LALGUARD M52 OD

Metarhizium brunneum (formerly known as *Metarhizium anisopliae*) Strain F52	GROUP	UNF	INSECTICIDE

ACTIVE INGREDIENT:

Metarhizium brunneum (formely known as *Metarhizium anisopliae*) Strain F52*	11.0%
OTHER INGREDIENTS:**	89.0%
TOTAL:	100.0%

** Contains a minimum of 2.0 x 10^9 Colony Forming Units (CFU)/gram of product*
*** Contains petroleum distillates*

KEEP OUT OF REACH OF CHILDREN

CAUTION

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Causes moderate eye irritation. Harmful if inhaled, absorbed through skin, or swallowed. Avoid contact with skin, eyes, or clothing. 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.

REFER TO DIRECTIONS OF USE WITHIN THIS BOOKLET

SHAKE WELL BEFORE USING

NET CONTENTS:
34 fl. oz. (1 L)

LALLEMAND

BIOINSECTICIDE

LALGUARD M52 OD

FIRST AID
IF IN EYES: 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: 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 further treatment advice.
IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 – 20 minutes. Call a poison control center or doctor for treatment advice.
IF SWALLOWED: Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.
HOTLINE NUMBER
Have the product container or label with you when calling a poison control center or doctor or going for treatment. For emergency information on this pesticide product (including health concerns, medical emergencies, or pesticide incidents) call the National Pesticide Information Center at 1-800-858-7378 6:30 a.m. – 4:30 p.m. Pacific Time (PT), seven days a week. During other times call the poison control center at 1-800-222-1222.
NOTE TO PHYSICIAN
Contains petroleum distillate. Vomiting may cause aspiration pneumonia.

9LK14GFGC–03/25

Batch No.: See printing on bottle
EPA Est. No.: 264-FRA-003
EPA Reg. No.: 64137-33

7 640182 122591

Manufactured for:
Danstar Ferment AG/
LALLEMAND PLANT CARE
Poststrasse 30
Zug CH-6300 Switzerland

Marketed and distributed by:
Lallemand Specialities Inc. /
LALLEMAND PLANT CARE
6120 West Douglas Avenue
Milwaukee, WI 53218
United States

LALLEMANDPLANTCARE.COM

SPECIMEN

PERSONAL PROTECTIVE EQUIPMENT

Mixers/loaders, applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Barrier laminate, nitrile rubber, neoprene rubber, or Viton gloves
- Shoes and socks
- Protective eyewear

Wear a minimum of a NIOSH-approved particulate filtering facepiece respirator with any R, or P filter; OR a NIOSH-approved elastomeric particulate respirator with any, R, or P filter; OR a NIOSH-approved powered air-purifying respirator with an HE filter. Repeated exposures to high concentrations of microbial proteins can cause allergic sensitization.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing and other absorbent material that have been drenched or heavily contaminated with the product's concentrate. Do not reuse them.

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: This product is toxic to aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean highwater mark. Do not contaminate water when disposing of equipment wash water or rinsate. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Avoid drift or run off into storm drains, drainage ditches, or surface waters. Applying this product in calm weather when rain is not predicted for the next 24 hours will help to maximize the chances that wind, or rain will not blow or wash pesticide off the treatment area. Rinsing application equipment over the treated area will help avoid run off to water bodies or drainage systems.

PHYSICAL OR CHEMICAL HAZARDS

For spill, leak, fire, exposure, or accident, call CHEMTREC at 1-800-424-9300, day or night.

DIRECTIONS FOR USE

It is a violation of federal law to use this product in a manner inconsistent with its labeling. 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 requirements specific to your state or tribe, consult the state or tribe agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, 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 exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply 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.

EXCEPTION: If the product is soil incorporated or soil injected, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

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

- Coveralls
- Barrier laminate, nitrile rubber, neoprene rubber, or Viton gloves
- Shoes plus socks
- Protective eyewear
- NIOSH-approved particulate filtering facepiece respirator with any R, or P filter; OR a NIOSH-approved elastomeric particulate respirator with any, R, or P filter; OR a NIOSH-approved powered air-purifying respirator with an HE filter.

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses.

Keep unprotected persons out of treated areas until sprays have dried.

SPECIMEN

GENERAL

LALGUARD M52 OD is composed of spores of the insect pathogenic fungus *Metarhizium brunneum* (formerly known as *Metarhizium anisopliae*). Once the product is sprayed onto foliage or drenched into the soil, insects that come into contact with the fungus will become infected. The spores of *Metarhizium brunneum* (formerly known as *Metarhizium anisopliae*) attach to the surface of the insect, germinate and begin to grow. It will penetrate the exoskeleton of the insect and grow inside the insect, causing the insect to die. Under moderate temperatures it usually takes 3 to 7 days once the insect is exposed for death to occur. At very cold or hot temperatures death may occur more slowly. The fungal spores will be more persistent when incorporated in the soil, especially in potting media, than when applied to foliage.

MODE OF ACTION AND APPLICATION TIMING: Application frequency will depend on the environment to which LALGUARD M52 OD is applied and the target insects' life cycle. Persistence of LALGUARD M52 OD will generally be higher when incorporated into soil and higher in foliar applications in greenhouses than outdoor foliar applications.

LALGUARD M52 OD may be used for foliar applications to control insects with a high reproductive potential. It is best to begin applying LALGUARD M52 OD at early stages of population development. Repeat applications at 5 to 10 day intervals, matching application interval to insect and population. High insect populations of whiteflies may require 2 to 5 day intervals. Applications to leaf litter and turf may be done on a 4 to 6 week interval with an expected residual efficacy of a few months.

Applications of drenches to potting media may be done as appropriate to standard pest management practices and the product may remain efficacious for up to one year. When possible, application to soil should be done in advance of a target insect's life stage that will be passing through the first six inches of soil, with an expected residual efficacy of a few months. Although the penetration of LALGUARD M52 OD into soil will vary greatly with soil type and level of irrigation, it is best to target populations as close to the surface as possible or time application of LALGUARD M52 OD with a soil incorporation event.

PRE-HARVEST INTERVAL: Pre-harvest interval for LALGUARD M52 OD is zero (0) days.
LALGUARD M52 OD may be applied up to the day of harvest.

SITES FOR USE

TERRESTRIAL NON-FOOD CROPS: LALGUARD M52 OD can be used on the crops listed in Table 1 (greenhouse, nursery and outdoor sites including urban and suburban turf).

FOOD CROPS: LALGUARD M52 OD can be used on the crops listed in Table 1 (including greenhouse, nursery and outdoor agricultural sites).

APPLICATION INSTRUCTIONS — SHAKE WELL BEFORE USING

MIXING INSTRUCTIONS: LALGUARD M52 OD may be applied using hand-held, ground and/or aerial spray equipment. LALGUARD M52 OD contains emulsifiers and mixes readily in water. Fill spray tank with half of the desired amount of water and start agitation. Slowly add desired amount of LALGUARD M52 OD to spray tank. Add remaining desired amount of water. Triple rinse empty LALGUARD M52 OD container with water and add rinse water to spray tank. **Shake well before using**. Continue agitation throughout spraying. Once open, use entire contents of bottle within 24 hours after mixing.

PLANT SAFETY: LALGUARD M52 OD has been determined to be efficacious for the uses described on this label but has not been tested on all varieties of listed plant species for safety. Test LALGUARD M52 OD on a small number of plants to check for potential damage before applying to a large number of plants. Do not apply on poinsettias after bract formation.

FOLIAR APPLICATION, HIGH VOLUME: Apply LALGUARD M52 OD at a rate of 8–32 fl. oz. (½ pint to 1 quart) per 100 gallons of water in high volume sprays (0.5 to 2.5 teaspoons LALGUARD M52 OD per gallon of water). Mix well by external mixing, in-tank mixing, or pump circulation to form emulsion. Do not apply at pressures above 200 PSI. **Spray to wet all foliage, but avoid runoff**.

FOLIAR APPLICATION, LOW VOLUME: Apply 8 – 64 fl. oz. (½ pint to 2 quarts) of LALGUARD M52 OD to one (1) acre. Follow spray equipment manufacturer's instructions for final spray volume to obtain adequate coverage. Do not apply at pressures above 200 PSI. Do not apply through a thermal pulse fogger.

DRENCH: Add from 40 to 80 fluid ounces of LALGUARD M52 OD to 100 gallons of drench solution. For pots: drench application should be thoroughly watered-in without causing water to come out of the bottom of the pots – depending on the soil type and moisture this will be around 8 ounces of mixed product per gallon pot. **For soil applications:** drench application should be thoroughly watered-in without causing water to move laterally – this will vary by soil type and moisture holding capacity at time of application. Applications should be targeted to move LALGUARD M52 OD into the top 2 inches of soil.

FOLIAGE AND ROOT PLANT DIP: To prepare dip solution, thoroughly mix ½ to 1 fluid ounce of LALGUARD M52 OD per gallon of water. Please note that dip solution must be used within 24 hours after mixing. When treating plants by the dip method, thoroughly wet all plant surfaces to be treated. Allow treated plant foliage to dry prior to potting and watering.

APPLICATION TO TURF: Apply 2 to 3 fluid ounces of LALGUARD M52 OD to 1000 square feet in residential and institutional lawns and landscape perimeters. Applications for blacklegged ticks are to be focused on the border of manicured lawns and paths creating a minimum of a 9 foot border. Applications for more mobile ticks such as lonestar tick are to be applied on a wider area and include the entire lawn. Apply using a minimum of 4 gallons of water per 1000 square feet. Make initial applications in the spring before ticks become active and continue at 4 to 8 week intervals throughout their active season.

TANK MIX COMPATIBILITY: LALGUARD M52 OD contains a fungal active. Do not mix LALGUARD M52 OD with fungicides. If adjuvants are required when applying LALGUARD M52 OD in combination with other pesticides, contact your dealer or Lallemand Plant Care representative for specific recommendations.

Observe the most restrictive of the labeling limitations and precautions of all products used in mixtures.

CONTROLLING PESTICIDE DRIFT: Do not allow spray to drift from the application site and contact people, nontarget crops, aquatic and wetland areas, or animals.

For ground boom applications, apply with nozzle height no more than 4 feet above the ground or crop canopy and when wind speed is 10 mph or less at the application site as measured by an anemometer. Use a fine or medium spray according to ASAE 572 definition for standard nozzles or VMD for spinning atomizer nozzles.

For orchard/vineyard airblast applications, do not direct spray above trees/vines and turn off outward pointing nozzles at row ends and outer rows. Apply only when wind speed is 3–10 mph at the application site as measured by an anemometer outside of the orchard/vineyard on the upwind side.

For aerial applications, the boom width must not exceed 75% of the wingspan or 90% of the rotary blade. Use upwind swath displacement and apply only when wind speed is 3–10 mph as measured by an anemometer. Use medium or coarser spray according to ASAE 572 definition for standard nozzles or VMD for spinning atomizer nozzles. If application includes a no-spray zone, do not release spray at a height greater than 10 feet above the ground or the crop canopy.

The applicator also must use all other measures necessary to control drift.

SPECIMEN

SPRAY DRIFT ADVISORIES

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT. BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.

IMPORTANCE OF DROPLET SIZE

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

Controlling Droplet Size – Ground Boom

- Volume - Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.
- Pressure - Use the lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.
- Spray Nozzle - Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

Controlling Droplet Size – Aircraft

- Adjust Nozzles - Follow nozzle manufacturers recommendations for setting up nozzles. Generally, to reduce fine droplets, nozzles should be oriented parallel with the airflow in flight.

BOOM HEIGHT – Ground Boom

For ground equipment, the boom should remain level with the crop and have minimal bounce.

RELEASE HEIGHT - Aircraft

Higher release heights increase the potential for spray drift. When applying aerially to crops, do not release spray at a height greater than 10 ft above the crop canopy, unless a greater application height is necessary for pilot safety.

SHIELDED SPRAYERS

Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

TEMPERATURE AND HUMIDITY

When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

TEMPERATURE INVERSIONS

Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing. Avoid applications during temperature inversions.

WIND

Drift potential generally increases with wind speed. AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS. Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

Table 1. Crops on which LALGUARD M52 OD may be used:

Crop	Pest	Application	Rate
Cucurbits	thrips, white flies, mites	drench	40–80 fl. oz./100 gal.
		foliar	8–64 fl. oz. (0.5 pt.–2 qt.) /acre
Onions	thrips	drench	40–80 fl. oz./100 gal.
		foliar	8–64 fl. oz. (0.5 pt.–2 qt.) /acre
Celery, lettuce, spinach	thrips, whiteflies, mites, aphids, psyllids	drench	40–80 fl. oz./100 gal.
		foliar	8–64 fl. oz. (0.5 pt.–2 qt.) /acre
Peppers, tomatoes	thrips, whiteflies, mites, aphids, psyllids	drench	40–80 fl. oz./100 gal.
		foliar	8–64 fl. oz. (0.5 pt.–2 qt.) /acre
Grape, strawberry, cranberry, raspberry, blackberry, blueberry **Please note:** For cranberry applications, do not apply to flooded fields.	thrips, whiteflies, mites, weevils, aphids, psyllids	drench	40–80 fl. oz./100 gal.
		foliar	8–64 fl. oz. (0.5 pt.–2 qt.) /acre
Potatoes	psyllids	drench	40–80 fl. oz./100 gal.
		foliar	8–64 fl. oz. (0.5 pt.–2 qt.) /acre
Ornamental plants and grasses including, but not limited to: shrubs, vines, trees, lawn, bedding plants, poinsettia	thrips, weevils, mites, whiteflies	drench	40–80 fl. oz./100 gal.
		foliar	8–32 fl. oz. (0.5 pt.–1 qt.) /100 gallons, spray to wet but avoid runoff.
Turf: institutional, residential lawns (urban and suburban)	ticks	drench	40–80 fl. oz./100 gal.
		foliar	2 to 3 fl. oz/ 1000 ft^2

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STORAGE AND DISPOSAL

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

PESTICIDE STORAGE

Store LALGUARD M52 OD in its original container below 68°F (20°C) in a dry, locked place, out of the reach of children and out of direct sunlight. Do not use or store near heat or open flame.

PESTICIDE DISPOSAL

To avoid wastes, use all 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

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 ¼ 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 ordinances. If burned, stay out of smoke.

NOTICE TO USER

Lallemand Specialties Inc. / LALLEMAND PLANT CARE warrants only that this product conforms to the product description on this label and is reasonably fit for the purposes set forth in the Directions for Use when used in accordance with them. However, ineffectiveness or other unintended consequences may result because of such factors as the use, storage or handling of the product contrary to the label instructions, all of which are beyond the control of Lallemand Specialties Inc. / LALLEMAND PLANT CARE. To the extent consistent with applicable law, Lallemand Specialties Inc. / LALLEMAND PLANT CARE shall not be liable for indirect or consequential damages resulting from the use, storage or handling of this product. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, LALLEMAND SPECIALTIES INC. / LALLEMAND PLANT CARE MAKES NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

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LALGUARD M52 OD

BIOINSECTICIDE

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REFER TO DIRECTIONS OF USE WITHIN THIS BOOKLET
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SHAKE WELL BEFORE USING

NET CONTENTS: 34 fl. oz. (1 L)

LALLEMANDPLANTCARE.COM

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LALLEMAND

FIRST AID

IF IN EYES: 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: 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 further treatment advice.

IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 – 20 minutes. Call a poison control center or doctor for treatment advice.

IF SWALLOWED: Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.

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NOTE TO PHYSICIAN

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9LK146FGC–03/25

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