



Lannate[®] SP

insecticide



“..... A Growing Partnership With Nature”

DUPONT LANNATE® SP HIGHLIGHTS

- LANNATE® SP Insecticide is a 90% active ingredient water soluble powder formulation packaged in water soluble bags.
- LANNATE® SP is a broad spectrum insecticide registered in a wide range of field, fruit and vegetable crops.
- LANNATE® SP is particularly active on many Lepidopterous pests as an ovicide, larvicide and adulticide.
- LANNATE® SP is primarily a contact insecticide giving rapid knockdown effects on insects. LANNATE® SP also provides short term effects from the ingestion of treated foliage.
- LANNATE® SP's short residual on treated crops allows for short preharvest intervals.
- Consult label text for complete instructions. Always read and follow label directions for use.

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RESTRICTED USE PESTICIDE

Due to High Acute Toxicity to Humans.

For retail sale and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification. Direct supervision for this product requires the certified applicator to review federal and supplemental label instructions with all personnel prior to application, mixing, loading, or repair or cleaning of application equipment.



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Water Soluble Powder In Water Soluble Bags

<i>Active Ingredient</i>	<i>By Weight</i>
Methomyl (S-methyl-N-[(methylcarbamoyl) oxy]thioacetimidate)	90%
<i>Inert Ingredients</i>	10%
TOTAL	100%

EPA Reg. No. 352-342

KEEP OUT OF REACH OF CHILDREN

DANGER



POISON

PELIGRO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand this label, find someone to explain it to you in detail.)

STATEMENT OF PRACTICAL TREATMENT

This Product is an N-Methyl Carbamate insecticide.

If swallowed: Call a physician or Poison Control Center. Drink 1 or 2 glasses of water and induce vomiting by touching the back of throat with finger. Do not induce vomiting in, or give anything by mouth to an unconscious or convulsing person.

If inhaled: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. Get medical attention.

If in eyes: Hold eyelids open and flush with a steady gentle stream of water for 15 minutes. Get medical attention.

If on skin: Wash with plenty of soap and water. Get medical attention.

ATROPINE IS AN ANTIDOTE --SEEK MEDICAL ATTENTION AT ONCE IN ALL CASES OF SUSPECTED POISONING.

If warning symptoms appear (see WARNING SYMPTOMS), get medical attention.

For medical emergencies involving this product, call toll free 1-800-441-3637.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER - FATAL IF SWALLOWED. MAY BE FATAL IF INHALED OR ABSORBED THROUGH EYES. HARMFUL IF ABSORBED THROUGH THE SKIN.

Do not get in eyes, on skin, or on clothing. Do not breathe vapors or spray mist. Pilot should not assist in the mixing and loading operation.

(“PRECAUTIONARY STATEMENTS”
Continued on next page)

PRECAUTIONARY STATEMENTS^(continued)

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

WARNING SYMPTOMS — Methomyl poisoning produces effects associated with anticholinesterase activity which may include weakness, blurred vision, headache, nausea, abdominal cramps, discomfort in the chest, constriction of pupils, sweating, slow pulse, muscle tremors. If warning symptoms appear, refer to “Statement of Practical Treatment” on front of LANNATE® SP label and seek medical attention at once.

NOTE TO PHYSICIAN

TREATMENT — Atropine sulfate should be used for treatment. Administer repeated doses, 1.2 to 2.0 mg. intravenously every 10 to 30 minutes until full atropinization is achieved. Maintain atropinization until the patient recovers. Artificial respiration or oxygen may be necessary. Allow no further exposure to any cholinesterase inhibitor until recovery is assured.

Do not use 2-PAM for exposure to LANNATE® SP alone. However, for exposure to combinations of LANNATE® SP and organophosphorous insecticides, 2-PAM may be used as required to supplement the atropine sulfate treatment. Do not use morphine.

For medical emergencies involving this product, call toll free 1-800-441-3637.

PERSONAL PROTECTIVE EQUIPMENT

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants.
- Waterproof gloves.
- Shoes plus socks.
- Protective eyewear.

For exposures in enclosed areas, a respirator with either an organic vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G), or a NIOSH approved respirator with an organic vapor (OV) cartridge or a canister with any R, P, or HE prefilter.

For exposures outdoors, Dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C), or a NIOSH approved respirator with any R, P, or HE prefilter.

Cleaners and repairers of application equipment must wear:

- Long-sleeved shirt and long pants.
- Chemical resistant gloves.
- Chemical resistant footwear.
- Protective eyewear.
- Respirator as outlined above.
- Chemical resistant apron.

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

ENGINEERING CONTROL STATEMENTS

Human flaggers must be in enclosed cabs.

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR part 170.240 (d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

The enclosed cabs must be used in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR part 170.240 (d)(4-6)]. The handler PPE requirements may be reduced or modified as specified in the WPS.

USER SAFETY RECOMMENDATIONS

USERS SHOULD: Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Remove personal protective equipment 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

This pesticide is toxic to fish and wildlife. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas.

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 washwaters.

This product is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds while bees are actively visiting the treatment area.

PHYSICAL AND CHEMICAL HAZARDS

Keep container closed. Use with adequate ventilation.

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 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).

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:

- Coveralls.
- Waterproof gloves.
- Shoes plus socks.
- Protective eyewear.

Do not apply this product through any type of irrigation system.

Do not formulate this product into other End-use products without written permission.

DuPont LANNATE® SP Insecticide should be used only in accordance with recommendations on this label, or in separate published DuPont recommendations available through local dealers.

DuPont will not be responsible for losses or damages resulting from use of this product in any manner not specifically recommended by DuPont. User assumes all risks associated with such non-recommended use. LANNATE® SP is a dry powder to be dissolved in water for application by mechanical ground or air equipment only. Use only in commercial and farm plantings. Not for use in home plantings nor on any commercial crop that is turned into a “U-Pick”, “Pick Your Own” or similar operation. Pilot should not assist in the mixing and loading operation.

GENERAL INFORMATION

Scouting — Monitor insect populations to determine whether or not there is a need for application of LANNATE® SP based on locally determined economic thresholds. More than one treatment of LANNATE® SP may be required to control a population of pests.

Insect Predators — LANNATE® SP at rates of 1/8 to 1/4 lb. per acre helps conserve certain beneficials, including big-eyed bugs, damsel bugs, flower bugs and spiders in cotton and soybeans. While these beneficials cannot be relied upon to control pests, they are of potential value and should be monitored along with pests in pest management programs on these crops.

Resistance — Some insects are known to develop resistance to products used repeatedly for control. When this occurs, the recommended dosages fail to suppress the pest population below the economic threshold. Because the development of resistance cannot be predicted, the use of this product should conform to resistance management strategies established for the use area. These strategies may include incorporation of cultural and biological control practices, alteration of active classes of insecticides on succeeding generations and targeting the most

susceptible life stage. Consult your local agricultural authorities for details.

Compatibility — Since formulations may be changed and new ones introduced, it is recommended that users premix a small quantity of a desired tank mix and observe for possible adverse changes (settling out, flocculation, etc.). Avoid mixtures of several materials and very concentrated spray mixtures.

Do not use LANNATE® SP with Bordeaux mixture, “Du Ter” (triphenyltin hydroxide), lime sulfur, “Rayplex” iron nor in highly alkaline solutions. Use mildly alkaline mixtures immediately after mixing to prevent loss of insecticidal activity.

Tank-mix solutions containing Boron may affect solubility of the water soluble film. When using Boron containing solutions in a tank-mix, follow these procedures:

- Add the correct amount of LANNATE® SP water soluble packets first
- Be sure the soluble packets are completely dissolved
- Introduce Boron containing solutions last

If the above procedure cannot be followed, and Boron is an essential part of the spray mix, substitute LANNATE® LV formulation for the water soluble packets.

INTEGRATED PEST MANAGEMENT

This product should be used as part of an Integrated Pest Management (IPM) program which can include biological, cultural, and genetic practices aimed at preventing economic pest damage. Application of this product should be based on IPM principles and practices including field scouting or other detection methods, correct target pest identification, population monitoring, and treating when target pest populations reach locally determined action thresholds. Consult your state cooperative extension service, professional consultants or other qualified authorities to determine appropriate action treatment threshold levels for treating specific pest/crop systems in your area.

SPRAY PREPARATION

Spray equipment must be clean and free of previous pesticide deposits before applying LANNATE.

Fill spray tank 1/4 to 1/2 full of water. Add LANNATE® SP directly to spray tank. Do not open, rip, tear, cut or perforate the inner water soluble bag. Mix thoroughly to fully dissolve the insecticide; once dissolved continued agitation is not required. Use mechanical or hydraulic means; do not use air agitation. Be sure the soluble packet is completely dissolved before adding any other ingredients. Spray mix should not be stored overnight in spray tank.

APPLICATION

Apply at the recommended rates when insect populations reach locally determined economic thresholds. Consult the cooperative extension service, professional consultants or other qualified authorities to determine appropriate threshold levels for treatment in your area.

Follow-up treatments of LANNATE® SP should be applied, as needed, to keep pest populations within threshold limits. On most crops, LANNATE® SP should be applied at 5 to 7 day intervals to maintain control. On the following crops, the minimum interval between treatments is: Sweet corn - 1 day; Broccoli, brussels sprouts, cabbage, cauliflower, lettuce - 2 days; Cotton, peas - 3 days; Apples, bulb onions - 7 days.

Use sufficient water to obtain thorough, uniform coverage. Since LANNATE® SP is a fast acting contact insecticide, best results follow direct spraying of the target insect.

For aerial, use a minimum of 2 gals. per acre (gpa) except 10 gpa for grapes, nectarines and strawberries; 15 gpa for oranges, lemons, grapefruit, tangelos and tangerines.

For certain crops a minimum of 1 gallon per acre may be used providing the following conditions are met:

- equipment is adjusted to distribute spray uniformly over the spray swath,
- wind conditions and other factors such as temperature and humidity are such that the spray is delivered to the target area,
- local regulations do not prohibit low-volume aerial sprays,
- use rates are applied as directed on the package label or supplemental labeling for the following crops:

Alfalfa	Celery	Peas (succulent)
Anise	Collards	Peppermint
Asparagus	Corn	Peppers
Barley	Cotton	Potato
Beans	Cucumber	Rye
Broccoli	Lettuce	Soybean
Brussels sprouts	Melons	Spinach
Cabbage	Mint	Sugar beet
Carrot	Oats	Summer Squash
Cauliflower	Peanuts	Wheat

Apply the low rates on small plants, small insects and light infestations of insects. Use intermediate rates on large insects and heavier infestations of insects. Use 1 to 3 applications of the highest recommended rate for controlling severe infestations. Thereafter, use the lowest rate possible to maintain control.

SPRAY DRIFT MANAGEMENT

The interaction of many equipment and weather-related factors determines the potential for spray drift. The applicator is responsible for considering all these factors when making application decisions. **AVOIDING SPRAY DRIFT IS THE RESPONSIBILITY OF THE APPLICATOR.**

IMPORTANCE OF DROPLET SIZE

The most effective way to reduce drift potential is to apply large droplets (>150 - 200 microns). The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. The presence of sensitive species nearby, the environmental conditions, and pest pressure may affect how an applicator balances drift control and coverage. **APPLYING LARGER DROPLETS REDUCES DRIFT POTENTIAL, BUT WILL NOT PREVENT DRIFT IF APPLICATIONS ARE MADE IMPROPERLY OR UNDER UNFAVORABLE ENVIRONMENTAL CONDITIONS!** See **Wind, Temperature and Humidity, and Temperature Inversions** sections of this label.

Controlling Droplet Size - General Techniques

- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - Use the lower spray pressures recommended for the nozzle. Higher pressure reduces droplet size and does not improve canopy penetration. **WHEN HIGHER FLOW RATES ARE NEEDED, USE A HIGHER-CAPACITY NOZZLE INSTEAD OF INCREASING PRESSURE.**
- **Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles.

Controlling Droplet Size - Aircraft

- **Number of Nozzles** - Use the minimum number of nozzles with the highest flow rate that provide uniform coverage.
- **Nozzle Orientation** - Orienting nozzles so that the spray is emitted backwards, parallel to the airstream will produce larger droplets than other orientations.
- **Nozzle Type** - Solid stream nozzles (such as disc and core with swirl plate removed) oriented straight back produce larger droplets than other nozzle types.
- **Boom Length** - The boom length should not exceed 3/4 of the wing or rotor length - longer booms increase drift potential.
- **Application Height** - Application more than 10 ft above the canopy increases the potential for spray drift.

BOOM HEIGHT

Setting the boom at the lowest labeled height (if specified) which provides uniform coverage reduces the exposure of droplets to evaporation and wind. For ground equipment, the boom should remain level with the crop and have minimal bounce.

WIND

Drift potential increases at wind speeds of less than 3 mph (due to inversion potential) or more than 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given wind speed. **AVOID GUSTY OR WINDLESS CONDITIONS.**

Note: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

TEMPERATURE AND HUMIDITY

When making applications in hot and dry conditions, set up equipment to produce larger droplets to reduce effects of evaporation.

TEMPERATURE INVERSIONS

Drift potential is high during a temperature inversion. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain close to the ground and move laterally in a concentrated cloud. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified 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.

SHIELDED SPRAYERS

Shielding the boom or individual nozzles can reduce the effects of wind. However, it is the responsibility of the applicator to verify that the shields are preventing drift and not interfering with uniform deposition of the product.

AIR ASSISTED (AIR BLAST) FIELD CROP SPRAYERS

Air assisted field crop sprayers carry droplets to the target via a downward directed air stream. Some may reduce the potential for drift, but if a sprayer is unsuitable for the application and/or set up improperly, high drift potential can result. It is the responsibility of the applicator to determine that a sprayer is suitable for the intended application, is configured properly, and that drift is not occurring. **Note:** Air assisted field sprayers can affect product performance by affecting spray coverage and canopy penetration. Consult the application equipment section of this label to determine if use of an air assisted sprayer is recommended.

AIR ASSISTED (AIR BLAST) TREE AND VINE SPRAYERS

Air assisted tree and vine sprayers carry droplets into the canopy of trees and vines via a radially or laterally directed air stream. These sprayers are not suitable for applying herbicides. In addition to the general drift management principles already described, the following specific practices will further reduce the potential for drift.:

- *Adjust deflectors and aiming devices so that spray is only directed into the canopy.*
- *Block off upward pointed nozzles when there is no overhanging canopy.*
- *Use only enough air volume to penetrate the canopy and provide good coverage.*
- *Do not allow spray to go beyond the edge of the cultivated area. Spray the outside row only from outside the planting.*

Crops	Insects	Rate	Last Application - Days		REI			
		LANNATE® SP Lbs. Per Acre	To Harvest	To Livestock Grazing/Feeding				
Alfalfa	Pea Aphid Lygus Bugs Blotch Leafminer Aphids Egyptian Alfalfa Weevil Larvae Loopers Beet Armyworm	1/2 -1		7	48 hrs			
	Fall Armyworm	1/2						
	Alfalfa Weevil Larvae	1						
	Alfalfa Caterpillar Yellowstriped Armyworm WesternYellowstriped Armyworm	1/4-1/2						
	Variiegated Cutworm	1/4-1						
	Do not apply to dormant or semidormant alfalfa when min. daily temp.is 50 ⁰ F.or lower. Do not apply more than 3.6 lbs a.i./acre/crop. Do not make more than 10 applications/crop.							
Anise (Fennel)	Cabbage Looper	1	7		48 hrs			
	Beet Armyworm	1/2-1						
	Do not apply more than 4.5 lbs a.i./acre/crop. Do not make more than 10 applications/crop.							
Apple Ground application only	Apple Aphid Rosy Apple Aphid Tufted Apple Budmoth Green Fruitworm Tarnished Plant Bug	1/2-1 *	14	10	72 hrs			
	Codling Moth (10-12 day intervals)							
	Leafrollers (Fruitree, Obliquebanded, Redbanded, Variegated) Lesser Appleworm White Apple Leafhopper Tentiform Leafminer Cutworm	1 *						
	Do not use on Early Macintosh &Wealthy varieties Do not apply more than 4.5 lbs a.i./acre /crop. Do not make more than 5 applications/crop. * Apply in a minimum of 50 gallons of water per acre.							
Asparagus	Beet Armyworm, Western Yellowstriped Armyworm Asparagus Beetle Spotted Asparagus Beetle White Cutworm Redbacked Cutworm	1/2-1	1		48 hrs			
	Variiegated Cutworm	1/2						
	Do not apply more than 4.5 lbs a.i./acre/crop. Do not make more than 8 applications/crop.							
Avocado	Western Avocado Leafroller Omnivorous Looper	1/2-1	1	10	48 hrs			
	Do not apply more than 0.9 lbs a.i./acre/crop. Do not make more than 2applications/crop.							
Barley	Armyworms Cereal Leaf Beetle Aphids	1/4-1/2	7	10	48 hrs			
	Do not apply more than 1.8 lbs a.i./acre/crop. Do not make more than 4 applications/crop.							

Crops	Insects	Rate	Last Application - Days		REI
		LANNATE® SP Lbs. Per Acre	To Harvest	To Livestock Grazing/Feeding	
Beans (Succulent) Including: Kidney beans Lima beans Mung beans Navy beans Pinto beans Snap beans Wax Beans Broad beans Fava beans Asparagus beans Blackeyed peas Cowpeas	Leafhopper Mexican Bean Beetle	1/4-1	Succulent Beans 1/4-1/2 lb. --1, over 1/2 lb. --3;	3 Vines 7 Hay	48 hrs
	Fall Armyworm Variegated Cutworm	1/2			
	Beet Armyworm Corn Earworm	1/2-1			
	Saltmarsh Caterpillar, Yellowstriped Armyworm Western Yellowstriped Armyworm, Lygus Bugs Thrips Aphids Loopers*				
	European Corn Borer (Ovicide & Larvicide)--Initiate when moth flights first appear and-continue preventive treatments at 3-4 day intervals to control eggs and larvae				
	Spotted Cucumber Beetle	1/4-1/2			
Beans (Dry) (Same as Succulent Beans)	(Same as Succulent Beans)	(Same as Succulent Beans)	14 *	14 Vines * 14 Hay *	48 hrs
	Do not apply more than 4.5 lbs a.i./acre /crop. Do not make more than 10 application/crop. * Do not apply within 14 days of cutting.				
Beets (Table)	Imported Cabbageworm	1/4-1	0 - roots 14 - tops		48 hrs
	Beet Armyworm Cabbage Looper Diamondback Moth	1/2-1			
	Cucumber Beetle Variegated Cutworm	1/2			
	Do not apply more than 3.6lbs a.i./acre/crop. Do not make more than 8applications/crop.				
Bermudagrass pasture	Fall Armyworm, Armyworm Striped Grass Looper	1/4-1		7 Forage 3 Dehydrated Hay	48 hrs
	Do not apply more than 0.9 lbs a.i./acre/crop. Do not make more than 4 applications/crop.				
Blueberries	Blueberry Leafhopper Aphids Tussock Moth Weevil Sharp-Nosed Leafhopper	1/2	3		48 hrs
	Cranberry Fruitworm* Cherry Fruitworm*	1/2-1			
	Flea Beetle (larvae) Sawfly (larvae) Blueberry Leafroller	1			
	Blueberry Maggot	1/4-1/2			
	Do not apply during bloom. Do not apply more than 3.6 lbs a.i./acre/crop. Do not make more than 4 applications/crop. * For ground use only.				

Crops	Insects	Rate	Last Application - Days		REI
		LANNATE® SP Lbs. Per Acre	To Harvest	To Livestock Grazing/Feeding	
Broccoli	Loopers Diamondback Moth	1/2-1**	3		48 hrs
	Imp. Cabbageworm,	1/4-1**			
	Do not apply more than 7.2 lbs a.i./acre/crop. Do not make more than 10 applications/crop. ** Add a wetting agent to improve coverage.				
Brussels Sprouts	Loopers Imp. Cabbageworm, Diamondback Moth	1/2-1**	3		48 hrs
	Variiegated Cutworm	1/2**			
	Do not apply more than 5.4 lbs a.i./acre/crop. Do not make more than 10 applications/crop. ** Add a wetting agent to improve coverage				
Cabbage	Loopers Diamondback Moth	1/2-1**	1		48 hrs
	Imp. Cabbageworm,	1/4-1**			
	Fall Armyworm Variiegated Cutworm	1/2**			
	Do not apply more than 9.0 lbs a.i./acre/crop. Do not make more than 15 applications/crop. * Not recommended in AL & GA. ** Add a wetting agent to improve coverage				
Carrot	Beet Armyworm	1/3-1	1		48 hrs
	Aster Leafhopper	1/2-1			
	Armyworms Variiegated Cutworm	1/4-1/2			
	Do not apply more than 6.3 lbs a.i./acre/crop. Do not make more than 10 applications/crop.				
Cauliflower	Imp. Cabbageworm	1/4-1**	3		48 hrs
	Loopers Diamondback Moth	1/2-1**			
	Variiegated Cutworm	1/2**			
	Do not apply more than 9.0lbs a.i./acre/crop. Do not make more than 10applications/crop. ** Add a wetting agent to improve coverage.				
Celery	Beet Armyworm Aster Leafhopper	1/2-1	7		48 hrs
	Loopers	1			
	Variiegated Cutworm	1/2			
	Armyworms	1/4-1/2			
	Do not apply more than 9.0 lbs a.i./acre/crop. Do not make more than 10 applications/crop.				
Chicory	Beet Armyworm Variiegated Cutworm Leafhoppers	1/2-1	80		48 hrs
	Do not apply more than 1.8 lbs a.i./acre/crop. Do not make more than 2 applications/crop.				
Chinese Cabbage	Loopers Beet Armyworm	1/2-1*	10		48 hrs
	Do not apply more than 8.1 lbs. a.i./acre/crop. Do not make more than 10 applications/crop. * Minimum of 25 gallons water per acre by ground or 5 gallons by air.				

Crops	Insects	Rate	Last Application - Days		REI		
		LANNATE® SP Lbs. Per Acre	To Harvest	To Livestock Grazing/Feeding			
Collards (Fresh market only)	Loopers* Diamondback Moth Variegated Cutworm	1/2	10		48 hrs		
	Imported Cabbageworm Beet Armyworm	1/2-1					
	Do not apply when temp. is less than 50° F. Do not apply when crop is less than 10" tall. Do not apply more than 5.4 lbs. a.i./acre/crop. Do not make more than 8 applications/crop . * Not recommended in AL & GA.						
Corn (Field & Popcorn)	Earworm, Armyworm Fall Armyworm Corn Rootworm (adult beetles) Flea Beetles Picnic Beetles Aphids	1/4-1/2	21 Ears	3 Forage 21 Fodder	48 hrs		
	Variegated Cutworm, Beet Armyworm	1/2					
	Do not apply more than 2.25 lbs. a.i./acre/crop. Do not make more than 10 applications/crop.						
Corn (Sweet)	Earworm--Whorl as needed	1/3-1/2	0 Ears	3 Forage	48 hrs		
	Fall Armyworm Armyworm Earworm,-(Ovicide/Larvicide) European Corn Borer -Ears 1-3 days or as needed Corn Rootworm (adult beetles) Flea Beetles Picnic Beetles Aphids	1/4-1/2					
	Variegated Cutworm Beet Armyworm	1/2					
	Certain hybrid varieties of sweet corn are susceptible to methomyl injury.treat a small area to determine crop safety before full scale spraying. Do not apply more than 7.2 lbs a.i./acre/crop. Do not make more than 28 applications/crop.						
Cotton U.S. ----	Ovicide/Larvicide - Bollworm, Tobacco Budworm (Initiate schedule when significant numbers of eggs are present Continue at 3 to 5-day intervals while eggs are present and larval control is adequate. If significant larvae survive, use higher rates below.) Lygus Bugs (adults and nymphs) start treatment on low level population for suppression.	1/8-1/4 (see Predators)	15	Do not graze or feed	72 hrs		
	Cotton Leafworm	1/4-1/2					
	Cotton Fleahopper (as needed)	1/8-1/4					
	Aphids, Thrips	1/4					
East of Rockies only ---- (continued on next page)	(Early Season) Bollworm, Tobacco Budworm, Beet Armyworm, Cotton Leafperforator, Fall Armyworm Lygus Bugs (adults and nymphs) use as occasional spray in regular schedule but not more often than every 10 days.	1/2					

Crops	Insects	Rate	Last Application - Days		REI	
		LANNATE® SP Lbs. Per Acre	To Harvest	To Livestock Grazing/Feeding		
Cotton (continued) East of Rockies only ----	(Late Season) Bollworm, Tobacco Budworm, Beet Armyworm, Cotton Leafperforator, Fall Armyworm, Lygus Bugs (adult and nymphs) up to 3 applications at 3-5 day intervals after desired boll load set on plants.	1/2	15	Do not graze or feed	72 hrs	
	Texas	Cotton Aphid	1/4-2/3			
	West of Rockies only----	Larvicide for worms Bollworm, Fall Armyworm, Tobacco Budworm, Lygus Bugs	1/2-3/4			
		Beet Armyworm	1/3-1/2			
		Cotton Leafperforator	1/3-3/4			
Do not apply more than 1.8 lbs a.i./acre/crop. Do not make more than 8 applications/crop . Use may redden cotton if excessive stop or alternate with other insecticides.						
Cucumber	Loopers Tobacco Budworm Beet Armyworm, Yellowstriped Armyworm Granulate Cutworm Flea Beetles Cucumber Beetles Melon Aphid Melonworm Pickleworm	1/2-1	1/2 lb. --1 Over 1/2 lb.--3		48 hrs	
	Fall Armyworm Variegated Cutworm	1/2				
	Do not apply more than 5.4 lbs a.i./acre/crop. Do not make more than 12 applications /crop.					
Eggplant	Green Peach Aphid	1/4-1	5		48 hrs	
	Tomato Pinworm (Ground Application Only) Beet Armyworm Corn Earworm	1/2-1				
	Do not apply more than 4.5 lbs a.i./acre/crop. Do not make more than 10 applications/crop.					
Endive, Escarole	Beet Armyworm	1/2-1	10		48 hrs	
	Do not apply more than 4.5 lbs a.i./acre/crop. Do not make more than 8 applications/crop.					
Garlic	Beet Armyworm	1/2**	7		48 hrs	
	Do not apply more than 3.6 lbs a.i./acre/crop. Do not make more than 6 applications/crop. ** Add a wetting agent to improve coverage.					
Grapefruit CA, AZ & HI only	Thrips Fruittree Leafroller Orange Tortrix Western Tussock Moth Beet Armyworm	1/2-1	1	10	72 hrs	
	Do not apply more than 2.7 lbs a.i./acre/crop. Do not make more than 4 applications/crop.					

Crops	Insects	Rate	Last Application - Days		REI
		LANNATE® SP Lbs. Per Acre	To Harvest	To Livestock Grazing/Feeding	
Grapes East of Rockies only ----	Grape Berry Moth (apply pre- & post-bloom & repeat at 10-14 day intervals or as needed)	1/2-1	1 Fresh & Raisin 14 Wine Grapes		7 days
	Leafhoppers				
	U.S. ----	Omnivorous Leafroller, Grape Leafroller Orange Tortrix			
	West of Rockies only----	Saltmarsh Caterpillar Leafhoppers*			
		Climbing Cutworm (Treat infestation and repeat at 7-14 day intervals as needed)			
CA only ----	Grape Leaf Skeletonizer*	1/2-1			
	Thrips	1/2-1			
Do not apply more than 4.5 lbs a.i./acre/crop. Do not make more than 5 applications/crop. * Leaf hoppers & Grape leaf skeletonizer (Ground Application Only).					
Horseradish Ground application only	Aphids Thrips	1/2	65		48 hrs
	Do not apply more than 1.8 lbs a.i./acre/crop. Do not make more than 4 applications/crop.				
Leafy Green Vegetables: Beet (tops) Dandelions, Kale, Mustard Greens, Parsley, Swiss Chard, Turnip Greens	Beet Armyworm Cabbage Looper* Diamondback Moth Imported Cabbageworm	1/2-1	10		48 hrs
	Do not apply more than 3.6lbs a.i./acre/crop. Do not make more than 8 applications/crop . * Not recommended in AL & GA.				
Lemon CA, AZ & HI only	Thrips Western Tussock Moth Orange Tortrix Beet Armyworm	1/2-1	1	10	72 hrs
	Do not apply more than 2.7 lbs a.i./acre/crop. Do not make more than 4 applications/crop.				
Lentils	Western Yellowstriped Armyworm	1/2-1	21	3 - Forage 7 - Hay	48 hrs
	Do not apply more than 0.9 lbs a.i./acre/crop. Do not make more than 2 applications/crop.				
Lettuce (head varieties and Leaf varieties)	Alfalfa Looper	1/4-1	1/4-1/2 lb. --7 over 1/2 lb. --10		48 hrs
	Thrips Aphids Beet Armyworm Cabbage Looper Corn Earworm Aster Leafhopper	1/2-1			
	Variegated Cutworm	1/2			
	Lettuce(head varieties) Do not apply more than 9.0 lbs a.i./acre/crop. Do not make more than 15 applications/crop. Lettuce(leaf varieties) Do not apply more than 3.6 lbs a.i./acre/crop. Do not make more than 8 applications/crop.				

Crops	Insects	Rate	Last Application - Days		REI
		LANNATE® SP Lbs. Per Acre	To Harvest	To Livestock Grazing/Feeding	
Melons Including: Cantaloupe Casaba Santa Claus melon Crenshaw melon Honeydew melon Honey balls Persian melon Golden Pershaw melon Mango melon Pineapple melon Snake melon Watermelon	Loopers Tobacco Budworm Beet Armyworm Yellowstriped Armyworm Granulate Cutworm Flea Beetles Cucumber Beetles Melon Aphid Melonworm Pickworm	1/2-1	1/2 lb. --1 day over 1/2 lb. --3 days		48 hrs
	Fall Armyworm Variegated Cutworm	1/2			
	Do not apply more than 5.4 lbs a.i./acre/crop. Do not make more than 12 applications/crop.				
Mint (Peppermint, Spearmint)	Variegated Cutworm Alfalfa Looper	1	14		48 hrs
	Flea Beetles	3/4-1			
	Do not apply more than 1.8 lbs a.i./acre/crop. Do not make more than 4 applications/crop.				
Nectarine CA & AZ only	Thrips	1/2-1	1	10	72 hrs
	Do not apply more than 2.7 lbs a.i./acre/crop. Do not make more than 3 applications/crop.				
Oats	Armyworms Cereal Leaf Beetle Aphids	1/4-1/2	7	10	48 hrs
	Do not apply more than 1.8 lbs a.i./acre/crop. Do not make more than 4 applications/crop.				
Onions (Green & Dry Bulb)	Beet Armyworm	1/2-1**	7 Green and Dry Onions		48 hrs
	Thrips	1**			
	Variegated Cutworm Black Cutworm Onions, green Do not apply more than 5.4 lbs a.i./acre/crop. Do not make more than 8 applications/crop. Onions, dry bulb Do not apply more than 3.6lbs a.i./acre/crop. Do not make more than 8applications/crop. ** Add a wetting agent to improve coverage.				
Oranges CA, AZ & HI only	Thrips Western Tussock Moth Orange Tortrix Fruittree Leafroller Beet Armyworm Citrus Cutworm	1/2-1	1	10	72 hrs
	Do not apply more than 2.7 lbs a.i./acre/crop. Do not make more than 4 applications/crop.				
Peaches	Catfacing Insects (Plant Bugs and Stink Bugs) - begin at petal fall and continue in cover sprays at 7-to 10-day intervals Oriental Fruit Moth* -begin at petalfall; use trapping devices and frequent field inspection to determine need for treatment. Continue treatment in cover sprays and alternate withresidual- type insecticides registered for this use. Green Peach Aphid	1-2 lb (or 1/4-1/2 lb per 100 gal up to 400 gal per acre)	4	10	4 days
	Do not apply more than 5.4 lbs a.i./acre/crop. Do not make more than 6 applications/crop. * Oriental Fruit Moth(Ground Application Only).				

Crops	Insects	Rate	Last Application - Days		REI
		LANNATE® SP Lbs. Per Acre	To Harvest	To Livestock Grazing/Feeding	
Peanuts	Corn Earworm*	1/4-1	21	Do not feed treated vines	48 hrs
	Potato Leafhopper				
	Fall Armyworm	1/4-1/2			
	Beet Armyworm	3/8-1			
	Green Cloverworm Velvetbean Caterpillar Cabbage Looper Soybean Looper ** Thrips Granulate Cutworm	1/2-1			
Do not apply more than 3.6 lbs a.i./acre/crop. Do not make more than 8 applications/crop. * LANNATE® SP has ovicidal and larvicidal control on corn earworm. **Soybean Looper is difficult to control. Do not apply to worms greater than 1/2" long. Use higher rate for severe infestations					
Pears Northeast only	Green Fruitworm Obliquebanded Leafroller	1/2-1 *	7	10	48 hrs
	Do not apply more than 1.8 lbs a.i./acre/crop . Do not make more than 2 applications/crop. * Apply in a minimum of 50 gallons of water per acre.				
Peas (succulent) Including: Pigeon peas Chick peas Garbanzo beans Dwarf peas Garden peas Green peas English Peas Field peas Edible pod peas	Armyworm Green Cloverworm	1/4-1/2	1	5 Forage 14 Hay	48 hrs
	Alfalfa Looper Cabbage Looper*	1/2-1			
	Pea Aphid Beet Armyworm Saltmarsh Caterpillar Variegated Cutworm				
	Alfalfa Caterpillar	1/4-1			
	Do not apply more than 2.7 lbs a.i./acre/crop . Do not make more than 6 applications/crop. * Not recommended in AL & GA.				
Pecans Southeast only	Aphids	1/2-1	30	10	48 hrs
	Do not apply more than 6.3 lbs a.i./acre/crop . Do not make more than 7 applications/crop.				
Peppers Including: Bell Hot Pimentos Sweet	Fall Armyworm	1/2	3		48 hrs
	Loopers Beet Armyworm Green Peach Aphid	1/2-1			
	Armyworm Variegated Cutworm	1/4-1/2			
	European Corn Borer	1			
	Do not apply more than 4.05 lbs a.i./acre/crop . Do not make more than 10 applications/crop.				
Pomegranates	Omnivorous Leafroller	1	14		48 hrs
	Do not apply more than 1.8 lbs a.i./acre/crop . Do not make more than 2 applications/crop.				
Potato	Tuberworm Loopers Aphids Beet Armyworm Leafhoppers	1/2-1	6		48 hrs
	Variegated Cutworm Fall Armyworm Flea Beetles	1/2			
	Do not apply more than 4.5 lbs a.i./acre/crop . Do not make more than 10 applications/crop.				

Crops	Insects	Rate	Last Application - Days		REI
		LANNATE® SP Lbs. Per Acre	To Harvest	To Livestock Grazing/Feeding	
Rye	Armyworms Cereal Leaf Beetle Aphids	1/4-1/2	7	10	48 hrs
	Do not apply more than 1.8 lbs a.i./acre/crop . Do not make more than 4 applications/crop.				
Sorghum (except Sweet Sorghum)	Sorghum Webworm	1/2*	14	14	48 hrs
	Sorghum Midge --Apply when 50% bloom and 3-5 days later if needed . Fall Armyworm (Budworm) Beet Armyworm Corn Earworm Armyworm	1/4-1/2*			
	Do not apply more than 0.9 lbs a.i./acre/crop . Do not make more than 2 application/crop. * Minimum of 10 gallons per acre by ground or 2 gallons per acre by air.				
Soybeans	Green Cloverworm Velvet-bean Caterpillar Mexican Bean Beetle Corn Earworm Light to moderate infestations	1/8-1/4 (see Predators)	14	Under 1/2 lb. - 3 Forage - 7 Hay	48 hrs
	Moderate to severe infestations	1/4-1/2			
	Beet Armyworm Salt Marsh Caterpillar Bean Leaf Beetle Fall Armyworm Thrips Silver Spotted Skipper Light to moderate infestations	1/4-3/8			
	Moderate to severe infestations	3/8-1/2			
	Do not apply more than 1.35 lbs a.i./acre/crop . Do not make more than 3 applications/crop.				
Spinach	Alfalfa Loopers Cabbage Looper Beet Armyworm	1/2-1	7		48 hrs
	Fall Armyworm, Variegated Cutworm	1/2			
	Do not apply when min. daily temp.is 32 ^o F. or lower. Do not apply to seedlings less than 3" diameter . Do not apply more than 3.6 lbs a.i./acre/crop. Do not make more than 8 applications/crop.				
Strawberry	Beet Armyworm Thrips Aphids	1/2-1	3-Fresh Fruit 10-Processing Fruit		48 hrs
	Lygus Bugs Omnivorous Leaf Tiers	1			
	Armyworms	3/4-1			
	Do not apply more than 4.5 lbs a.i./acre/crop . Do not make more than 10 applications/crop.				
Sugar Beet	Beet Webworm Flea Beetles Carrion Beetles Beet Armyworm Aphids Western Yellowstriped Armyworm	1/4-1	7	30 Tops	48 hrs
	Variegated Cutworm	1/2			
	Do not apply more than 4.5 lbs a.i./acre/crop . Do not make more than 10 applications/crop.				

Crops	Insects	Rate	Last Application - Days		REI
		LANNATE® SP Lbs. Per Acre	To Harvest	To Livestock Grazing/Feeding	
Summer Squash* Including: Crookneck squash Straightneck squash Scallop squash Vegetable marrow Spaghetti squash Hyotan Cucuzza Hechima Chinese okra Bitter melon Balsam pear Balsam apple Chinese Cucumber	Loopers Tobacco Budworm Beet Armyworm Yellowstriped Armyworm Granulate Cutworm Flea Beetles Cucumber Beetles Melon Aphid Melonworm Pickleworm Fall Armyworm	1/2-1	1/2 lb. -1 day over 1/2 lb.--3 days		48 hrs
	Do not apply more than 5.4 lbs a.i./acre/crop . Do not make more than 12 applications/crop. * Fruit of the Gourd (Cucurbit accae) family that are consumed when immature, 100% of the fruit is edible cooked or raw, once picked cannot be stored, has a soft rind which is easily penetrated, and if seeds were harvested they would not germinate.				
Tangelo, Tangerine CA, AZ & HI only	Thrips Western Tussock Moth Orange Tortrix, Beet Armyworm	1/2-1	1	10	72 hrs
	Do not apply more than 2.7 lbs a.i./acre/crop . Do not make more than 4 applications/crop.				
Tobacco (Except shade)	Flea Beetle Hornworm	1/4-1/2	5 Flue cured 14 Air or fire cured		48 hrs
	Loopers Aphids Tobacco Budworm Fall Armyworm	1/2			
Do not apply more than 2.25 lbs a.i./acre/crop . Do not make more than 5 applications/crop.					
Tomato (Including Tomatillos*)	Tomato Fruitworm Aphids Hornworm Loopers Beet Armyworm Southern Armyworm Pinworm	1/2-1	1		48 hrs
	Fall Armyworm Variegated Cutworm	1/2			
	Armyworm	1/4-1/2			
	Do not apply more than 7.2 lbs a.i./acre/crop . Do not make more than 16 applications/crop. * Do not apply more than 4.5 lbs a.i./acre/crop . Do not make more than 5 applications/crop.				
Turf (For use on sod farms only)	Sod Webworm (after application, sprinkle irrigate for 15 minutes)	1-2 (2/5-4/5 ozs. per 1000 sq. ft.)		Do not graze or feed.	48 hrs
	Do not apply more than 3.6 lbs a.i./acre/crop . Do not make more than 4 applications/crop.				
Wheat	Armyworms Cereal Leaf Beetle Aphids	1/4-1/2	7	10	48 hrs
	Do not apply more than 1.8 lbs a.i./acre/crop . Do not make more than 4 applications/crop.				

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