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U.S. ENVIRONMENTAL PROTECTION AGENCY Office of Pesticide Programs (7504C) Ariel Rios Building 1200 Pennsylvania Ave., N.W. Washington, D.C. 20460

\_ Reregistration

<u>x</u> Registration

NOTICE OF PESTICIDE:

EPA keg.

67760-66

المنسانين أنا فالقط JUN 15 2005

Term of Issuance:

Conditional.

Name of Pestinide Product

Cheminova Acephate 90SP

under FIFRA, as amended

Name and Address of Registrant include ZIP Code::

Cheminova, Inc.

1700 Route 23, Suite 300

Wayne, NJ 07470

Note: Changes in labeling differing in substance from that accepted in connection with this registration case be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

on the basis of information formished by the registrant, the above named posticide is hereby registered/registered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Auditor In order to protect health and the environment, the Administrator, on his motion, may at any time suspend is cancel the legistration of a pesticide in accordance with the Act. The acceptance of any name in remarkable to with the registration of a product under this Act is not to be construed as giving the registrant a right to explusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA sec. 3(c)(7)(A) provided that you:

- Submit and/or cite all data required for registration of your product when the Agency requires all registrants of similar products to submit such data.
- 2. Make the following label changes before you release the product for shipment:
  - a. Add the designation, "EPA Reg. No. 67760-66".
- b. Revise the Small Volume Spray Equipment table on page 28 by removing the phrase, "using a small fluid ounce measuring" cup" and revising the dilution instructions so that they are more appropriate for the product. Since the product is only packaged in water soluble packaging and the label instructs the user not to break open the water soluble packages, any use dilution instructions using amounts of product smaller than that contained in an individual water soluble package would not be appropriate.
- c. Add equivalent tables for those uses for which application rates are expressed in terms other than per acre as was done with your 75SP product label.
- d. On page 26, add an asterisk to the repeat application statements located in the remarks column.

Summature of Approving officials

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JUN 15 2005

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- e. Clarify the last sentence in the first paragraph on page 5 to indicate that repeat applications are to be made only as directed. As presently worded, the use of the term "should" in the sentence implies that repeat applications are at the discretion of the user.
- 3. Within two years from the date of this Notice, provide the one year storage stability data (830.6317) conducted with the subject formulated product under warehouse conditions and the corrosion characteristics (830.6320) data for the product. It is recommended that observations be made at 0, 3, 6, 9 and 12 months intervals. The corrosion characteristics study may be carried out concurrently.
- 4. Submit two copies of the revised final printed label before you release the product for shipment.

It is understood that the Confidential Statement of Formula (CSF) and the Formulator's Exemption Statement (FES) dated March 23, 2005 replace all other CSFs and FESs submitted for the product.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of the labeling including the label for the individual water soluble package, is enclosed for your records.

Marilyn A. Mautz

Biologist

Insecticide-Rodenticide Branch
Registration Division (7504C)

# Cheminova Acephate 90SP

**Active Ingredient** 

Acephate (O,S-Dimethyl acetylphosphoramidothioate)

90%

Other Ingredients Total

10% 100%

EPA Reg. No. 67760-

KEEP OUT OF REACH OF CHILDREN **CAUTION** 

REFER TO OUTER CONTAINER LABEL FOR USE DIRECTIONS AND PRECAUTIONS

NET WEIGHT \_ POUND(S)

ACCEPTED with COMMENTS in EPA Letter Dated

JUN 15 2005

Utuler the Federal Investicide, Functione and toxontiside Act as amended, for the posticide registered under EPA hig No.

67760-66

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# **CHEMINOVA ACEPHATE 90SP**

(Insecticide in a Water Soluble Bag)

**ACTIVE INGREDIENT:** 

\*Acephate (O, S-Dimethyl acetylphosphoramidothioate)

**INERT INGREDIENTS:** 

TOTAL:

90%

10% 100%

THIS PRODUCT MAY NOT BE REFORMULATED, REPACKAGED OR RELABELED.

# KEEP OUT OF REACH OF CHILDREN CAUTION

IN CASE OF A MEDICAL EMERGENCY INVOLVING THIS PRODUCT, CALL TOLL FREE, DAY OR NIGHT, 1-866-303-6950

SEE BOOKLET/INSIDE FOR ADDITIONAL PRECAUTIONARY STATEMENTS AND USE DIRECTIONS

EPA Reg. No.: 67760-

EPA Est. No.:

**Net Contents:** 

Manufactured for: Cheminova, Inc. 1700 Route 23 Wayne, NJ 07470 www.cheminova.us.com ACCEPTED with COMMENTS in EPA Letter Dated:

Under the Federal Invacionale, Fungicide, and statuments of Act assured under EPA Key Ville 2260-66

# PRECAUTIONARY STATEMENTS Hazards to Humans and Domestic Animals

CAUTION. Harmful if swallowed or absorbed through skin. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse.

### **FIRST AID**

Acephate is an organophosphate and a cholinesterase inhibitor.

IF SWALLOWED: Call a poison control center or doctor immediately for treatment advice.

Have person sip a glass of water if able to swallow.

Do not induce vomiting unless told to do so by a poison control center or doctor.

Do not give anything by mouth to an unconscious person.

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.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-866-303-6950 for emergency medical treatment information.

NOTE TO PHYSICIAN - This material contains a cholinesterase inhibitor. Measurement of blood cholinesterase activity may be useful in monitoring exposure but decisions regarding treatment will usually need to be made before test results are available. If signs of cholinesterase inhibition appear, atropine sulfate is antidotal. 2-PAM (PROTOPAM) is also antidotal and may be used in conjunction with atropine but should not be used alone.

#### PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category A in an EPA chemical-resistance category selection chart.

**Mixers**, **loaders**, **applicators** and **other** handlers must wear: long-sleeved shirt and long pants, shoes plus socks and chemical-resistant gloves for all mixers and loaders and for applicators using hand-held equipment. In addition, applicators using low pressure hand wand application equipment must wear: A NIOSH-approved dust mist filtering respirator with MSHA/NIOSH approval number prefix TC-21C or a NIOSH-approved respirator with any N, R, P or HE filter,

**See engineering control statements for additional requirements.** 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.

#### **Engineering Control Statements**

Water soluble packets when used correctly qualify as a closed mixing/loading system under the Worker Protection Standard for Agricultural Pesticides [40 CFR 170.240(d)(4)]. Mixers and loaders using water soluble packets must:

- wear the personal protective equipment required above for mixers/loaders and.
- be provided and must have immediately available for use in an emergency, such as a broken package, spill, or equipment breakdown the following PPE: coveralls, chemical-resistant footwear, and a NIOSH-approved dust mist filtering respirator with MSHA/NIOSH approval number prefix TC-21C or a NIOSH-approved respirator with any N, R, P, or HE filter.

Pilots must use an enclosed cockpit in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(6)].

The use of human flaggers is prohibited.

## **USER SAFETY RECOMMENDATIONS:**

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- 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**

This pesticide is toxic to birds. 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 cleaning equipment or disposing of equipment washwaters. Cover or soil-incorporate spills. 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 if bees are visiting the treatment area. Exposed treated seed may be hazardous to birds and other wildlife. Dispose of all excess treated seed and seed packaging by burial away from bodies of water.

#### **DIRECTIONS FOR USE**

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

READ ENTIRE LABEL. USE STRICTLY IN ACCORDANCE WITH PRECAUTIONARY STATEMENTS AND DIRECTIONS, AND WITH APPLICABLE STATE AND FEDERAL REGULATIONS.

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 Workers 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 24 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: coveralls, chemical-resistant gloves made of any waterproof material and shoes plus socks.

#### NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product 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 or greenhouses.

Do not enter or allow others to enter treated areas until sprays have dried.

#### **TANK MIXES**

**NOTICE**: Tank mixing or use of this product with any other product which is not specifically and expressly authorized by the label shall be the exclusive risk of user, applicator and/or application advisor.

Read and follow the entire label of each product to be used in the tank mix with this product.

#### CHEMIGATION

Apply to cranberries only by sprinkler irrigation systems. Do not apply by chemigation to any other crop, or this crop using any other type of irrigation system.

#### WATER SOLUBLE PACKAGING

## Multiple packaging:

This bag contains multiple water soluble packets of CHEMINOVA ACEPHATE 90SP. Do not handle the packets with wet gloves or allow the packets to become wet prior to addition to the spray tank. Do not break open packets. Refer to the Tables of Equivalents to calculate the number of packets to use. If all packets are not used, close and reseal outer container to protect remaining packet(s).

#### Single packaging:

This bag contains one water soluble packet of CHEMINOVA ACEPHATE 90SP. Do not handle the packet with wet gloves or allow the packet to become wet prior to addition to the spray tank. Do not break open packets. Refer to the Tables of Equivalents to calculate the number of packets to use. Open outer bag by pulling perforated tearstrip and drop the unopened inner packet of CHEMINOVA ACEPHATE 90SP into spray tank.

### **Preparation of Spray Solution**

To prepare spray solution, drop the unopened packet(s) of CHEMINOVA ACEPHATE 90SP into a spray tank containing at least one-half the required total quantity of water. Direct water at the floating packet(s) and continue to add water with the agitator running until the desired spray volume is reached. Do not add any liquid fertilizers, micronutrients or adjuvants to the spray solution until after the packet and its contents have completely dissolved. Depending on the water temperature and degree of agitation in the tank, water soluble packet(s) should completely dissolve in approximately 5 minutes.

**NOTE**: Dissolution rate may be slowed by cold water, lack of agitation, or water containing high concentrations of boron or sulfur. Products containing boron and/or fertilizers will prevent the water-soluble packets from dissolving. Boron and/or fertilizer products must only be added after packet(s) have completely dissolved.

**TABLE OF EQUIVALENTS** 

Rates of CHEMINOVA ACEPHATE 90SP Per Acre	Acres Treated by a 2.5 lb. WSP Packet
2.5 oz.	16
3.2 oz.	12.5
3.25 oz.	12.3
0.25 lb.	10
0.28 lb.	8.9
0.5 lb.	5
0.56 lb.	4.5
0.8 lb.	3.1
1.0 lb.	2.5
1.1 lb.	2.3

#### **GENERAL INFORMATION AND USE RESTRICTIONS**

CHEMINOVA ACEPHATE 90SP, a soluble powder, is an insecticide for control of pests on selected agricultural crops and in certain non-crop areas. The active ingredient in CHEMINOVA ACEPHATE

90SP is acephate, a water soluble insecticide readily absorbed by plant roots and foliage to give systemic control of feeding insects. Insect pests are generally controlled more effectively by CHEMINOVA ACEPHATE 90SP through ingestion than by contact. Application of CHEMINOVA ACEPHATE 90SP to maintain control should be repeated only as directed.

**NOTE**: Please pay special attention to the maximum seasonal application rates given for each crop. Repeat applications may not be used in excess of these limits.

**DO NOT** use low pressure hand wand application equipment except when applying as a nonagricultural use on ornamental trees, shrubs and floral plants. Do not use low pressure hand wand application equipment for perimeter treatments.

DO NOT use on turf grass other than sod farm and golf course turf grass.

For ornamental use labels only:

To ensure that CHEMINOVA ACEPHATE 90SP is compatible with the variety or cultivar of the listed ornamental crops under your specific conditions, test the product on a limited scale and observe for phytotoxicity over two weeks before making large scale applications. The large number of existing ornamental varieties and cultivars coupled with the constant introduction of new variants precludes specific testing of each type. It is impossible to field test this product in every locate where sold or in all of the combinations created by differences including those in soil or media type, pH, moisture of fertility, environment conditions such as temperature, lighting or degree days and horticultural practice including planting dates, control of other pests, timing of various horticultural practice and the manner of use and application of this product.

FAILURE TO FOLLOW THE DIRECTIONS FOR USE AND PRECAUTIONS ON THIS LABEL MAY RESULT IN POOR INSECT CONTROL, CROP INJURY AND/OR ILLEGAL RESIDUES.

Do not apply under conditions involving possible drift to food, forage or other plantings that might be damaged or the crops thereof rendered unfit for sale, use or consumption.

## **SPRAY DRIFT MANAGEMENT**

Do not allow spray to drift from the application site and contact people, structures people occupy at any time and the associated property, parks and recreation areas, nontarget crops, aquatic and wetland areas, woodlands, pastures, rangelands, 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 fine or medium, or coarser spray, according to ASAE 572 definition for standard nozzles or VMD for spinning atomizer nozzles.

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 fine or 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. For overhead chemigation, apply only when wind speed is 10 mph or less.

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

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BEANS AND LIMA BEANS – Dry and Succulent Forms
Table 1. Beans and Lima Beans – Dry and Succulent Forms

APPLICATION METHOD	PESTS CONTROLLED	RATES OF CHEMINOVA ACEPHATE 90SP PER ACRE	REMARKS	DAYS TO HARVEST
FOLIAR	Fleahoppers Grasshoppers	0.25 to 0.5 lb. (4 to 8 oz.)	Apply when eggs or insects first appear.	14 (snapbeans –
By Ground: 20 to 100 gals./A of spray  By Air: Minimum of 2 gals./A of spray	Aphids (excluding Black Bean Aphid) Bean Leaf Beetle Bean Leafroller Cabbage Looper Cutworms Green Cloverworm Leafhoppers Mexican Bean Beetle Plantbugs (Lygus) Soybean Looper Thrips Whitefly (Except Sweetpotato or Silverleaf Whitefly) Armyworms (excluding Beet Armyworm) Corn Earworm European Corn Borer	0.5 to 1.1 lbs. (8 to 17.6 oz.)	Repeat at a minimum 3 day spray interval if rate applied is 0.5 lbs. a.i./acre or less; repeat at a minimum 7 day spray interval if rate applied is more than 0.5 lbs. a.i./acre.*  Use higher rates for severe insect infestations.	succulent or dry beans)  0 (lima beans – succulent form)

# **USE PRECAUTIONS**

Do not feed treated vines to livestock.

\*Do not apply more than 2.2 lbs./A (2 lbs. ai) per season.

# **CELERY**

Table 2. Celery

APPLICATION METHOD	PESTS CONTROLLED	RATES OF CHEMINOVA ACEPHATE 90SP PER ACRE	REMARKS	DAYS TO HARVEST
FOLIAR	Green Peach Aphid	0.5 to 1.1 lbs. (8 to 17.6 oz.)	Apply when eggs or insects first appear.	21
By Ground: 50 to 100 gals./A of spray  By Air: Minimum of 5 gals./A of spray	Cabbage Looper Fail Armyworms	1.1 lbs. (17.6 oz.)	Repeat at a minimum 3 day spray interval if rate applied is 0.5 lbs. a.i./acre or less; repeat at a minimum 7 day spray interval if rate applied is more than 0.5 lbs. a.i./acre.*	

# **USE PRECAUTIONS**

<sup>\*</sup> Do not apply more than 2.2 lbs./A (2 lbs. ai) per season.
All celery must be trimmed (tops removed) before shipment for use.
Do not use trimmed tops for food or feed.

## **COLE CROPS**

Table 3. Cole Crops - Brussels Sprouts & Cauliflower

APPLICATION METHOD	PESTS CONTROLLED	RATES OF CHEMINOVA ACEPHATE 90SP PER ACRE	REMARKS	DAYS TO HARVEST
By Ground: 25 to 150 gals./A of spray  By Air: Minimum of 5 gals./A of spray	Cabbage Looper Diamondback Moth Larvae Imported Cabbage Worm	0.5 to 1.1 lbs. (8 to 17.6 oz.) 1.1 lbs. (17.6 oz.)	Use the high rate when heavy infestations of aphids are present.  Apply when eggs or insects first appear.  Repeat at a minimum 3 day spray interval if rate applied is 0.5 lbs. a.i./acre or less; repeat at a minimum 7 day spray interval if rate applied is more than 0.5 lbs. a.i./acre.*  Diamondback Moth Larvae – This insect has demonstrated an ability to develop resistance to various classes of insecticides. Consult your local Agricultural Extension Service for current recommended control practices for this insect.	14

# **USE PRECAUTIONS**

\* Do not apply more than 2.2 lbs./A (2 lb. ai) per season to Brussels sprouts and cauliflower.

Do not feed trimmings to livestock or allow animals to graze in treated areas.

# COTTON

# **GENERAL USE PRECAUTIONS**

Do not use treated seed for food or feed purposes or process for oil.

Do not feed gin trash to livestock.

Do not allow animals to graze on treated areas.

\*\*Do not apply more than 4 lbs. ai/A per season. This includes all methods of application.

\*\*\*For aerial application, application rates are limited to 0.75 lbs. a.i./acre. In California and Arizona, aerial application rates are limited to 1 lb. a.i./acre.

APPLICATION METHOD	PESTS CONTROLLED	RATES OF CHEMINOVA ACEPHATE 90SP PER ACRE	REMARKS	DAYS TO HARVEST
IN FURROW  By Ground: 3 to 5 gals./A of spray.  AT-PLANTING APPLICATION	Aphids * Black (Greasy) Cutworm (Except CA) Thrips (including Western Flower Thrips) *Excluding Cotton Aphids in AZ & CA.	0.56 TO 1.1 lb.  NOTE: For the Blacklands of Texas use 1.1 lbs./A CHEMINOVA ACEPHATE 90SP.	Use flat-fan nozzles for in-furrow application. Align nozzles to ensure good spray deposition into the seed furrow. Cone type nozzles are not recommended since unacceptable spray deposition may occur. Securely fasten spray-system tubing to furrow opener and check frequently to ensure proper positioning and operation.  CHEMINOVA ACEPHATE 90SP can be mixed with fungicides that are sprayed in-furrow for disease control.	At-Planting Application

FOLIAR	Thrips (Including	3.2 oz.	Apply when eggs or	21
1 02""	Western	J., J. J.	insects first appear.	
By Ground: 10	Flower Thrips)		1	ĺ
to 25 gals./A of			Repeat at a minimum 3	
spray.		0.054 4.011	day spray interval.**	
By Air: 3 to 10	Plantbugs	0.25 to 1.0 lb.	Apply when eggs or insects first appear.	21
gals./A of	(Lygus)	0.5 to 1.0 lb.	Insects instappear.	
spray***		(AZ & CA)	Use highest rate for	ļ
(minimum of 5		V — 2 7	Lygus adults that have	ł
gals./A in AZ &	j		migrated into cotton.	1
CA)			1	ĺ
ľ			Repeat at a minimum 3	]
			day spray interval if rate applied is 0.5 lbs.	
\			a.i./acre or less; repeat	
}	}		at a minimum 7 day	
			spray interval if rate	
{			applied is more than	
<u> </u>			0.5 lbs. a.i./acre.**	
	Fleahopper	0.25 lb.	Apply when eggs or	21
			insects first appear.	j
ļ			Repeat at a minimum 3	
			day spray interval.**	
	Cotton Aphids	0.5 to 1.0 lb.	This insect may	21
	(excluding AZ & CA)		develop resistance to	[
1			various classes of insecticides. Consult	ì
}			your local Agricultural	
			Extension Service for	ĺ
ľ			current control	
]			recommendations.	
			Deposit at a minimum 2	
1			Repeat at a minimum 3 day spray interval if rate	
			applied is 0.5 lbs.	
			a.i./acre or less; repeat	
1			at a minimum 7 day	
			spray interval if rate	
	i		applied is more than	
}	Mhitofly	0.5 to 1.0 lb.	0.5 lbs. a.i./acre.**  Repeat at a minimum 3	21
	Whitefly (excluding	עו ט.ז ט כ.ט.	day spray interval if rate	<i>د</i> ۱
1	Sweetpotato		applied is 0.5 lbs.	
1	Whitefly/Silverleaf		a.i./acre or less; repeat	
[	Whitefly		at a minimum 7 day	
}			spray interval if rate	
			applied is more than	1
	A	4016	0.5 lbs. a.i./acre.**	21
1	Armyworms (excluding	1.0 lb.	Apply when eggs appear. Repeat at a	۷١
l I	Beet Armyworm) Cabbage Looper		minimum 7 day spray	
Į l	Cappage Looner 1			

r=	0.5. 40.11	Trans. Conservation 2.5	21
Bollworm Tobacco Budworm Adults Larvae	0.5 to 1.0 lb. (East of Rockies)  1.0 lb. (AZ & CA)	Early Season: Use 0.5 lb./A for light infestation.  Mid and Late Season: Use 0.8 to 1.0 lb./A for moderate to severe infestations.	21
Eggs/DEADHATCH®	0.25 to 0.5 lb.	Apply when eggs appear. Repeat at a minimum 3 day spray interval if rate applied is 0.5 lbs. a.i./acre or less; repeat at a minimum 7 day spray interval if rate applied is more than 0.5 lbs. a.i./acre.**  Moths of budworm larvae are controlled by direct contact with spray. Moth kill is most likely to occur when late evening applications are made.  DEADHATCH: Control of emerging larvae by consumption of treated egg casings.	
Stinkbugs	0.8 lb.	Apply when eggs appear. Repeat at a minimum 7 day spray interval.**	21
Pink Bollworm (AZ & CA)	1.0 lb.	Apply when insects appear. Repeat at a minimum 7 day spray interval.**	21

Cutworms	0.8 lb.	Ground application is recommended.	21
		Aerial applications are less effective, but may be used.	
		Control is most effective when ground application is made in the evenings and sprays are directed toward the base and lower portion of plant.	
		Apply when insects first appear or damage is first noted. Repeat at a minimum 7 day spray interval.**	

# COMMERCIALLY TREATED COTTONSEED

(FOR USE BY COMMERCIAL SEED TREATERS ONLY)
CHEMINOVA ACEPHATE 90SP contains a water-soluble systemic insecticide which helps to reduce injury to cotton seedlings by several insects.

Table 5. Commercially Treat Cottonseed - Recommendations for Use

PESTS	AMOUNT PER 100 LBS. COTTONSEED	EFFICACY	ADDITIONAL USE INSTRUCTIONS
Thrips Cotton Aphids	7.1 oz.	Gives effective reduction of Thrips and Cotton Aphids for up to three weeks after planting.	CHEMINOVA ACEPHATE 90SP can be mixed in the slurry tank with most of the fungicide seed treatments in common use. CHEMINOVA ACEPHATE 90SP
Black (Greasy) Cutworm	7.1 oz.	Gives effective reduction of Black (Greasy) Cutworm from planting through the 3 <sup>rd</sup> to 4 <sup>th</sup> leaf stage of development.  When planting into fields where large cutworms are present (5 <sup>th</sup> instar and larger) economic damage may occur.	can also be applied as a separate treatment using enough water to give adequate coverage of the seed. CHEMINOVA ACEPHATE 90SP dissolves quickly in water with a minimum of agitation.

# **USE PRECAUTIONS**

This formulation does not contain a dye. Compliance with the Federal Seed Act and 21 CFR Chapter 1, Section 2.5 requires that all seed treated with this product must be colored to distinguish from, and prevent subsequent inadvertent use as, food for man or feed for animals.

Treated seed must not be used for, or mixed with food or animals feed, or processed for oil. Seed treated with CHEMINOVA ACEPHATE 90SP may be considered adulterated under state and federal laws if sold or shipped as food or feedstuffs. Seed commercially treated with CHEMINOVA ACEPHATE 90SP must be labeled as follows: "TREATED SEED. DO NOT USE FOR FOOD, FEED OR OIL."

Observe all precautions and limitations on labeling of all products used in mixtures.

#### **COTTON TANK MIXES**

## **GENERAL USE PRECAUTIONS:**

Do not feed gin trash or treated forage to livestock.

Do not allow livestock to graze on treated areas.

\*Do not apply more than 4 lbs. ai/A per season. This includes all methods of application.

\*\*For aerial application, application rates are limited to 0.75 lbs. a.i./acre. In California and Arizona, aerial application rates are limited to 1 lb. a.i./acre.

Always read and follow all label directions when using any pesticide alone or in tank mix combinations. Observe all restrictions and precautions which appear on all product labels. The most restrictive labeling applies when using a tank mix.

**Table 6. Cotton Tank Mixes** 

APPLICATION METHOD	PESTS CONTROLLED	CHEMINOVA ACEPHATE 90SP AND TANK MIX PARTNER	AMOUNT OF CHEMINOVA ACEPHATE 90SP + TANK MIX PARTNER PER ACRE	REMARKS	DAYS TO HARVEST
FOLIAR  By Ground: 10 to 25 gals./A spray.  By Air: 3 to 10 gals./A of spray** (minimum 5 gals./A in CA)	Sweetpotato Whitefly (Silverleaf Whitefly)	CHEMINOVA ACEPHATE 90SP + DANITOL® 2.4 EC	0.5 to 1.0 lb. + 10 2/3 to 16 fl. oz.	User should comply with all applicable directions, restrictions and precautions on the EPA registered label for DANITOL® 2.4 EC Spray.	21

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	Armyworms	CHEMINOVA	0.28 to 1.1 lbs.	Users should comply with all	21
	(excluding Beet	ACEPHATE 90SP	+	applicable directions, restrictions and	
1	Armyworm)	+	1 to 2 pts.	precautions on the EPA registered	}
•	Bollworm	NUFOS® 4E		label for NUFOS 4E.	ļ
	Cabbage Looper				ļ
	Cotton Aphid			Cutworms:	İ
	Cutworms			Use 0.8 lb./A of CHEMINOVA	ì
ľ	Fleahopper			ACEPHATE 90SP.	ì
	Grasshoppers				
	Pink Bollworm	]		By Ground: Ground application is	1
	Plant Bugs			recommended.	Ì
	(Lygus, Mirids)				
	Salt Marsh Caterpillar	{		Control is most effective when	
	Thrips (including			ground application is made in the	,
ł	Western Flower	(		evenings and sprays are directed	ł
	Thrips)			toward the base and lower portion	Į
	Tobacco Budworm	ļ		of plant.	)
	Whitefly			1	Į
	(excluding			By Air: Aerial applications are	
Ì	Sweetpotato/Silverleaf	ł		less effective, but may be used.	Į
	Whitefly)	l l			]
	1			Apply when insects first appear or	}
				when damage is first noted.	
1	1				
ł ľ		1		Repeat at a minimum 3 day	
Ί,				spray interval if rate applied is	]
1	Į.			0.5 lbs. a.i./acre or less; repeat	· }
ļ	1	ļ		at a minimum 7 day spray	ı .
		]	II	interval if rate applied is more	
1	1	1		than 0.5 lbs. a.i./acre.*	

## **RESISTANCE-MANAGEMENT**

Cotton pest control programs, especially those for control of silverleaf whitefly populations, should employ a properly designed resistance-management strategy. Such resistance-management strategies include mixture or rotation of alternative classes of chemistry including organophosphates, carbamates, pyrethroids or insect growth regulators. Consult your state or area agricultural extension service for local resistance management strategies and advice on alternative insecticides.

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#### **COTTON TANK MIXES WITH PYRETHROIDS**

#### **GENERAL USE PRECAUTIONS:**

Do not feed gin trash or treated forage to livestock.

Do not allow livestock to graze on treated areas.

\*\*Do not apply more than 4 lbs. ai/A per season. This includes all methods of application.

\*\*\*For aerial application, application rates are limited to 0.75 lbs. a.i./acre. In California and Arizona, aerial application rates are limited to 1 lb. a.i./acre.

Synthetic Pyrethroids should be used within the guidelines of state and/or regional resistance management programs and recommendations. Always read and follow all label directions when using any pesticide alone or in tank mix combinations. Observe all restrictions and precautions which appear on all product labels. The most restrictive labeling applies when using a tank mix.

APPLICATION METHOD	PESTS CONTROLLED	CHEMINOVA ACEPHATE 90SP TANK MIX PARTNER	AMOUNT OF CHEMINOVA ACEPHATE 90SP + TANK MIX PARTNER PER ACRE	REMARKS	DAYS TO HARVEST
FOLIAR  By Ground: 10 to 25 gals./A spray.	Aphids Bollworm Cabbage Looper Cotton Leaf Perforator Cutworms	CHEMINOVA ACEPHATE 90SP + one of the following:	0.5 to 1.0 lb. + one of the following:	Apply when eggs or insects first appear.  Repeat at a minimum 3 day spray interval if rate applied is 0.5 lbs. a.i./acre or less; repeat at a	21
By Air: 3 to 5 gals./A spray*** (minimum 5	Fall Armyworm Fleahoppers Pink Bollworm (CA, AZ)	AMMO® 2.5 EC*	Refer to the AMMO 2.5 EC approved label for use instructions.	minimum 7 day spray interval if rate applied is more than 0.5 lbs. a.i./acre.**	21
gals./A in CA). See remarks for Cutworms.	Plantbugs Stinkbugs Sweetpotato/ Silverleaf Whitefly	ASANA® XL	Refer to the ASANA XL approved label for use instructions.	Stinkbugs: Use 0.8 lb./A of CHEMINOVA ACEPHATE 90SP.	21
	Thrips (Including Western Flower Thrips) Tobacco Budworm	BAYTHROID® 2 EC	Refer to the BAYTHROID 2 EC approved label for use instructions.	*Cutworms: Use 0.8 lb./A of CHEMINOVA ACEPHATE 90SP.	21
	Whitefly	CAPTURE® 2 EC	Refer to the CAPTURE 2 EC approved label for use instructions.	By Ground: Ground application is recommended.	21

KARATE® 1 E (Except CA)	Refer to the KARATE 1 E approved label for use instructions.	Control is most effective when ground application is made in the evenings and sprays are directed toward the base and lower portion	21
SCOUT X-TRA® (Except CA)	Refer to the SCOUT X-TRA approved label for use instructions.	of plant.  By Air: 3 to 10 gals./A spray (minimum 5 gals./A in CA)  Aerial applications are less effective but may be used.	28
		Apply when eggs or insects first appear or damage is first noted.	ţ

## **RESISTANCE MANAGEMENT**

Cotton pest programs, especially those for control of silverleaf whitefly populations, should employ a properly designed resistance-management strategy. Such resistance-management strategies include mixture or rotation of alternative classes of chemistry including organophosphates, carbamates, pyrethroids or insect growth regulators. Consult your state or area agricultural extension service for local resistance management strategies and advice on alternative insecticides.

# **CRANBERRY**

Table 7. Cranberry

APPLICATION METHOD	PESTS CONTROLLED	RATES OF CHEMINOVA ACEPHATE 90SP PER ACRE	REMARKS	DAYS TO HARVEST
FOLIAR  By Ground or Sprinkler: Sufficient water to give thorough coverage.  By Air: Minimum of 2	Cranberry Blossom Worm Cranberry Cutworm Gypsy Moth False Armyworm Fireworms Spanworms Spanworms Sparganothis	1.1 lbs. (17.6 oz.)	SPRINKLER IRRIGATION APPLICATION TO CRANBERRIES:  This product may only be applied through sprinkler irrigation systems including center pivot, lateral move, end tow, side (wheel) roll, travelers, big gun, solid set, or hand move. Do not apply this product through any other type of irrigation system.  Crop injury, lack of effectiveness, or illegal pesticide residues in the crop may result from non-uniform distribution of treated water.	90
Do not apply more	N application per growing than 1.1 lbs./A (1 lb. a start of bloom until all b	i) per season.	If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.	

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the label-prescribed safety devices for public water systems are in place.

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 necessary adjustments should the need arise.

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 backflow.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

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.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

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.

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.

Do not apply when wind speed favors drift beyond the area intended for treatment.

**Solid Set System:** Apply specified dosage for the entire length of the irrigation period for a 30 to 60 minute period at the end of a regular irrigation set or as a 30 to 60 minute injection as a separate application not associated with a regular irrigation. Allow time for all lines to flush the pesticide through all nozzles before turning off irrigation water. To ensure the lines are flushed and free of remaining pesticide, a dye indicator may be injected into the lines to mark the end of the application period. See NOTE.

Center Pivot Systems: Inject the specified dosage per acre continuously for one complete revolution of the system. See NOTE.

NOTE: Constant agitation must be maintained in the chemical supply tank during the entire period of insecticide application. Inject the product with a positive displacement pump into the main line ahead of a right turn to ensure adequate mixing.

Application of more than label-recommended quantities of irrigation water per acre may result in decreased product performance by removing the chemical from the zone of effectiveness.

**HEAD LETTUCE - Crisphead Type Only** 

Table 8. Head Lettuce (Crisphead Type Only)

APPLICATION METHOD	PESTS CONTROLLED	RATES OF CHEMINOVA ACEPHATE 90SP PER ACRE	REMARKS	DAYS TO HARVEST
FOLIAR ,	Aster Leafhopper Green Peach Aphid	0.5 to 1.1 lbs. (8 to 17.6 oz.)	Repeat at a minimum 3 day spray interval if rate applied is 0.5 lbs.	21
By Ground: 10 to 60 gals./A of spray broadcast By Air: Minimum of 5 gals./A of spray	Armyworms (excluding Beet Armyworm) Cabbage Looper	1.1 lbs. (17.6 oz.)	a.i./acre or less; repeat at a minimum 7 day spray interval if rate applied is more than 0.5 lbs. a.i./acre.*	Spring, Summer and early Fall crops in all areas, Winter crops in Florida and Texas, late Fall crops in Arizona and Winter crops in Arizona and California.

# **USE PRECAUTIONS**

\*Do not apply more than 2.2 lbs./A (2 lbs. ai) per season.
Do not feed trimmings to livestock or allow animals to graze on treated areas.
AZ & CA, Desert Areas: Do not apply after first head begins to form in crops which germinate from mid-September through November.

# MINT

Table 9. Mint - Peppermint and Spearmint

APPLICATION METHOD	PESTS CONTROLLED	RATES OF CHEMINOVA ACEPHATE 90SP PER ACRE	REMARKS	DAYS TO HARVEST
FOLIAR  By Ground: 20 to 100 gals./A of spray  By Air: 5 to 10 gals./A of spray	Alfalfa Looper Aphids Cutworms	1.1 lbs. (17.6 oz.)	Apply when eggs or insects first appear.  Make one repeat application at a minimum 7 day spray interval, if necessary, to maintain control.*	14
FOLIAR  By Ground: 40 to 100 gals./A of spray	Strawberry Root Weevil Adult Black Vine Weevil Adult	1.1 lbs. (17.6 oz.)	Strawberry Root and Black Vine Weevil: For control, apply in water in a minimum of 40 gals. spray per acre by ground. Good spray coverage and canopy spray penetration is critical for control. Increase spray volume and pressure with tall or dense mint canopy.  Apply after adult emergence is complete but prior to egg laying. Apply at dusk or during the night on a warm still evening. Two applications 10-14 days apart may be necessary to reduce heavy infestations.*	14

USE PRECAUTIONS FOR ALL APPLICATION METHODS
\*Do not apply more than 2.2 lbs./A (2 lbs. ai) per season.

Do not graze treated areas.

# **NON-BEARING CITRUS**

# GENERAL USE PRECAUTIONS

Do not graze treated areas.

DO NOT HARVEST citrus for one year after treatment.

Table 10. Non-Bearing Citrus

APPLICATION METHOD	PESTS CONTROLLED	RATES OF CHEMINOVA ACEPHATE 90SP PER ACRE	REMARKS
FOLIAR By Ground: 100 to 200 gals./A of spray	Aphids Grasshoppers Katydid Mealybugs Orangedogs Plantbugs Thrips Whiteflies (except Sweetpotato/Silverleaf)	0.5 lb. (8 oz.)	Repeat at a minimum 3 day spray interval.
	Citrus Blackfly	0.5 to 0.8 lb. (8 to 12.8 oz.)	Apply when eggs or insects first appear.  Use the high rate when a heavy infestation is present.  Repeat at a minimum 3 day spray interval if rate applied is 0.5 lbs. a.i./acre or less; repeat at a minimum 7 day spray interval if rate applied is more than 0.5 lbs. a.i./acre.
	Ants (not including fire ants, harvester ants, carpenter ants, or pharaoh ants)	0.8 lb. (12.8 oz.)	Repeat at a minimum 7 day spray interval if rate applied is more than 0.5 lbs. a.i./acre.
Spray individual juvenile or non-bea residual activity will depend upon sp			xceed specified rate in lbs. per acre. Length of application.
SOIL MOUND TREATMENT DRENCH METHOD	Ants (not including fire ants, harvester ants, carpenter ants, or pharaoh ants)	0.8 oz./5 gals.	Apply 1 gal. of mix to each mound area by sprinkling the mound until it is wet and treat a four (4) foot diameter circle around the mound.  Repeat application as necessary to maintain
	<u> </u>	<u> </u>	control.

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# **NON-CROP AREAS**

Table 12. Non-Crop Areas - Field Borders, Fencerows, Roadsides, Ditchbanks, Borrow Pits

APPLICATION METHOD	PESTS CONTROLLED	RATES OF CHEMINOVA ACEPHATE 90SP PER ACRE	REMARKS
FOLIAR	Grasshoppers	0.25 lb. (4 oz.)	For early to mid-season application.
By Ground: 10 to 20 gals./A of spray		(100)	Use the higher volumes when spraying dense foliage.
By Air: 1 to 5 gals./A of spray (minimum of 5 gals./A in CA)			An approved drift retardant may be added to aid in controlling drift and reducing evaporation of serial sprays.
			Repeat at a minimum 3 day spray interval.

# **USE PRECAUTIONS**

Do not graze or feed vegetation cut from treated areas.

Table 13. Non-Crop Areas - Wasteland

APPLICATION METHOD	PESTS CONTROLLED	RATES OF CHEMINOVA ACEPHATE 90SP PER ACRE	REMARKS
FOLIAR:  By Ground: 10 to 20	Black Grass Bugs Grasshoppers Mormon Crickets	1.6 to 2.2 oz.	Use the higher volumes when spraying dense foliage.
gals./A of spray	Mornion Crickets		An approved drift retardant may be added to aid in controlling drift and
By Air: ½ gal./A of spray (minimum of 5 gals./A in CA)			reducing evaporation of aerial sprays.

# **USE PRECAUTIONS**

Do not make more than one application per season.

Do not graze or feed vegetation cut from treated areas.

Do not allow animals to graze on treated areas.

Table 14. Peanuts

APPLICATION METHOD	PESTS CONTROLLED	RATES OF CHEMINOVA ACEPHATE 90SP PER ACRE	REMARKS	DAYS TO HARVEST
FOLIAR  By Ground: 10 to 50 gals./A of spray	Grasshoppers	0.25 to 0.5 lb. (4 to 8 oz.)	Apply when eggs or insects first appear.  Repeat at a minimum 3 day spray interval if rate applied is 0.5 lbs. a.i./acre or less; repeat at a minimum 7 day spray interval if rate applied is more than 0.5 lbs. a.i./acre.*	14 (of digging)
By Air: 5 to 10 gals/A of spray	Thrips	0.4 to 0.8 lb. (6.4 to 12.8 oz.)	CHEMINOVA ACEPHATE 90SP can be tank mixed with registered at-cracking and early post-emergence peanut herbicides, provided those products do not prohibit tank mixes, provided the most restrictive of label limitations and precautions are observed and provided no label dosage rates are exceeded.	į
	Corn Earworm Fall Armyworm Leafhoppers Loopers Velvetbean Caterpillar	0.8 to 1.1 lbs. (12.8 to 17.6 oz.)	To determine physical compatibility, pour the recommended proportions of each chemical with the same proportion of water as will be present in the chemical supply tank into a suitable container, mix thoroughly and allow to stand for five minutes. If the combination remains mixed, or can be remixed readily, the mixture is considered physically compatible. When mixing wettable powder or dry flowable formulations, add and disperse these first, then add liquid pesticides. Conduct another compatibility test at concentrations which will be present in the irrigation lines. If there is any separation which cannot be remixed readily, CHEMINOVA recommends that the combination not be used.  Combinations should be kept agitated and should be applied immediately. Do not allow combinations to set for prolonged periods in the chemical supply tank or irrigation lines.	

# **USE PRECAUTIONS**

Do not feed treated forage or hay to livestock.

Do not allow animals to graze on treated areas.

\*Do not apply more than 4.0 lbs. ai (4.4 lbs. formulated product) per acre per crop cycle.

BELL

Table 15. Peppers - Bell

APPLICATION METHOD	PESTS CONTROLLED	RATES OF CHEMINOVA ACEPHATE 90SP PER ACRE	REMARKS	DAYS TO HARVEST
FOLIAR	Grasshoppers	0.25 to 0.5 lb. (4 to 8 oz.)	Apply when eggs or insects first appear.	7
By Ground: 25 to 150			Repeat at a minimum 3 day spray	
gals./A of spray	Cabbage Looper	0.5 to 1.1 lbs.	interval if rate applied is 0.5 lbs.	]
	Green Peach Aphid	(8 to 17.6 lbs.)	a.i./acre or less; repeat at a minimum 7	
By Air: Minimum of 3	Tobacco Hornworm		day spray interval if rate applied is more	
gals./A of spray (minimum	European Corn Borer	0.8 to 1.1 lbs.	than 0.5 lbs. a.i./acre.*	
of 5 gals./A in CA)	[	(12.8 to 17.6 oz.)		

# **USE PRECAUTION**

\*Do not apply more than 2.2 lbs./A (2 lbs. ai) per season.

# NON-BELL

FOR USE IN MIDWESTERN, EASTERN STATES AND PUERTO RICO ONLY.
Table 16. Peppers – Non-Bell

APPLICATION METHOD	PESTS CONTROLLED	RATES OF CHEMINOVA ACEPHATE 90SP PER ACRE	REMARKS	DAYS TO HARVEST
FOLIAR  By Ground: 40 to 150 gals./A of spray	Aphids	0.5 lb. (8 oz.)	Repeat at a minimum 3 day spray interval.*	7

# **USE PRECAUTION**

\*Do not apply more than 1.1 ibs./A (1 lb. ai) per season.

## **TOBACCO**

## **GENERAL USE PRECAUTIONS**

\*Do not apply more than 4.4 lbs./A (4 lbs. ai) per season. This includes the use of CHEMINOVA ACEPHATE 90SP in transplant water, plant bed, soil, float bed (greenhouse), and foliar applications.

Table 17. Tobacco

APPLICATION METHOD	PESTS CONTROLLED	RATES OF CHEMINOVA ACEPHATE 90SP PER ACRE	REMARKS	DAYS TO HARVEST
FLOATBED  FOLIAGE: Apply at the equivalent of 1 tablespoon in 3 gals. water per every 1,000 sq. ft. of bed.	Cutworm Flea Beetle Green Peach Aphid Tobacco Aphid	0.8 lb. (12.8 oz.)	Apply evenly to ensure thorough coverage.  NOTE: Floatbed water should be disposed of in the transplanted field as transplanter water or foliar spray.  Repeat at a minimum 7 day spray interval.	
PLANTBED  FOLIAGE: Apply at the equivalent of 1 tablespoon in 1 gal. of water per every 1,000 sq. ft. of bed.	Cutworm Flea Beetle Green Peach Aphid Tobacco Aphid	0.8 lb. (12.8 oz.)	Apply evenly to ensure thorough coverage.  Repeat at a minimum 7 day spray interval.	
TRANSPLANT  Apply in a minimum of 100 gals, of transplant water per acre.	Cutworms Flea Beetle Green Peach Aphid Potato Tuberworm Tobacco Aphid Tobacco Thrips	0.8 lb. (12.8 oz.)	Provides control for approximately 3 to 4 weeks after transplanting.  For control late in the season, apply foliar sprays of CHEMINOVA ACEPHATE 90SP.	

# **USE PRECAUTIONS**

Do not apply more than 0.8 lb. CHEMINOVA ACEPHATE 90SP per acre as a transplant-water application as some phytotoxicity may occur. Make transplant water applications using mechanical transplant equipment only. Using such equipment, the insecticide/water mixture is mechanically applied directly into the soil along with the transplanted plants.

\*\*

FOLIAR	Grasshoppers	0.25 to 0.5 lb.	Repeat at a minimum 3 day spray	3
		(4 to 8 oz.)	interval if rate applied is 0.5 lbs.	
By Ground: 10 to 50	Flea Beetle	0.5 lb.	a.i./acre or less; repeat at a minimum 7	
gals./A of spray	Green Peach Aphid	(8 oz.)	day spray interval if rate applied is	
	Hornworm	į.	more than 0.5 lbs. a.i./acre.*	
By Air: Minimum of 3	Tobacco Thrips	_		
gals./A of spray	Stinkbugs	0.5 to 0.8 lb.	7	
	Tobacco Aphid	(8 to 12 oz.)		
	Vegetable Weevils		1	
	Budworm	0.8 lb.	7	
	Cabbage Looper	(12.8 oz.)	)	
	Cutworm	· ' '		
	Japanese Beetle		· I	

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# **SMALL VOLUME SPRAY EQUIPMENT**

	CEPHATE 90SP Spray Mix Using a Small F	
Label Recommendation CHEMINOVA ACEPHATE 90SP 100 Gals. Water	Equivalent CHEMINOVA ACEPHATE 90SP in 20 Gals. Water	Equivalent CHEMINOVA ACEPHATE 90SP in 1 Gal. Water (tsp./Gal.)
0.28 lb.	0.9 oz.	0.4 tsp.
0.5 lb.	1.6 oz.	0.83 tsp.
0.8 lb.	2.5 oz.	1.25 tsp.
1.1 lbs.	3.5 oz.	1.7 tsp.

# **SPECIALTY USES NON CROP AREAS**

Crop	Insects	Amount CHEMINOVA ACEPHATE 90SP Per Acre	Further Use Instructions
Non-Crop Areas (Field Borders, Fencerows, Roadsides, Ditchbanks, Borrow Pits, Wasteland)	Ants (not including fire ants, harvester ants, carpenter ants, or pharaoh ants)	Mound Treatment – Drench Method: Mix 0.83 oz. in 5 gals. of water. Apply 1 gal. of mix to each mound area by sprinkling the mound until it is wet and treat a four (4) foot diameter circle around the mound.	For best results apply the material in the early morning or late afternoon when the ants are most active.  Applications made under prolonged hot and dry conditions may be ineffective due to the location of the ants deep within the nest.  Grass in treated area may be injured.  Do not treat mound more than once per season.

# SPECIALTY USES CONTAINER GROWN NURSERY STOCK

Plants	Insects	Amount CHEMINOVA ACEPHATE 90SP Per 100 Gals.	Time of Application	Recommended Application
Container Grown Nursery Stock (Arborvitae Azalea Camellia Rhododendron	Black Vine Weevil Strawberry Root Weevil	0.8 lb. (12.8 oz.)	Application should be made by mid-September for greenhouse stock and by mid-October for outdoor stock. Consult your local county extension agent for information on the identification and control of root weevils on ornamentals.	Apply the specified amount of CHEMINOVA ACEPHATE 90SP per 100 gals. of solution so as to thoroughly drench the root system.  Repeat at a minimum 7 day spray interval.*
Roses Vibumum Yew)	Ants (not including fire ants, harvester ants, carpenter ants, or pharaoh ants)	0.8 lb. (12.8 oz.)		

# TREES AND SHRUBS

			VEES AND SHIVORS	
Plants	Insects	Amount CHEMINOVA ACEPHATE 90SP Per 100 Gals.	Time of Application	Recommended Application
Trees and Shrubs (Except Flowering Crabapple, see	Aphids Bagworms Birch Leafminer Tent Caterpillars*	0.28 lb. (4.5 oz.)	As the insects begin to appear.	Apply the specified amount of CHEMINOVA ACEPHATE 90SP in 100 gals. water with a hydraulic sprayer. The addition of a suitable sticker improves
below).	Lace Bugs Leafrollers	0.5 lb.	As the inecete begin to	control of Gypsy Moth larvae.  *Mist blower application. Adjust rates to 1-
1,	Douglas Fir Tussock Moth Larvae Gypsy Moth Larvae*	(8 oz.)	As the insects begin to appear.	1/3 lbs. per 100 gals. water for Gypsy Moth control and 1.0 lb. per 100 gals. water for Tent Caterpillar control.
	Webworms	<u> </u>	<u> </u>	Do not apply to Huckleberry, Balm of

Scales (Crawlers)	0.5 lb. (8 oz.)	As crawlers begin to appear. Repeat applications at a 2 week or more interval, may be necessary where there is continuous crawler production.	Gilead, Cottonwood, Lombardy Poplar and Viburnum suspensum.  Nursery Crops: Before treating large plantings, spray only a few plants and observe two weeks for phytotoxicity.  Repeat at a minimum 3 day spray interval.
Ponderosa Pine Needle Miner	0.5 lb. (0.8 oz.)	Time of application is important. Consult your Farm Advisor or County Extension Agent.	Apply the specified amount of CHEMINOVA ACEPHATE 90SP in 100 gals. water with a hydraulic sprayer as a full coverage spray.
Grasshoppers	0.5 lb. (0.8 oz.)	As the grasshoppers begin to appear.	Repeat at a minimum 3 day spray interval.
California Oakworm Cankerworms (Spring and Fall)	0.28 to 0.5 lb. (4.5 to 8 oz.)	As the insects begin to appear. Use the higher amount when the larger larvae are present.	Apply the specified amount of CHEMINOVA ACEPHATE 90SP in 100 gals. water with a hydraulic sprayer.
Nantucket Pine Tip Moth Larvae	0.8 lb. (12.8 oz.)	Time of application is important. Consult your Farm Advisor or County Extension Agent. Repeat applications will be required for subsequent generations.	Repeat at a minimum 3 day spray interval if rate applied is 0.5 lbs. a.i./acre or less; repeat at a minimum 7 day spray interval if rate applied is more than 0.5 lbs. a.i./acre.
Root Weevil Adults	0.8 lb. (12.8 oz.)	Apply when first feeding damage occurs. Repeat applications, at four week intervals until the first heavy frost, may be necessary for complete foliage protection.	Apply the specified amount of CHEMINOVA ACEPHATE 90SP Soluble Powder in 100 gals. water with a hydraulic sprayer as a full coverage spray.  Repeat at a minimum 7 day spray interval.
Box Elder Bugs Sawflies Budworms Leafhoppers	0.8 lb. (12.8 oz.)	As the insects begin to appear.	
Japanese Beetle	0.9 lbs. (14.4 oz.)	As the Japanese Beetles begin to appear. Repeat applications at 2 week intervals, may be necessary.	

Douglas Fir (Christmas Trees)	Elm Leaf Beetle (larvae) Douglas Fir Needle Midge	0.9 lbs. (14.4 oz.) 0.5 lb. (8 oz.) (0.5 lb. per acre)	As the larvae begin to appear. CHEMINOVA ACEPHATE 90SP will not prevent Elm Leaf Beetle eggs from hatching.  Application should be made no more than 2 weeks prior to bud burst. For additional pest management	Apply the specified amount of CHEMINOVA ACEPHATE 90SP in not less than 2 gals. of spray per acre by air or in 100 gals. of spray per acre by ground.
			information, consult your County Extension Service.	Repeat at a minimum 3 day spray interval.
Flowering Crabapples	Aphids Tent Caterpillars Leafrollers	0.28 lb. (4.5 oz.)	As the insects begin to appear.	Apply the specified amount of CHEMINOVA ACEPHATE 90SP Soluble Powder in 100 gals. water with a hydraulic sprayer.  Do not apply more often than 3 times in a growing season at a 4 week interval.  Caution: Phytotoxicity has occurred on the following Crabapple varieties: Hopa, Ichonoski, Malusfloribunda, Pink Perfection, Red Wine and Snow Cloud.
Crape Myrtle	Aphids	2 to 3 level Tbsp. (0.5 to 0.8 oz.) per 1 Tbsp. of water.	As aphids begin to appear.	Make a paint-on slurry by mixing the specified amount of CHEMINOVA ACEPHATE 90SP with 1 tablespoon of water. Remove the loose bark from the trunk areas to be treated. Completely paint a band around each trunk to a width twice its diameter. Application should be made to trunks within a zone 6 to 12 inches above the ground and below the point where branching begins. For multi-trunk plants be certain to treat all trunks. For either single or multi-trunk plants, application should be made as low as possible within the recommended treatment zone.

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# GOLF COURSE AND SOD FARM TURFGRASS DO NOT ALLOW LIVESTOCK TO GRAZE TREATED AREAS. DO NOT FEED TREATED GRASS TO LIVESTOCK.

# **USE PRECAUTIONS**

Aerial application to turf is prohibited.
Observe a 3 day preharvest interval for harvesting sod.
Use limited to sod farms and golf courses.

Plant	Insects	Amount CHEMINOVA ACEPHATE 90SP Per 1000 Sq. Ft.	Time of Application	Recommended Application
Golf Course Turfgrass	Fall Armyworm Yellow Striped Armyworm Southern Armyworm	0.4 to 1 oz. (1.1 to 2.75 lbs. Per acre)	As the insects appear. A repeat application at 2 week intervals may be necessary.	Apply the specified amount of CHEMINOVA ACEPHATE 90SP per 1000 sq. ft. Use a minimum of 5 gals, water per 1000 sq. ft. to obtain good coverage.
	Čutworm	1 to 1.6 oz. (2.75 to 4.4 lbs. per acre)		
	Chinch Bugs	1 to 1.6 oz. (2.75 to 4.4 lbs. per acre)	Apply as needed for adult population knockdown (10 to 14 days).	Apply the specified amount of CHEMINOVA ACEPHATE 90SP per 1000 sq. ft. Use 1 to 15 gals. water per 1000 sq. ft. to obtain good coverage.
	Sod Webworm (Crambus app.)	0.4 to 0.83 oz. (1.1 to 2.25 lbs. per acre)	As sod webworms begin to appear. Use the higher amount when quick knockdown is needed or with heavy infestations.	
			Repeat application may be necessary. Repeat at a minimum 7 day interval.	
	Leafhopper	0.83 oz. (2.25 lbs. per acre)	As the leafhoppers begin to appear. A repeat application at a minimum 7 day interval may be necessary.	

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	Mole Crickets (Except CA) Spittlebug (Except CA)	0.83 to 1.6 oz. (2.25 to 4.3 lbs. per acre)	As mole crickets begin to appear. For knockdown of existing populations, more than one application may be required throughout the growing season. For heavy infestations, use the higher dosage rate.	Apply the specified amount of CHEMINOVA ACEPHATE 90SP per 1000 sq. ft. Use 1 to 15 gals. water per 1000 sq. ft. to obtain good coverage.  Apply during late afternoon or early evening hours and after an irrigation. Do not irrigate after application.  The use of a lemon fragrance substance in the spray mix may enhance control by acting as a flushing agent and thus provide increased mole cricket contact with the CHEMINOVA ACEPHATE 90SP. The following lemon-scented products have been shown to be effective flushing agents: Lemon Joy, Lemon Palmolive, and Mighty Myrt Products Manufacture-Base Pure Lemon Fragrance. The use rate for these lemon-scented products is 2 teaspoons per gallon of water for small total mix volumes or 6 fl. oz. per 50 gals. of water for large total mix volumes.
	Greenbug (Schizaphia graminum) Grasshoppers	0.4 oz. (1.1 lbs. per acre)	Apply when insects or their damage first appears. Repeat as necessary with a minimum 7 day interval.	Apply the specified amount of CHEMINOVA ACEPHATE 90SP. Use 4 gals. of water per 1000 sq. ft. to obtain good coverage. Do not mow turfgrass for at least 24 hours after application.
3.	Black Turfgrass Ataenius (Except CA)	1.25 to 1.6 oz. (3.4 to 4.3 lbs. per acre)	Apply when insects or their damage first appear.	Apply the specified amount of CHEMINOVA ACEPHATE 90SP. Use a minimum 5 gals. of water per 1000 sq. ft. to obtain good coverage. Irrigate lightly after application (not more than ½ inch). Use the higher rate for severe infestations.
Dichondra (Plant Site For Golf Course Turfgrass)	Cutworm Flea Beetle Southern Armyworm Yellow Striped Armyworm	0.83 to 1.6 oz. (2.25 to 4.3 lbs. per acre)	As the insects appear. Repeat at 2 week intervals as necessary.	Apply the specified amount of CHEMINOVA ACEPHATE 90SP per 1000 sq. ft. Use a minimum of 15 gallons water per 1000 square feet to obtain good coverage.

Sod Farm Turfgrass	Fall Armyworm Yellow Striped Armyworm Southern Armyworm	0.4 to 1 oz. (1.1 to 2.75 lbs. Per acre)	As the insects appear. A repeat application at 2 week intervals may be necessary, but no less than a minimum 7 day spray interval.	Apply the specified amount of CHEMINOVA ACEPHATE 90SP per 1000 sq. ft. Use a minimum of 5 gals. of water per 1000 sq. ft. to obtain good coverage.
i i	Cutworm	1 to 1.2 oz. (2.75 to 3.3 lbs. per acre)		
	Chinch Bugs	1 to 1.2 oz. (2.75 to 3.3 lbs. per acre)	Apply as needed for adult population knockdown (10 to 14 days with a minimum 7 day interval.).	Apply the specified amount of CHEMINOVA ACEPHATE 90SP per 1000 sq. ft. Use a 1-15 gals. water per 1000 sq. ft. to obtain good coverage.
	Sod Webworm (Crambus app.)	0.4 to 0.83 oz. (1.1 to 2.25 lbs. per acre)	As sod webworms begin to appear. Use the higher amount when quick knockdown is needed or with heavy infestations.  Repeat application may be necessary. Repeat at a	
	Leafhopper	0.83 oz. (2.25 lbs. per acre)	minimum 7 day interval.  As the leafhoppers begin to appear. A repeat application at a minimum 7 day interval may be necessary.	

	Mole Crickets (Except CA) Spittlebug (Except CA)	0.83 to 1.2 oz. (2.25 to 3.3 lbs. per acre)	As mole crickets begin to appear. For knockdown of existing populations, more than one application may be required throughout the growing season. For heavy infestations, use the higher dosage rate. Repeat applications should be made at a minimum 7 day interval.	Apply the specified amount of CHEMINOVA ACEPHATE 90SP per 1000 sq. ft. Use a 1-15 gals. water per 1000 sq. ft. to obtain good coverage.  Apply during late afternoon or early evening hours and after an irrigation. Do not irrigate after application.  The use of a lemon fragrance substance in the spray mix may enhance control by acting as a flushing agent and thus provide increased mole cricket contact with the CHEMINOVA ACEPHATE 90SP. The following lemon-scented products have been shown to be effective flushing agents: Lemon Joy, Lemon Palmolive, and Mighty Myrt Products Manufacture-Base Pure Lemon Fragrance. The use rate for these lemon-scented products is 2 teaspoons per gallon of water for small total mix volumes or 6 fl. oz. per 50 gals. of water for large total mix volumes.
	Greenbug (Schizaphia graminum) Grasshoppers	0.4 oz. (1.1 lbs. per acre)	Apply when insects or their damage first appears. Repeat as necessary (with a minimum 7 day interval).	Apply the specified amount of CHEMINOVA ACEPHATE 90SP. Use 4 gals. of water per 1000 sq. ft. to obtain good coverage. Do not mow turfgrass for at least 24 hours after application.
1.	Black Turfgrass Ataenius (Except CA)	1.2 oz. (3.3 lbs. per acre)	Apply when insects or their damage first appear. Repeat at a minimum 7 day spray interval.	Apply the specified amount of CHEMINOVA ACEPHATE 90SP per 1000 sq. ft. Use a minimum of 5 gallons water per 1000 square feet. Irrigate lightly after application (not more than ½ inch). Use the higher rate for severe infestations.
Dichondra (Plant Site For Sod Farm Turfgrass)	Cutworm Flea Beetle Southern Armyworm Yellow Striped Armyworm	0.83 to 1.2 oz. (2.25 to 3.3 lbs. per acre)	As the insects appear. Repeat at 2 week intervals as necessary with a minimum 7 day interval.	Apply the specified amount of CHEMINOVA ACEPHATE 90SP per 1000 sq. ft. Use a minimum of 15 gals. of water per 1000 sq. ft. to obtain good coverage.

# **OUTDOOR AND PERIMETER SPRAY**

Location	Insects	Amount CHEMINOVA ACEPHATE 90SP Per Gallon	Time of Application	Recommended Application
Outdoor and perimeter area.	Ants (not including fire ants, harvester ants, carpenter ants, or pharaoh ants) Crickets Earwigs Pillbugs	1.3 oz. (0.08 lb.)	As the insects appear.	Apply specified amount of CHEMINOVA ACEPHATE 90SP per each gallon of water used.  Apply to a band of soil 6 to 10 feet adjacent to the structure and to a height of 2 to 3 feet on the foundation where pests may be active or may find entrance. Also apply as a residual spray or with a paint brush to surfaces of buildings, window frames, shutters, entryways, screens, eaves, patios, garages, carports, around garage areas and other areas where these pests congregate.

NOTE: Not for use on residential turfgrass.

# **OUTDOOR FLORAL CROPS AND GROUND COVERS**

Plants	Insects	Amount CHEMINOVA ACEPHATE 90SP Per 100 Gals.	Time of Application	Recommended Application
Chrysanthemums Daisies Dahlias Easter Lily Gladioli Gypsophila Pachysandra Pansy Peony Roses Sedum Statice Strawflower Yarrow Zinnia	Aphids Thrips Lygus	0.5 lb. (8 oz.)	As insects begin to appear. Repeat applications may be necessary at a minimum 3 day interval.	Apply the specified amount of CHEMINOVA ACEPHATE 90SP in 100 gals. water with a hydraulic sprayer as a full coverage spray. Multiple applications may cause slight tip burn or marginal leaf necrosis on some varieties. Test on a few plants to determine varietal susceptibility.
Roses* Boston Ivy	Japanese Beetle	0.9 lbs. (14.4 oz.)	As the Japanese Beetles begin to appear. Repeat applications at 2 week intervals may be necessary.	

# **USE PRECAUTIONS**

Do not apply more than 1.0 lb. a.i./acre per 100 gallons of water. \*Do not exceed 0.75 lb a.i./acre for cut flowers and 1.0 lb a.i./acre for all other ornamentals.

**GREENHOUSE FLORAL AND FOLIAGE PLANT CROPS** 

Plant		Insects	Amount CHEMINOVA ACEPHATE 90SP Per 100 Gals.	Time of Application	Recommended Application
Roses		Leafrollers	0.5 to 0.8 lb. (8 to 12.8 oz.)	As leafrollers begin to appear. Use the higher amount when the large larvae are present.	Apply the specified amount of CHEMINOVA ACEPHATE 90SP in 100 gals, water with a hydraulic sprayer as a full coverage spray.
				·	Repeat at a minimum 3 day spray interval if rate applied is 0.5 lbs. a.i./acre or less; repeat at a minimum 7 day spray interval if rate applied is more than 0.5 lbs. a.i./acre.

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Foliage Plants Anthuriums Cacti Orchids Poinsettia	Aphids	0.28 lb. (4.5 oz.)	As aphids begin to appear.	Apply the specified amount of CHEMINOVA ACEPHATE 90SP in 100 gals. water with a hydraulic sprayer as a full coverage spray. The addition of a wetting agent may be required on difficult to wet foliage.
	Mealybugs Thrips Whiteflies	0.5 lb. (8 oz.)	As the insects begin to appear. A repeat application, at a 2 week interval, may be necessary for control of mealybugs and whiteflies.	Caution: Phytotoxicity has occurred on the following foliage plants: Bletchum gibbum, Cissus antarctica, Ficus triangularis, Fittonia verschaffelti, Maranta leuconeura kerchoveana, Pachystachya lutea, Plectranthus australis, Polypodium aureus, Polystichum, Pteris ensiformis, Tolmiea menziesii. Before treating large plantings, spray only a few plants and observe two weeks for varietal toxicity. Application of CHEMINOVA ACEPHATE 90SP on Poinsettias after bract formation may result in phytotoxicity on certain varieties.
	Scales (Crawlers)	0.5 lb. (8 oz.)	As crawlers begin to appear. Repeat applications, at a 2 week or more interval, may be necessary where there is continuous crawler production.	
	Sweet Potato Whiteflies (Except CA)	0.28 lb. (4.5 oz.) plus TAME® 2.4 EC Spray 10 2/3 fl. oz. (0.2 lb. ai)	Apply when insects first appear. If a population is well established, make one application of the tank mix and follow 5 to 7 days later with TAME alone at 16 fl. oz./100 gals. See TAME label for instructions.	For sweet potato whitefly control, apply the specified amount of CHEMINOVA ACEPHATE 90SP plus TAME 2.4 EC Spray as a tank mix at a volume necessary to obtain good coverage. Follow the TAME label for specific instructions on the alternation of TAME plus CHEMINOVA ACEPHATE 90SP and TAME alone and the rotation instructions to avoid potential resistance.

Roses Carnations Chrysanthemums	Aphids Thrips	0.5 lb. (8 oz.)	As aphids begin to appear.  As thrips begin to appear or at the tight flower bud stage. Repeat applications may be necessary at a minimum 3 day inteval.	Apply the specified amount of CHEMINOVA ACEPHATE 90SP in 100 gals. water with a hydraulic sprayer as a full coverage spray.  Do not apply more often than once every 28 days to Carnations and Chrysanthemums.  Caution: Phytotoxicity has occurred on the following Chrysanthemum varieties: Albatross, Bonnie Jean, Dixie, Garland, Gem, Iceberg, Pride, Showoff, Statesman, Tally Ho, Westward Ho, and Wild Honey.  Before treating large Chrysanthemum plantings, spray only a few plants and observe two weeks for varietal phytotoxicity. Do not apply to Chrysanthemums and Roses with open flowers.
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#### **USE PRECAUTIONS**

Do not apply more than 1.0 lb. a.i./acre per 100 gallons of water. Do not exceed 0.75 lb a.i./acre for cut flowers and 1.0 lb a.i./acre for all other ornamentals.

Do not apply under conditions involving possible drift to food, forage or other plantings that might be damaged or the crops thereof rendered unfit for sale, use or consumption.

## STORAGE AND DISPOSAL

PROHIBITIONS: Do not contaminate water, food or feed by storage, disposal or cleaning of equipment. Open dumping is prohibited. STORAGE: Keep pesticide in original container. Do not put concentrate or dilute into food or drink containers. Store in cool, dry place. Protect from excessive heat. Do not contaminate food or foodstuffs. Do not store or transport near feed or food. For help with any spill, leak, fire or exposure involving this material, call CHEMTREC day or night 1-800-424-9300.

**PESTICIDE DISPOSAL:** Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. **CONTAINER DISPOSAL:** Do not reuse the outer bag. Dispose of the outer bag in a sanitary landfill or by incineration, or if allowed by State and local authorities, by burning. If burned, stay out of smoke.

AMMO® – Reg. TM of FMC Agri Chemical Group for cypermethrin insecticide.

ASANA® – Reg. TM of E.I. duPont de Nemours & Co., Inc. for esfenvalerate insecticide.

BAYTHROID® – Reg. TM of Mobay Corp. for cyfluthrin synthetic pyrethroid.

CAPTURE® – Reg. TM of FMC Agri Chemical Group for bifenthrin insecticide miticide.

DANITOL® – Reg. TM of Sumitomo Chemical Company, LTD for fenpropathrin insecticide-miticide.

EGGS/DEADHATCH® – Reg. TM of Valent U.S.A. Corporation

KARATE® – Reg. TM of ICI Agrochemicals Co., U.K., for lambdacyhalothrin insecticide.

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NUFOS® – Reg. TM of Cheminova for chlorpyrifos insecticide.

SCOUT® and SCOUT X-TRA - Reg. TM of Hoechst-Roussel Agri-Vet Co. for tralomethrin pyrethroid insecticide.

TAME® – Reg. TM of Valent U.S.A. Corporation

#### WARRANTY DISCLAIMER

Cheminova warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. CHEMINOVA MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABLITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

#### **INHERENT RISKS OF USE**

It is impossible to eliminate all risks associated with use of this product. Crop injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of Cheminova or the seller. All such risks shall be assumed by Buyer.

#### **LIMITATION OF REMEDIES**

The exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories), shall be limited to, at Cheminova's election, one of the following:

- (1) Refund of purchase price paid by buyer or user for product bought, or
- (2) Replacement of amount of product used.

Cheminova shall not be liable for losses or damages resulting from handling or use of this product unless Cheminova is promptly notified of such loss or damage in writing. In no case shall Cheminova be liable for consequential or incidental damages or losses.

The terms of the Warranty Disclaimer above and this Limitation of Remedies cannot be varied by any written or verbal statements or agreements. No employee or sales agent of Cheminova or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or this Limitation of Remedies in any manner.