Armyworms (<i>Spodoptera</i> spp.)	100 – 125 g/ha
False armyworm (<i>Leucania loreyi</i>)	
Remarks	
<ul style="list-style-type: none"> Apply DENIM FIT at the first signs of infestation. 	

- Apply as a block of two (2) applications seven (7) days apart and then alternate with a product with a different mode of action, e.g., AMPLIGO (L8685).
- Note:** For maize and sweetcorn, apply as soon as feeding damage is observed (small windows in the leaves), when larvae are still outside the cobs. Once inside, larvae will not be controlled.

CRUCIFERAE

(Cabbage group: Includes broccoli, cabbage, baby cabbage and cauliflower)

Pest	Dosage
Diamond-back moth (<i>Plutella xylostella</i>)	250 g/ha
African Bollworm (<i>Helicoverpa amigera</i>)	
Semi-looper (<i>Chrysodeixis</i> sp.)	
Cutworms (<i>Agrotis</i> spp.)	
Thrips (<i>Frankliniella occidentalis</i>)	
Remarks	
<ul style="list-style-type: none"> Apply three (3) consecutive applications, seven (7) days apart, starting as soon as the pest is noticed. Apply in sufficient water volumes to ensure adequate coverage. Do not make more than three (3) applications per season. 	
Spray volume	
Tractor application: Use at least 500 l water/ha.	

CAPSICUM GROUP (PEPPERS)

(Includes baby peppers, chillis, piquante peppers and sweet peppers)

Pest	Dosage
African Bollworm (<i>Helicoverpa amigera</i>)	250 g/ha
Semi-looper (<i>Chrysodeixis acuta</i>)	
Thrips (<i>Frankliniella occidentalis</i>)	
Remarks	
<ul style="list-style-type: none"> Apply three (3) consecutive applications, 7 days apart, starting as soon as the pest is noticed. Apply in sufficient water volumes to ensure adequate coverage. Do not make more than three (3) applications per season. 	
Spray volume	
Tractor application: Use at least 500 l water/ha.	
Tomato leafminer moth (<i>Phthorimaea absoluta</i> Syn. <i>Tuta absoluta</i>)	200 - 250 g/ha
Remarks	
<ul style="list-style-type: none"> Apply at the first signs of infestation, with a maximum of two (2) applications at a 7 - 10-day interval. After two (2) applications, change to chemicals with a different mode of action to prevent the build-up of resistance. 	

EGGPLANT

Pest	Dosage
African Bollworm (<i>Helicoverpa armigera</i>) Armyworms (<i>Spodoptera</i> spp.)	75 – 170 g/ha
Remarks <ul style="list-style-type: none"> Apply when larvae are first observed. Applications may be repeated to maintain control and allow a minimum of seven (7) days between applications. Do not make more than three (3) applications per season. Ensure thorough spray coverage. Use the low rate when targeting light infestations of small larvae and higher rates during periods of heavy infestations or under very hot and sunny conditions. 	
Tomato leafminer moth (<i>Phthorimaea absoluta</i> Syn. <i>Tuta absoluta</i>)	200 - 250 g/ha
Remarks <ul style="list-style-type: none"> Apply at the first signs of infestation, with a maximum of two (2) applications at a 7 - 10-day interval. After two (2) applications, change to chemicals with a different mode of action to prevent the build-up of resistance. 	

GREEN BEANS

Pest	Dosage
Cutworms (<i>Agrotis</i> spp.) African Bollworm (<i>Helicoverpa armigera</i>) Semi-looper (<i>Chrysodeixis</i> sp.) Thrips (<i>Frankliniella occidentalis</i>)	250 g/ha
Remarks <ul style="list-style-type: none"> Apply three (3) consecutive applications, seven (7) days apart, starting as soon as the pest is noticed. Apply in sufficient water volumes to ensure adequate coverage. Do not make more than three (3) applications per season. 	
Spray volume Tractor application: Use at least 500 ℓ water/ha	

TOBACCO

Pest	Dosage
Potato tuber moth (<i>Phthorimaea operculella</i>)	12.5 g/100 ℓ water
Remarks <ul style="list-style-type: none"> The first application must be done 2 - 3 days after transplant, depending on the pest pressure in the area. Apply as a directed spray in a 30 cm wide band over the row. More than one (1) successive application of DENIM FIT is required to obtain acceptable control. Apply 4 - 6 applications at 7-day intervals. 	
Tomato leafminer moth (<i>Phthorimaea absoluta</i> Syn. <i>Tuta absoluta</i>)	200 - 250 g/ha
Remarks	

TOBACCO cont.

<ul style="list-style-type: none"> Apply at the first signs of infestation, with a maximum of two (2) applications at a 7 - 10-day interval. After two (2) applications, change to chemicals with a different mode of action to prevent the build-up of resistance.

TOMATOES

Pest	Dosage
African bollworm (<i>Helicoverpa armigera</i>) Tomato semi-looper (<i>Chrysodeixis acuta</i>) Potato tuber moth (<i>Phthorimaea operculella</i>)	15 g/100 ℓ water + 0.25% COMPLEMENT SUPER or light mineral oil
Remarks <ul style="list-style-type: none"> Apply as soon as pest is noticed in a block of two (2) applications seven (7) days apart. Do not apply the second DENIM FIT block application within three (3) weeks of the first block application. If re-infestation occurs within three (3) weeks of the second DENIM FIT application, an unrelated chemistry should be used e.g., group 5 - Spinosad, group 13 – Chlorfenapyr or group 22 – Indoxacarb. Do not exceed four (4) applications per crop cycle. Do not use less than 15 g DENIM FIT/ha. Use a penetrant/wetter or light mineral oil with DENIM FIT. Do not add a sticker. 	
Tomato leafminer moth (<i>Phthorimaea absoluta</i> Syn. <i>Tuta absoluta</i>)	200 - 250 g/ha
Remarks <ul style="list-style-type: none"> Apply at the first signs of infestation, with a maximum of two (2) applications at a 7 - 10-day interval. After two (2) applications, change to chemicals with a different mode of action to prevent the build-up of resistance. 	

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