

Fawligen

Active Ingredient*:

<i>Spodoptera frugiperda</i> MNPV-3AP2:.....	32.00%
Other Ingredients:.....	68.00%
Total:.....	100.00%

*Contains a minimum of 7.5 x10⁹ occlusion bodies per mL product

KEEP OUT OF REACH OF CHILDREN

CAUTION

See additional precautionary and first aid statements on the back panel

Biological insecticide for the integrated control of *Spodoptera frugiperda* (fall armyworm) and *Spodoptera exigua* (beet armyworm) on specified food and non-food crops

GROUP	31	INSECTICIDE
-------	----	-------------



Net Contents: 1 gallon

EPA Registration No: 87978-4 EPA Est. Number: 

Manufactured for:
AgBiTech Pty Ltd
8 Rocla Court, Glenvale
Queensland Australia 4350
Product of USA



PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION

Causes moderate eye irritation. Avoid contact with eyes and clothing. Harmful if inhaled. Avoid breathing spray mist. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

FIRST AID

If in eyes:	<ul style="list-style-type: none"> Hold eye 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 eye. Call a poison control center or doctor for treatment advice.
If inhaled:	<ul style="list-style-type: none"> Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for treatment advice.

HOTLINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For medical emergencies, call the poison control center at 1-800-222-1222. For general information concerning this product, call the National Pesticide Information Center (NPIC) at 1-800-858-7378 seven days a week, 8 AM to 12 PM PST or at <http://npic.orst.edu>.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Protective eyewear
- Long-sleeved shirt and long pants
- Waterproof gloves
- Shoes plus socks
- For ULV Oil applications wear chemical resistant gloves made of barrier laminate, nitrile rubber ≥ 14 mils, neoprene rubber ≥ 14 mils, or viton ≥ 14 mils

Mixers/loaders and applicators must wear a NIOSH-approved particulate respirator with any N, R or P filter with NIOSH approval number prefix TC-84A; or a NIOSH-approved powered air purifying respirator with an HE filter with NIOSH approval number prefix TC-21C. Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.

Follow the manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables are available, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

Users should:

- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

For terrestrial uses. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash waters or rinsate.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farm, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification and emergency assistance. It also contains specific instructions and exemptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box apply only to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 4 hours.

PPE required for early entry to treated areas (that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water), is:

- Protective eyewear
- Coveralls
- Waterproof gloves
- Shoes plus socks
- For ULV Oil applications wear chemical resistant gloves made of barrier laminate, nitrile rubber ≥ 14 mils, neoprene rubber ≥ 14 mils, or viton ≥ 14 mils and protective eyewear.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not use this product until you have read the entire label. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirement specific to your State or Tribe, consult the State or Tribal agency responsible for pesticide regulation.



AgBiTech Pty Ltd
8 Rocla Court, Glenvale
QLD Australia 4350
www.agbitech.com

Fawligen is a registered trademark of AgBiTech Pty Ltd.

PRODUCT INFORMATION

This product contains a biological insecticide for the control of the following moth larvae on a wide range of crops, as specified in the table below:

Fall armyworm *Spodoptera frugiperda*

Beet armyworm *Spodoptera exigua*

INSTRUCTIONS FOR USE

Fawligen (*Spodoptera frugiperda* multiple nucleopolyhedrovirus - SfMNPV) is a highly specific pathogen of *Spodoptera* spp. The effectiveness of Fawligen is dependent on a number of important factors; larval size, environmental conditions, application and the feeding behavior of the pest. Because of the requirement for adequate timing of application, coverage, and weather conditions, the performance of Fawligen may be variable. Once infected, larvae can take up to 8 days to die, although feeding activity is greatly reduced within 1 to 3 days post infection, dependent on larvae size. Daytime temperatures of 65°F to 95°F are ideal for the infectivity by Fawligen. Infected larvae will amplify the virus, and following death will release large amounts of viral occlusion bodies that can result in ongoing control, particularly under environmental conditions suitable for the virus in Fawligen (warm and humid conditions).

Good coverage of the feeding sites of the larvae is essential, as the product needs to be ingested to be effective. If larvae are feeding low down in a heavy crop canopy, and application of Fawligen does not reach these areas, initial control from the spray will be sub-optimal. However, larvae that die from the Fawligen spray will release large amounts of SfMNPV, which will spread throughout the crop canopy.

Fawligen will provide between 60 and 90% control, with greater control expected on smaller larvae under ideal application conditions. Fawligen should only be used to target larvae less than half an inch long (3rd instar - 13 mm), though is most effective on larvae less than 0.3 of an inch (2nd instar - 7 mm), though is most effective on larvae less than 3/8" long (3rd instar - 10 mm). Larvae at the higher end of the recommended size spectrum will take longer to die and cause more significant damage prior to death.

Good coverage plus targeting actively feeding small larvae are the key factors in ensuring maximum performance of Fawligen. For this reason, apply Fawligen to coincide with optimum environmental conditions for application and larval activity, such as periods of high humidity and warm (>65°F) conditions. Under sub-optimal conditions where application cannot be delayed, increasing application volume and droplet size can improve coverage and performance.

Under high pest pressure or sub-optimal application conditions, or when immediate protection against damage is required, additional control options should be considered. Avoid applying Fawligen if heavy rain (greater than 0.4 inches per hour) is expected within 1 hour after application.

CROPS, APPLICATION RATES AND CROP SPECIFIC INFORMATION

Crops	Rate of Fawligen per acre	Additional Information
Sorghum	0.5 to 2.0 fl. oz.	Use lower application rates when targeting larvae smaller than 0.3 inches in length (1st and 2nd instar) and in mixtures with sprays for midge control (not ULV). Use higher application rates when targeting larvae larger than 0.3 inches in length (3rd instar) or under high pressure situations. Applications that are targeted when 50% of heads have reached 100% flowering will provide good control.
Grain Cereal (Crop Group 15) including: Maize, Popcorn, Rice Alfalfa (hay and seed) Oilseeds (Crop Group 20) including: Flax seed, Canola, Safflower, Sunflower Peanuts Vegetable, legume (dried) (Crop Group 6) including: Adzuki bean, Broad bean, Chickpeas, Cowpea, Faba bean, Field pea, Kidney bean, Lablab, Lentil, Lima bean, Lupin, Mung bean, Navy bean, Pigeon pea, Vetch	1.0 to 1.6 fl. oz.	Use lower application rates as a preventive measure in vegetative crop stages. Use the high application rate when the pest population has reached economic threshold.
Soybean	1.0 to 1.6 fl. oz.	Use lower application rates as a preventive measure in vegetative crop stages. Use the high application rate when the pest population has reached economic threshold.
Sweet Corn	1.0 to 2.4 fl. oz.	Application should be made from the vegetative stages until silking. Applications during silking should employ a high application rate and be in conjunction with other control measures. Application of low rates at regular (3 to 5 day) intervals, particularly via overhead irrigation water, is an effective strategy from vegetative stages, through row tassel to silking.
Turf and Pastures	0.5 to 2.0 fl. oz.	Use lower application rates when targeting larvae smaller than 0.3 inches in length (1st and 2nd instar). Use higher application rates when targeting larvae larger than 0.3 inches in length (3rd instar) or under high pressure situations.
Vegetables, root and tuber (Crop Group 1) including: Carrot, Sweet potato, Sugar beet, Potato Vegetables, Brassica leafy (Crop Group 5) including: Broccoli, Brussels sprouts, Cabbages, Cauliflower, Chinese broccoli, Kale, Mustard greens, Mustard spinach, Rape greens) Vegetable leafy, except brassica (Crop Group 4) including: Celery, Endive, Lettuce, Roquette, Silver beet, Spinach Vegetables, fruiting (crop Group 8 – 10) including: Eggplant, Okra, Peppers, Tomato Vegetable legume (succulent)(Crop Group 6) including: Green beans, Green peas, Snow peas, Sugar snap peas Vegetable Cucurbits (Crop Group 9) including: Cucumber, Melons, Pumpkins, Summer and winter squash, Watermelon, Zucchini Berry and small fruit group (Crop Group 13 – 07) including: Blackberry, Blueberry, Boysenberry, Cranberry, Currants, Gooseberry, Raspberry, Strawberry Fruit, pome (Crop Group 11 – 10) including: Apples, Nashi, Pear Ornamental Flowers and Plants Avocado Asparagus	1.0 to 2.4 fl. oz.	Use a higher application rate when flowers, fruit or economic parts of the crop are present, under high pest pressure conditions or to control larvae larger than 0.5 inches in length. Use lower application rate during vegetative stages of crop production. Application of low rates at regular (3 to 5 day) intervals, particularly via overhead irrigation water, is an effective strategy in horticultural crops.
Cotton	2.0 to 2.4 fl. oz.	High leaf pH in cotton causes rapid NPV deactivation, giving Fawligen very short residual activity and resulting in highly variable performance in this crop. Fawligen should not be solely relied upon when larvae numbers are above economic threshold in cotton.

MIXING INSTRUCTIONS

Shake the container well before use. Spray water pH should be neutral (pH 7.0) – spray water pH above 8 may damage the virus and performance will be reduced. If needed, use a suitable buffer or acidifier. If mixing with other pesticides or foliar fertilizers in water, add Fawligen to the spray tank after the other products are thoroughly diluted. Fawligen should be applied within 10 hours after mixing. Do not let stand overnight.

Compatibility:

In water: Fawligen is highly compatible with the majority of herbicides, insecticides, fungicides and foliar fertilizers when mixed in water. Ensure that the mixture has a pH of 8 or less before adding Fawligen as higher pH levels will damage the virus.

In oil (ultra low volume): For ULV application in oil, Fawligen is not compatible with other pesticides, since the undiluted solvents in these products can damage the virus.

APPLICATION INSTRUCTIONS

Use application parameters (nozzles, swath width, pressure, boom height, speed, volume, etc.) to ensure thorough coverage of the target area.

I. Vegetable, Legume (succulent and dried), Root and Tuber Vegetables (Crop Group 1) including: Carrot, Sweet potato, Sugar beet, Potato; Brassica (Cole) Leafy Vegetables (Crop Group 5) including: Broccoli, Brussels sprouts, Cabbage, Cauliflower, Chinese broccoli, Kale, Mustard greens, Mustard spinach, Rape greens); Leafy Vegetables (Crop Group 4) including: Celery, Endive, Lettuce, Roquette, Silver beet, Spinach; Fruiting Vegetables (Crop Group 8 – 10) including: Chili, Eggplant, Okra, Pepper, Tomato; Cucurbit Vegetables (Crop Group 9) including: Cucumber, Melon, Pumpkin, Summer and winter squash, Watermelon, Zucchini; Berries Group (Crop Group 13 – 07) including: Blackberry, Blueberry, Boysenberry, Cranberry, Currant, Gooseberry, Raspberry, Strawberry; Pome Fruit (Crop Group 11 – 10) including: Apple, Nashi, Pear; Ornamental Flowers and Plants; Avocado; Asparagus; Tobacco.

Ground Rig

Apply Fawligen by ground rig or hand-held equipment in a minimum of 40 gallons of water per acre.

II. Sorghum, Grain Cereal, Alfalfa, Oil Seeds, Peanut, Soybean, Sweet Corn, Turf and Pastures, Cotton.

Ground Rig

Apply Fawligen in a minimum of 10 gallons of water per acre.

Aerial – High Volume

Apply Fawligen in a minimum of 3 gallons of water per acre. This application method is particularly susceptible to droplet evaporation, especially during hot and dry conditions (temperature greater than 85°F and relative humidity less than 40%). Droplet evaporation will reduce coverage, which can have a detrimental impact on performance. During hot and dry conditions avoid using this application method – wait until conditions favor good coverage or apply in ULV (see below). Alternatively, if application in water by air during hot and dry conditions cannot be avoided, increase application volume and/or use an anti-evaporation additive (such as an emulsifiable oil) to improve coverage.

Aerial – Low Volume (Sorghum Only)

Apply Fawligen in a minimum of 1 gallon of water per acre and include an anti-evaporation additive (such as 2% emulsifiable oil).

Aerial – Ultra-Low Volume (ULV)

Use an approved oil carrier and apply in a minimum volume of 1 quart per acre using micronair nozzles. When applying Fawligen in ULV, DO NOT tank mix with other pesticides or fertilizers (refer to Compatibility).

Chemigation (via overhead irrigation water):

Fawligen can be effectively applied to crops in overhead irrigation water. The product should be introduced to the irrigation water at the appropriate rate using irrigation equipment. If the product is diluted in water prior to injection into the irrigation water, ensure that the dilution water is clean and not silty with a pH of 7 or less and ensure there is constant agitation. Preferably, rainwater should be used for dilution. Ensure any diluted Fawligen is used within 10 hours of mixing.

For one-pass mobile irrigators (such as centre pivot, lateral move, end tow, side roll, traveler, big gun), continuously and evenly introduce the required quantity of Fawligen into the irrigation water over the course of irrigation. Apply Fawligen in no more than 0.5 inches of irrigation water. For static irrigators (such as solid set or hand move), introduce the required amount of Fawligen into the irrigation water just prior to completion of the irrigation period, to maximize the concentration of Fawligen applied and the amount that remains on the crop. See the CHEMIGATION section (following) for additional information.

CHEMIGATION

General Requirements:

1. Apply this product only through sprinkler (including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move) irrigation systems. Do not apply this product through any other type of irrigation system including drip (trickle) systems.
2. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.
3. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers, or other experts.
4. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.
5. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make any necessary adjustments should the need arise.

Requirements for Chemigation Systems Connected to Public Water Systems:

1. Public water supply means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of 25 individuals daily at least 60 days throughout the year.
2. Chemigation systems connected to the public water systems must contain a functional, reduced-pressure zone (RPZ), backflow preventer or the functional equivalent in the water supply upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the flow outlet end of the fill pipe and the top or the overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
3. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
4. The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
5. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.

6. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump), effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.

Requirements for Sprinkler Chemigation:

1. The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
3. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
5. The irrigation line or water pump must include a functional pressure switch, which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
6. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump), effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.

RAIN FASTNESS

The majority of virus uptake by larvae occurs within 1 hour post-application. For this reason, it is best to avoid applying Fawligen if heavy rain is expected within one hour following application. However, do not delay application if only moderate rain is expected, or heavy rain is not imminent.

DAYS TO HARVEST

There are no restrictions on applying Fawligen up to the time of harvest.

WARRANTY

This product is warranted to contain the amount of active ingredients as described in this label and that the product will be as effective as intended if properly transported, used, and applied per the label instructions. The effectiveness of this product may be degraded by improper storage, transportation or handling and may be subject to environmental factors out of AgBiTech Pty Ltd's control. The user must monitor the performance of the product as climatic, geographical or biological variables and/or developed resistance may affect the results obtained. To the extent consistent with applicable law, AgBiTech Pty Ltd and its subsidiaries makes no other warranties, express or implied, of merchantability or of fitness for a particular purpose or otherwise, that extend beyond the statements made on this label or accepts no responsibility in respect of this product. To the extent consistent with applicable law, AgBiTech Pty Ltd and its subsidiaries disclaim any liability whatsoever for special, incidental or consequential damages resulting from the use or handling of this product.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

PESTICIDE STORAGE

Care must be taken to avoid exposure of Fawligen to high temperatures (above 104°F). Packaged sealed product can be exposed to direct sunlight for brief periods of time (<2 hours), but should be kept out of direct sunlight.

Fawligen can and should be handled in the same way seeds and inoculant products are handled.

Fawligen stored in air-conditioned rooms (< 77°F) will be viable for at least 6 months

Fawligen stored in cool rooms and refrigerators (39°F to 59°F) will be viable for at least 36 months

Note. Exposure of Fawligen to temperature from 77°F to 104°F for short periods (<36 hours) will not affect efficacy. Transport time of 36 hours or less in non-refrigerated, covered trucks is acceptable as long as the product does not exceed 104°F.

PESTICIDE DISPOSAL

To avoid wastes, use material in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments or by industry).

CONTAINER HANDLING

[Plastic containers with capacities equal to or less than 5 gallons:]

Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinance. If burned, stay out of smoke.