

# Tobacco Insect Control

## Treatments For Insects In Beds

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Insect	Insecticide*/ Formulation	Rate Per 100 Sq. Yd. Bed (For Spray Mixtures, Use Rec. Rate in 3-6 Gal. of Water Per 100 Sq. Yd. Bed)	Remarks
<b>Aphids</b>	Orthene 97PE (acephate)	3/4 lb (12 oz)	Apply to foliage at the equivalent of 3/4 tablespoon in 1 gallon of water every 1,000 sq ft of bed. Apply evenly to insure thorough coverage. <b>Do not</b> apply more than 4 1/8 lb / A (4 lb ai) per season. This includes the use of Orthene in transplant water, plant bed, soil, float bed (greenhouse) and foliar applications.
<b>Flea Beetles</b>	Sevin 80SP (carbaryl)	15 T / 6 gal / 100 sq yd	Apply as needed and before pulling plants. A tight canvas on bed will help control flea beetles.
	Sevin XLR Plus	1.0-2.0 qt / A 0.656-1.31 fl oz / 100 sq yd	
	Orthene 97PE (acephate)	3/4 lb (12 oz)	Apply to foliage at the equivalent of 3/4 tablespoon in 1 gallon of water every 1,000 sq ft of bed. Apply evenly to insure thorough coverage. Do not apply more than 4 1/8 lb/A (4 lb ai) per season. This includes the use of Orthene in transplant water, plant bed, soil, float bed (greenhouse) and foliar applications.
<b>Slugs</b>	Slaked lime (hydrated lime, Ca(OH) <sub>2</sub> )	4 lb	Dust when plants are dry. Burns when plants are wet.

## Soil Insect Control For Fields

Insect	Insecticide*/ Formulation	Rate Per Acre	Remarks
<b>Wireworms</b>	Platinum 2SC (thiamethoxam)	1.3 fl oz / 1,000 plants	Apply at transplant using one of the following methods. <b>Tray treatment.</b> Apply to transplants while still in trays. Thoroughly water transplants. Then apply the chemical evenly to the transplants. Immediately after treatment, spray transplants with enough water to wash the chemical off the foliage and into the soil. Set transplants in the field within two days after treatment. During transplanting, workers handling transplants must wear waterproof gloves. <b>Do not</b> apply Platinum 2SC or 75SG to float-bed water. <b>Soil (drench transplants).</b> Mix appropriate amounts of Platinum in water and drench transplants as they are being placed in the ground.  Make only one soil or tray treatment application per season. <b>Do not</b> exceed a total of 8 fl oz (0.125 lb ai) of Platinum 2 SC or 2.67 oz (0.125 lb ai) 75 SG per acre per growing season.
	75SG	0.43 oz / 1000 plants	
	Admire Pro 4.6F (imidacloprid)	<b>Seedling Tray Drench</b> 0.6-1.2 fl oz / 1000 plants  <b>In-Furrow or Transplant-Water</b> 0.8-1.2 fl oz / 1000 plants	Uniform broadcast foliar spray to seedlings in trays (tray drench) not more than 7 days prior to transplanting followed immediately by overhead irrigation to wash Admire Pro from foliage into potting media.  In-furrow spray or transplant-water drench during setting. 14 days PHI. Maximum Admire Pro allowed per crop season is 14.0 fl oz / Acre (0.5 lb ai / Acre).

Insect	Insecticide*/ Formulation	Rate Per Acre	Remarks
Wireworms (Cont'd)	Brigade 2EC (bifenthrin)	4.0-6.4 fl oz / A	<p><b>Pre-Transplant Soil Applications.</b> Apply 0.0624 - 0.1 lb ai / A in a minimum of 10 gal / A to control soil pests. Use of suitable equipment to incorporate into top 4" of the soil.</p> <p><b>At-Transplant Water Treatment Application.</b> Apply 0.0625 - 0.1 lb ai / A in a water treatment application volume of 10 - 200 gal / A.</p> <p><b>Do not</b> apply more than 0.2 lb ai / A per season. <b>Do not</b> apply later than layby. May be tank mixed with Command, Spartan and other herbicides approved for tobacco use.</p>
	Capture LFR (bifenthrin)	3.4-8.5 fl oz / A (0.04-0.1 lb ai / A)	<p><b>Pre- Transplant soil applications:</b> Use of suitable equipment to incorporate into top 4" of the soil is required to control below ground pests.</p> <p><b>At- Transplant water treatment application:</b> Apply 0.0625 - 0.1 lb ai / A in a water treatment application volume of 10-200 gal/A.</p>
	Lorsban Advanced 3.755EW (chlorpyrifos)	2 pt / A	<p>Preplant broadcast spray. Apply 24 to 48 hours before bedding and transplanting using a spray volume of 10 gpa or more. Incorporate immediately after application to a depth of 2 to 4 inches using suitable incorporation equipment. Knock down beds to final shape for transplanting. Use PTO-driven implements that will incorporate Lorsban Advanced to a depth of 4 inches. <b>Do not</b> make more than one application per season. Maximum single application rate is 1 lb a.i. chlorpyrifos per acre. REI 24 hr.</p>
	Lorsban 4EC (chlorpyrifos)	2 pt / A	<p>Apply as a preplant broadcast spray. Apply 24 to 48 hours before bedding and transplanting using a spray volume of 10 gal / A or more. Incorporate immediately to a depth of 2 to 4 inches. Before broadcast application into existing beds, knock down beds to final shape for transplanting. Use a PTO-driven implements that will incorporate Lorsban-4E to a depth of 4 inches. 24 hr REI.</p>
	Lorsban 15G (chlorpyrifos)	13.5 lb / A	<p>Use as pre-plant soil incorporated treatment. Apply one week before transplanting, using equipment that will evenly distribute granules over a treated area. Immediately following application, incorporate granules into the soil to a depth of 2-4 inches using suitable equipment. <b>Do not</b> apply within seven days of transplanting. <b>Do not</b> make more than one application per season. 24 hr REI.</p>

### Float Beds / Greenhouse

Insect	Insecticide*/ Formulation	Rate Per Acre	Remarks
Slugs	Deadline 4G Bullets (metaldehyde)	1 lb / 1,100-3,600 sq ft	Apply in evening. Especially beneficial if applied following rain or watering. Apply every 3 to 4 weeks during growing season or as needed.
	Orthene 97PE (acephate)	3/4 lb (12 oz)	Apply to foliage at the equivalent of 3/4 tablespoon in 3 gallon of water every 1,000 sq ft of bed. Apply evenly to insure thorough coverage. <b>NOTE:</b> Float bed water should be disposed of in the transplanted field in either transplant water or foliar spray. <b>Do not</b> apply more than 4 1/8 lb / A (4 lb ai) per season. This includes the use of Orthene in transplant water, plant bed, soil, float bed (greenhouse) and foliar applications.

### Insect Control In Field Tobacco

Insect	Insecticide*/ Formulation	Rate Per Acre	Remarks
Aphids	Orthene 97PE (acephate)	<b><u>Transplant Water Treatment</u></b>  1 ½ lb (24 oz) (Burley) (24C Registration)  3/4 lb (12 oz) (Dark)  <b><u>Foliar</u></b>  1 ½ lb (24 oz) (Burley) (24 C Registration)  ½ lb (8 oz) (Dark)	<b><u>Transplant Water.</u></b> Provides control of early season aphids for approximately 3-4 weeks after transplanting. Apply in a minimum of 100 gallons (200 gallons for burley) of transplant water per acre. Premix in water to form a slurry solution prior to adding to the transplant water tank.  <b><u>Foliar.</u></b> Apply as a foliar spray for later season insects. Apply in 10 to 50 gallons water per acre with ground equipment or a minimum of 3 gallons per acre by air. Apply on a 7 day schedule or as needed. 3 day PHI.  <b><u>All.</u></b> <b>Do not</b> apply more than 4 1/8 lb / A (4 lb ai) per crop cycle. This includes the use of Orthene in transplant water, plant bed, soil, float bed (greenhouse) and foliar applications.
	Platinum 2SC (thiamethoxam)	0.5-1.3 fl oz / 1,000 plants	Apply at transplant using one of the following methods. <b><u>Tray treatment.</u></b> Apply to transplants while still in trays. Thoroughly water transplants. Then apply the chemical evenly to the transplants. Immediately after treatment, spray transplants with enough water to wash the chemical off the foliage and into the soil. Set transplants in the field within two days after treatment. During transplanting, workers handling transplants must wear waterproof gloves. <b>Do not</b> apply Platinum 2 SC or 75 SG to float-bed water.  <b><u>Soil (drench transplants).</u></b> Mix appropriate amounts of Platinum in water and drench transplants as they are being placed in the ground.  Make only one soil or tray treatment application per season. <b>Do not</b> exceed a total of 8 fl oz (0.125 lb ai) of Platinum 2SC or 2.67 oz (0.125 lb ai) 75 SG per acre during each growing season.
		75SG	0.17-0.43 oz / 1000 plants
	Actara 25WDG (thiamethoxam)	2.0-3.0 oz / A	<b><u>Foliar.</u></b> Apply before pests reach damaging levels. Apply higher rates for heavy infestations. <b>Do not</b> exceed a total of 3.0 oz (0.047 lb ai) / A during each growing season. 14 days PHI. Use a minimum of 20 gal of water per acre. <b>Do not</b> use a foliar application of Actara following an in-furrow or soil application of Platinum.

## Insect Control In Field Tobacco

Insect	Insecticide*/ Formulation	Rate Per Acre	Remarks
Aphids (Cont'd)	Admire Pro 4.6F (imidacloprid)	<b><u>Seedling Tray Drench</u></b> 0.5 fl oz / 1000 plants  <b><u>In-Furrow or Transplant-Water</u></b> 0.6 fl oz / 1000 plants	Uniform broadcast foliar spray to seedlings in trays (tray drench) not more than 7 days prior to transplanting followed immediately by overhead irrigation to wash Admire Pro from foliage into potting media. In-furrow spray or transplant-water drench during setting. 14 days PHI. Maximum Admire Pro allowed per crop season is 14.0 fl oz / Acre (0.5 lb ai / Acre).
	Belay 16WSG (clothianidin)	<b><u>TPW &amp; TD</u></b> 10 oz / A  <b><u>Foliar</u></b> 1.5-2.0 oz / A	Apply to the soil in TPW or by drench to trays or flats prior to transplanting. Plants in flats or trays should be watered by overhead irrigation to wash Belay 16 WSG from the foliage into the potting media. Soil application sometimes causes yellowing of foliage present at the time of transplanting. This does not have an impact on growth and yields. <b>Do not</b> apply more than a total of 0.2 lb ai per acre per season. <b>Do not</b> apply more than 6.4 oz of Belay 50 WDG per acre per season. <b>Do not</b> apply treatments less than 7 days apart. <b>Do not</b> apply within 14 days of harvest. <b>Do not</b> apply Belay 50 WDG through any type of irrigation system.
	Brigade 2EC (bifenthrin)	2.56-6.4 fl oz / A	<b><u>Foliar.</u></b> Apply 0.04 - 0.10 lb ai / A per foliar application up to & including layby in a minimum of 10 gal / A. <b>Do not</b> make more than 2 foliar applications per season. <b>Do not</b> apply more than 0.2 lb ai / A per season. May be tank mixed with Command, Spartan and other herbicides approved for tobacco use.
	Capture LFR (bifenthrin)	3.4-8.5 fl oz / A (0.04-0.1 lb ai / A)	<b>Pre- Transplant soil applications:</b> Use of suitable equipment to incorporate into top 4" of the soil is required to control below ground pests.  <b>At- Transplant water treatment application:</b> Apply 1.0125 - 0.1 lb ai / A in a water treatment application volume of 10-200 gal/A.
	Fulfill 50WDG (pymetrozine)	<b><u>Foliar</u></b> 2.75 oz / A	Apply when aphids first appear, before populations build to damaging levels. Two applications may be needed to control persistent aphid populations. Thorough foliage coverage is essential. Use minimum of 20 gal / A when applied by ground. <b>Do not</b> apply by air. The addition of a penetrating type spray adjuvant, at the mfg. rate is recommended to provide optimum coverage and penetration. <b>Do not</b> apply more than 2.75 oz / A / application. <b>Do not</b> exceed a total of 5.5 oz / A per crop per season. Allow a minimum of 7 days between applications. 14 days PHI between last application and harvest.
	Lannate 90SP (methomyl)	1/2 lb / A  2.4LV 1 1/2 pt / A	Preharvest interval of 14 days for Air or Fire Cured. 5 days PHI for Flue Cured. 48 hours REI.
	Nuprid, Provado 1.6F (imidacloprid)	2.0-4.0 fl oz / A	<b><u>Foliar.</u></b> 14 day PHI. Minimum interval between applications is 7 days. Maximum amount allowed per season is 22.4 fl oz / A.

## Insect Control In Field Tobacco

Insect	Insecticide*/ Formulation	Rate Per Acre	Remarks
	PennCap-M 2EC (methyl parathion)	2 qt / 25 gal (2.5 Tbsp / gal)	<b>Do not</b> apply within 15 days of harvesting. Avoid contact with plant juices when priming tobacco. 48 hour re-entry period. <b>Do not</b> use screens or nozzles finer than 50 mesh. May be harmful to honey bees during bloom.
<b>Aphids</b> (Cont'd)	Warrior 1CS (lambda-cyhalothrin)	1.92-3.84 fl oz / A	<b>FOR SUPPRESSION ONLY.</b> Apply as required by scouting, usually at intervals of 7 or more days. Timing and frequency of applications are based on reaching economic threshold. Apply with ground or air equipment using sufficient water to obtain full coverage of the foliage. By air, apply in a minimum of 2 gal of water / A. <b>Do not</b> apply within 40 days of harvest. <b>Warrior.</b> <b>Do not</b> apply more than 0.09 lb ai (0.72 pt) / A per year. <b>Karata.</b> <b>Do not</b> apply more than 0.09 lb ai (5.76 fl oz or 0.36 pt of product) / A per year.
	Karate 2.08CS (lambda-cyhalothrin)	0.96-1.92 fl oz / A	
	Assail 30SG (acetamiprid)	1.5-4.0 oz / A	
	70WP	0.6-1.7 oz / A	Apply in a minimum finished spray volume of 5 gal per acre by air or 20 gal per acre by ground. Thorough coverage is important to obtain optimum control. <b>Do not</b> make more than 4 applications per season. <b>Do not</b> apply more than once every 7 days. <b>Do not</b> apply less than 7 days before harvest. <b>Do not</b> exceed a total of 0.3 lb ai (6.8 oz 70WP or 16 oz 30SG) per acre per crop.
<b>Budworms</b>	Supracide 2EC (methidathion)	4 pt / 25 gal (5 Tbsp / gal)	<b>Caution.</b> Plant injury may occur if concentrated in bud with hand sprayer. <b>Do not</b> use after transplanting (until plants are established), after drought or other periods of stress. Preharvest interval of three days.
	Belay 50WDG (clothianidin)	2 oz / A	<b>Foliar.</b> For suppression of budworms and hornworms. <b>Do not</b> apply more than 6.4 oz of Belay 50 WDG per season. <b>Do not</b> apply treatments less than 7 days apart. <b>Do not</b> apply within 14 days of harvest. <b>Do not</b> apply through any type of irrigation system.
	Belt 4SC (flubendiamide)	2.0-3.0 oz / A	<b>Do not</b> apply more than 3 fl oz per acre (0.094 lb ai / A) per 5-day interval. <b>Do not</b> apply more than 12 fl oz per acre (0.375 lb ai / A) per crop season. <b>Do not</b> apply more than 4 times per crop season. Minimum application volume: 10.0 GPA - Ground; 5.0 GPA - aerial. Application should be timed to coincide with early threshold level in a developing larval population. *PHI 14 days. REI 12 hours.
	Orthene 97PE (acephate)	3/4 lb / 25 gal	Apply when economic threshold is reached. <b>Do not</b> apply more than 4 1/8 lb / A (4 lb ai) per season. This includes the use of Orthene in transplant water, plant bed, soil, float bed (green house) and foliar applications. 3 day PHI. 24 hr REI.
	Dipel ( <i>Bacillus thuringiensis</i> )	2XWP	Use sprays and baits by label direction.
		Pinch in bud. (10-25 lb / A of bait)	Mix 1/2-1 lb / 50 lb of cornmeal. Mix thoroughly.

## Insect Control In Field Tobacco

Insect	Insecticide*/ Formulation	Rate Per Acre	Remarks
	Tracer Naturalyte (spinosad)	1.4-2.9 fl oz / A 0.045-0.089 lb ai / A (Treats 90-45 A per gallon)	Make no more than 3 applications per 30 days or 6 applications per crop. Use a minimum of 20 gallons of water per acre to obtain full coverage of foliage, increasing volume and nozzles per row as necessary with crop maturity.
<b>Budworms</b> (Cont'd)	Coragen 1.67SC (rynaXypyr or chlorantraniliprole)	3.5 – 7.5 fl oz / A	Make no more than 4 applications per acre per crop. Minimum interval between treatments is 3 days. Do not use an adjuvant with application of Coragen. Do not apply more than 15.4 fl oz Coragen or 0.2 lb ai of chlorantraniliprole containing products per acre per crop.  1 day PHI. 4 hours REI
	Denim 0.16EC (emamectin benzoate)	8.0-12.0 fl oz / A	Application should be targeted at small (1/4 inch) larvae. At least 2 applications may be needed to control a generation during an extended egg laying period. Apply in a minimum of 20 gal / A. <b>Do not</b> make more than two sequential applications without rotating to another product with a different mode of action. <b>Do not</b> apply more than a total of 36 oz / A on crop per season. Allow a minimum of 5 days between applications. 14 days PHI. <b>Do not</b> allow livestock to graze treated area.
	Warrior 1CS (lambda-cyhalothrin)	1.92-3.84 fl oz / A	<b>SUPPRESSION ONLY.</b> Apply as required by scouting, usually at intervals of 7 or more days. Timing and frequency of applications based on reaching economic threshold. Apply with ground or air equipment using sufficient water to obtain full coverage of the foliage. By air, apply in a minimum of 2 gal of water / A. <b>Do not</b> apply within 40 days of harvest. <b>Warrior.</b> <b>Do not</b> apply more than 0.09 lb ai (0.72 pt) / A per year. <b>Karate.</b> <b>Do not</b> apply more than 0.09 lb ai (5.76 fl oz or 0.36 pt of product) / A per year.
	Karate 2.08CS (lambda-cyhalothrin)	0.96-1.92 fl oz / A	
	Sevin 80SP  XLR Plus	1 1/4-2 1/4 lb / 25 gal (2-3 Tbsp / gal)  1.0-2.0 qt / A	Low rate on plants up to knee high and higher rates on mature plants. Sevin gives only fair control.
	Lannate 90SP (methomyl)  2.4LV	1/2 lb / A.  1 1/2 pt / A (2 Tbsp / gal)	<b>Do not</b> apply within 14 days of harvest for Air or Fire Cured. Preharvest interval of 5 days for Flue Cured. 48 hours REI.
	Assail 30SG (acetamiprid)  70WP	1.5-2.5 oz  1.1 oz	Apply in a minimum finished spray volume of 5 gal per acre by air or 20 gal per acre by ground. Thorough coverage is important to obtain optimum control. <b>Do not</b> make more than 4 applications per season. <b>Do not</b> apply more than once every 7 days. <b>Do not</b> apply less than 7 days before harvest. <b>Do not</b> exceed a total of 0.3 lb ai (6.8 oz 70 WP or 16 oz 30 SG) per acre per crop.

## Insect Control In Field Tobacco

Insect	Insecticide*/ Formulation	Rate Per Acre	Remarks		
Cutworms	Orthene 90PE (acephate)	<b><u>Transplant Water Treatment</u></b>  1 ½ lb (24 oz) (Burley) (24C Registration)  3/4 lb (12 oz) (Dark)	<p><b><u>Transplant Water.</u></b> Provides control of early season cutworms for approximately 3-4 weeks after transplanting. Apply in a minimum of 100 gallons (200 gallons for burley) of transplant waster per acre. Premix in water to form a slurry solution prior to adding to the transplant water tank.</p> <p><b><u>Foliar.</u></b> Apply as a foliar spray for later season insects. Apply in 10 to 50 gallons water per acre with ground equipment or a minimum of 3 gallons per acre by air. 3 day PHI.</p> <p><b><u>All.</u></b> Do not apply more than 4 1/8 lb / A (4 lb ai) per crop cycle. This includes the use of Orthene in transplant water, plant bed, soil, float bed (greenhouse) and foliar applications.</p>		
		<b><u>Foliar</u></b>  1 ½ lb (24 oz) (Burley) (24C Registration)  3/4 lb (12 oz) (Dark)			
		Lorsban Advanced 3.755EW (chlorpyrifos)		2 pt / A	Preplant broadcast spray. Apply 24 to 48 hours before bedding and transplanting using a spray volume of 10 gpa or more. Incorporate immediately after application to a depth of 2 to 4 inches using suitable incorporation equipment. Knock down beds to final shape for transplanting. Use PTO-driven implements that will incorporate Lorsban Advanced to a depth of 4 inches. <b>Do not</b> make more than one application per season. Maximum single application rate is 1 lb a.i. chlorpyrifos per acre.  REI 24 hr.
		Lorsban 4EC (chlorpyrifos)		2 pt / A	Apply as a preplant broadcast spray. Apply 24 to 48 hours before bedding and transplanting using a spray volume of 10 gal / A or more. Incorporate immediately to a depth of 2 to 4 inches.  Before broadcast application into existing beds, knock down beds to final shape for transplanting. Use a PTO-driven implements that will incorporate Lorsban-4E to a depth of 4 inches. 24 hr REI.
		Lorsban 15G (chlorpyrifos)		13.5 lb / A	Use as preplant soil incorporated treatment. Apply one week before transplanting, using equipment that will evenly distribute granules over a treated area. Immediately following application, incorporate granules into the soil to a depth of 2-4 inches using suitable equipment. <b>Do not</b> apply within seven days of transplanting. <b>Do not</b> make more than one application per season. 24 hr REI.
		Warrior 1CS (lambda-cyhalothrin)		1.92-3.84 fl oz / A  0.015-0.03 lb ai / A	Apply as required by scouting, usually at intervals of 7 or more days. Timing and frequency of applications based on reaching economic threshold. Apply with ground or air equipment using sufficient water to obtain full coverage of the foliage. By air, apply in a minimum of 2 gal of water / A.  <b>Do not</b> apply within 40 days of harvest.  <b><u>Warrior.</u></b> Do not apply more than 0.09 lb ai (0.72 pt) / A per year.
Karate 2.08CS (lambda-cyhalothrin)	0.96-1.92 fl oz / A	<b><u>Karate.</u></b> Do not apply more than 0.09 lb ai (5.76 fl oz or 0.36 pt of product) / A per year.			

## Insect Control In Field Tobacco

Insect	Insecticide*/ Formulation	Rate Per Acre	Remarks
Cutworms (Cont'd)	Brigade 2EC (bifenthrin)	<u><b>Transplant Application</b></u> 4.0-6.4 fl oz / A  <u><b>Foliar</b></u> 2.56-6.4 fl oz / A	<u><b>Pre-Transplant Soil Applications.</b></u> Apply 0.0624 - 0.1 lb ai / A in a minimum of 10 gal / A to control soil pests. Use of suitable equipment to incorporate into top 4" of the soil.  <u><b>At-Transplant Water Treatment Application.</b></u> Apply 0.0625 - 0.1 lb ai / A in a water treatment application volume of 10 - 200 gal / A.  <u><b>Foliar.</b></u> Apply 2.56 - 6.4 fl oz / A per foliar application up to and including, layby in a minimum of 10 gal / A. <b>Do not</b> make more than 2 foliar applications per season.  <u><b>All Rates.</b></u> <b>Do not</b> apply more than 0.2 lb ai / A per season. <b>Do not</b> apply later than layby. May be tank mixed with Command, Spartan and other herbicides approved for tobacco use.
	Admire Pro 4.6F (imidacloprid)	<u><b>Seedling Tray Drench</b></u> 0.6-1.2 fl oz / 1000 plants  <u><b>In-Furrow or Transplant-Water</b></u> 0.8-1.2 fl oz / 1000 plants	Uniform broadcast foliar spray to seedlings in trays (tray drench) not more than 7 days prior to transplanting followed immediately by overhead irrigation to wash Admire Pro from foliage into potting media.  In-furrow spray or transplant-water drench during setting.  14 days PHI. Maximum Admire Pro allowed per crop season is 14.0 fl oz / Acre (0.5 lb ai Acre).
Flea Beetles	Admire Pro 4.6F (imidacloprid)	<u><b>Seedling Tray Drench</b></u> 0.5 fl oz / 1000 plants  <u><b>In-Furrow or Transplant-Water</b></u> 0.6 fl oz / 1000 plants	Uniform broadcast foliar spray to seedlings in trays (tray drench) not more than 7 days prior to transplanting followed immediately by overhead irrigation to wash Admire Pro from foliage into potting media.  In-furrow spray or transplant-water drench during setting.  14 days PHI. Maximum Admire Pro allowed per crop season is 14.0 fl oz / Acre (0.5 lb ai Acre).
	Actara 25WG (thiamethoxam)	2.0-3.0 oz / A	Apply before pests reach damaging levels. Apply higher rates for heavy infestations.  <b>Do not</b> exceed a total of 3.0 oz (0.047 lb ai) / A during each growing season. 14 days PHI. Use a minimum of 20 gal of water per acre. <b>Do not</b> use a foliar application of Actara following an in-furrow or soil application of Platinum.

## Insect Control In Field Tobacco

Insect	Insecticide*/ Formulation	Rate Per Acre	Remarks
Flea Beetles (Cont'd)	Belay 16WSG (clothianidin)	<b><u>TPW or TD</u></b> 5-10 oz / A  <b><u>Foliar</u></b> 1.5-2.0 oz / A	Apply to the soil in <b><u>TPW</u></b> or by <b><u>drench to trays</u></b> or flats prior to transplanting. Plants in flats or trays should be watered by overhead irrigation to wash Belay 16 WSG from the foliage into the potting media. Soil application sometimes causes yellowing of foliage present at the time of transplanting. This does not have an impact on growth and yields. <b>Do not</b> apply more than a total of 0.2 lb ai per acre per season.  <b>Do not</b> apply more than 6.4 oz of Belay 50 WDG per acre per season. <b>Do not</b> apply treatments less than 7 days apart. <b>Do not</b> apply within 14 days of harvest. Do not apply Belay 50 WDG through any type of irrigation system.
	Brigade 2EC (bifenthrin)	<b><u>PPI or TPW</u></b> 4.0-6.4 fl oz / A  <b><u>Foliar</u></b> 2.56-6.4 fl oz / A	<b><u>PPI.</u></b> Apply in a minimum of 10 gal / A. Incorporate into top 4" of the soil.  <b><u>TPW.</u></b> Apply in a volume of 10-200 gal / A.  <b><u>Foliar.</u></b> Apply 0.04 - 0.10 lb ai / A per foliar application up to and including layby in a minimum of 10 gal / A. <b>Do not</b> make more than 2 foliar applications per season.  <b><u>All.</u></b> <b>Do not</b> apply more than 0.2 lb ai / A per season. <b>Do not</b> apply later than layby. May be tank mixed with Command, Spartan and other herbicides approved for tobacco use.
	Nuprid, Provado 1.6F (imidacloprid)	4 oz / A	<b><u>Foliar.</u></b> 14 day PHI. Minimum interval between applications is 7 days. Maximum amount allowed per season is 22.4 fl oz / A.
	Sevin 80SP (carbaryl)	1 1/4-2 1/2 lb (2-3 Tbsp / gal)	
	XLR Plus	1.0-2.0 qt / A	
Orthene 97PE (acephate)	<b><u>Transplant Water Treatment</u></b> 1 1/2 lb (24 oz) (Burley) (24C Registration)  3/4 lb (12 oz) (Dark)  <b><u>Foliar</u></b> 1 lb (16 oz) (Burley) (24C Registration)  1/2 lb (8 oz) (Dark)	<b><u>Transplant Water.</u></b> Provides control of early season flea beetles for approximately 3-4 weeks after transplanting. Apply in a minimum of 100 gallons (200 gallons for burley) of transplant water per acre. Premix in water to form a slurry solution prior to adding to the transplant water tank.  <b><u>Foliar.</u></b> Apply as a foliar spray for later season insects. Apply in 10 to 50 gallons water per acre with ground equipment or a minimum of 3 gallons per acre by air. Three day PHI.  <b><u>All.</u></b> <b>Do not</b> apply more than 4 1/8 lb / A (4 lb ai) per crop cycle. This includes the use of Orthene in transplant water, plant bed, soil, float bed (greenhouse) and foliar applications.	

## Insect Control In Field Tobacco

Insect	Insecticide*/ Formulation	Rate Per Acre	Remarks
Flea Beetles (Cont'd)	Platinum 2SC (thiamethoxam)	0.8-1.3 fl oz / 1,000 plants	Apply at transplant using one of the following methods.  <b>Tray treatment.</b> Apply to transplants while still in trays. Thoroughly water transplants. Then apply the chemical evenly to the transplants. Immediately after treatment, spray transplants with enough water to wash the chemical off the foliage and into the soil. Set transplants in the field within two days after treatment. During transplanting, workers handling transplants must wear waterproof gloves. <b>Do not</b> apply Platinum 2SC or 75 SG to float-bed water.  <b>Soil (drench transplants).</b> Mix appropriate amounts of Platinum in water and drench transplants as they are being placed in the ground.  Make only one soil or tray treatment application per season. <b>Do not</b> exceed a total of 8 fl oz (0.125 lb ai) of Platinum 2 SC or 2.67 oz (0.125 lb ai) of 75 SG per acre per growing season.
	75SG	0.27-0.43 oz / 1,000 plants	
	Vydate 2L (oxamyl)	<b>Row Treatment</b> 1 gal in an 18" to 24" band in at least 20 gal water / A (12,000 row feet of tobacco)  <b>Broadcast</b> 1 gal / A in at least 40 gal water / A.	Apply by ground. Thoroughly incorporate 4" to 6" into the soil. <b>Do not</b> transplant tobacco for 48 hours after soil treatment. <b>Do not</b> apply more than 8 pt (1 gal) per acre per season.
	Supracide 2EC (methidathion)	2-3 pt / 25 gal. (2.5-4 Tbsp / gal)	Three day preharvest interval.
	Lannate 90SP (methomyl)	1/4-1/2 lb / A  2.4L 3/4-1 1/2 pt / A	Preharvest interval of 14 days for Air or Fire Cured. 5 days PHI for Flue Cured. 48 hours REI.
	Warrior 1CS (lambda-cyhalothrin)	1.92-3.84 fl oz / A	Apply as required by scouting, usually at intervals of 7 or more days. Timing and frequency of applications based on reaching economic threshold. Apply with ground or air equipment using sufficient water to obtain full coverage of the foliage. By air, apply in a minimum of 2 gal of water / A.
	Karate 2.08CS (lambda-cyhalothrin)	0.96-1.92 fl oz / A	<b>Do not</b> apply within 40 days of harvest.  <b>Warrior.</b> <b>Do not</b> apply more than 0.09 lb ai (0.72 pt) / A per year.  <b>Karate.</b> <b>Do not</b> apply more than 0.09 lb ai (5.76 fl oz or 0.36 pt of product) / A per year.
Lorsban Advanced 3.75SEW (chlorpyrifos)	2 pt / A	Preplant broadcast spray. Apply 24 to 48 hours before bedding and transplanting using a spray volume of 10 gpa or more. Incorporate immediately after application to a depth of 2 to 4 inches using suitable incorporation equipment. Knock down beds to final shape for transplanting. Use PTO-driven implements that will incorporate Lorsban Advanced to a depth of 4 inches. <b>Do not</b> make more than one application per season. Maximum single application rate is 1 lb a.i. chlorpyrifos per acre.  REI 24 hr.	

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Flea Beetles (Cont'd)	Lorsban 15G (chlorpyrifos)	13.5 lb / A	Use as pre-plant soil incorporated treatment. Apply one week before transplanting, using equipment that will evenly distribute granules over a treated area. Immediately following application, incorporate granules into the soil to a depth of 2-4 inches using suitable equipment. <b>Do not</b> apply within seven days of transplanting. <b>Do not</b> make more than one application per season. 24 hr REI
		4E 2 pt / A	Apply as a preplant broadcast spray. Apply 24 to 48 hours before bedding and transplanting using a spray volume of 10 gal / A or more. Incorporate immediately to a depth of 2 to 4 inches.  Before broadcast application into existing beds, knock down beds to final shape for transplanting. Use a PTO-driven implements that will incorporate Lorsban-4E to a depth of 4 inches. 24hr REI.
	Provado 1.6F (imidacloprid)	4.0 fl oz / A	<b>Foliar.</b> 14 day PHI. 7 days minimum interval between applications. 22.4 oz / A maximum allowed per season.
	Brigade 2EC (bifenthrin)	2.56-6.4 fl oz / A	<b>Foliar.</b> Apply 0.04 - 0.10 lb ai / A per foliar application up to and including layby in a minimum of 10 gal / A. <b>Do not</b> make more than 2 foliar applications per season. <b>Do not</b> apply more than 0.2 lb ai / A per season. <b>Do not</b> apply later than layby. May be tank mixed with Command, Spartan and other herbicides approved for tobacco use.
	Orthene 97PE (acephate)	1/4-1/2 lb / 25 gal (4-8 oz )	Spray at threshold level. Preharvest interval of three days. Apply in 10 to 50 gal water per acre with ground equipment or a minimum of 3 gal per acre by air.
	Warrior 1CS (lambda-cyhalothrin)	1.92-3.84 fl oz / A	Apply as required by scouting, usually at intervals of 7 or more days. Timing and frequency of applications based on reaching economic threshold. Apply with ground or air equipment using sufficient water to obtain full coverage of the foliage. By air, apply in a minimum of 2 gal of water / A.
Karate 2.08CS (lambda-cyhalothrin)	0.96-1.92 fl oz / A	<b>Do not</b> apply within 40 days of harvest.  <b>Warrior.</b> <b>Do not</b> apply more than 0.09 lb ai (0.72 pt) / A per year.  <b>Karate.</b> <b>Do not</b> apply more than 0.09 lb ai (5.76 fl oz or 0.36 pt of product) / A per year.	

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Insect	Insecticide*/ Formulation	Rate Per Acre	Remarks
Japanese Beetles	Orthene 97PE (acephate)	3/4 lb (12 oz)	Apply in 10 to 50 gal water per acre with ground equipment or a minimum of 3 gal per acre by air. <b>Do not</b> apply more than 4 1/8 lb / A (4 lb ai) per season. 3 day PHI.
	Sevin 80SP (carbaryl)	1 1/4-2 1/2 lb / 25 gal (2-3 Tbsp / gal)  1.0-2.0 qt / A	Cover entire tobacco plant. For grazing purposes, read time limits on label for pastures.
	Platinum 2SC (thiamethoxam)	0.8-1.3 fl oz / 1,000 plants	Apply at transplant using one of the following methods.  <b>Tray treatment.</b> Apply to transplants while still in trays. Thoroughly water transplants. Then apply the chemical evenly to the transplants. Immediately after treatment, spray transplants with enough water to wash the chemical off the foliage and into the soil. Set transplants in the field within two days after treatment. During transplanting, workers handling transplants must wear waterproof gloves. <b>Do not</b> apply Platinum 2 SC or 75 SG to float-bed water.  <b>Soil (drench transplants).</b> Mix appropriate amounts of Platinum in water and drench transplants as they are being placed in the ground.  Make only one soil or tray treatment application per season. <b>Do not</b> exceed a total of 8 fl oz (0.125 lb ai) of Platinum 2 SC or 2.67 oz (0.125 lb ai) of 75 SG per acre during the growing season.
	75SG	0.27-0.43 oz / 1,000 plants	
	Warrior 1CS (lambda-cyhalothrin)	1.92-3.84 fl oz / A	Apply as required by scouting, usually at intervals of 7 or more days. Timing and frequency of applications based on reaching economic threshold. Apply with ground or air equipment using sufficient water to obtain full coverage of the foliage. By air, apply in a minimum of 2 gal of water / A.
	Karate 2.08CS (lambda-cyhalothrin)	0.96-1.92 fl oz / A	<b>Do not</b> apply within 40 days of harvest.  <b>Warrior.</b> <b>Do not</b> apply more than 0.09 lb ai (0.72 pt) / A per year.  <b>Karate.</b> <b>Do not</b> apply more than 0.09 lb ai (5.76 fl oz or 0.36 pt of product) / A per year.
	Actara 25WG (thiamethoxam)	2.0-3.0 oz / A	Apply before pests reach damaging levels. Apply higher rates for heavy infestations. <b>Do not</b> exceed a total of 3.0 oz (0.047 lb ai) / A during each growing season. 14 days PHI. Use a minimum of 20 gal of water per acre. <b>Do not</b> use a foliar application of Actara following an in-furrow or soil application of Platinum.
	Provado 1.6F (imidacloprid)	4.0 fl oz / A	<b>Foliar.</b> 14 day PHI. 7 days minimum interval between applications. 22.4 oz / A maximum allowed per season.

## Insect Control In Field Tobacco

Insect	Insecticide*/ Formulation	Rate Per Acre	Remarks
<b>Hornworms</b>	Supracide 2EC (methidathion)	2-3 pt / 25 gal  (2.5-4 Tbsp / gal)	Three day preharvest interval.
	Orthene 97PE (acephate)	½ lb (8 oz )	Apply in 10 to 50 gal water per acre with ground equipment or a minimum of 3 gal per acre by air. <b>Do not</b> apply more than 4 1/8 lb / A (4 lb ai) per season. Three day PHI.
	<i>Bacillus Thuringiensis</i>	Use sprays and baits by label directions.	
	Belay 50WDG (clothianidin)	2.0 oz /A	<b>Foliar.</b> For suppression of budworms and hornworms. <b>Do not</b> apply more than 6.4 oz of Belay 50 WDG per season. <b>Do not</b> apply treatments less than 7 days apart. <b>Do not</b> apply within 14 days of harvest. <b>Do not</b> apply through any type of irritation system.
	Belt 4SC (flubendiamide)	2.0-3.0 oz / A	<b>Do not</b> apply more than 3 fl oz per acre (0.094 lb ai / A) per 5-day interval.  <b>Do not</b> apply more than 12 fl oz per acre (0.375 lb ai / A) per crop season.  <b>Do not</b> apply more than 4 times per crop season.  Minimum application volume: 10.0 GPA - Ground; 5.0 GPA – aerial.  Application should be timed to coincide with early threshold level in a developing larval population. PHI 14 days. REI 12 hours.
	Tracer Naturalyte (spinosad)	1.4-2.9 fl oz / A  (Treats 90-45 A per gallon)	Make no more than 3 applications per 30 days or 6 applications per crop. Use a minimum of 20 gallons of water per acre to obtain full coverage of foliage, increasing volume and nozzles per row as necessary with crop maturity.
	Denim 0.16EC (emamectin benzoate)	8.0-12.0 fl oz / A	Application should be targeted at small (1/4 inch) larvae. At least 2 applications may be needed to control a generation during an extended egg laying period. Apply in a minimum of 20 gal / A. <b>Do not</b> make more than two sequential applications without rotating to another product with a different mode of action. <b>Do not</b> apply more than a total of 36 oz / A on crop per season. Allow a minimum of 5 days between applications. 14 days PHI. <b>Do not</b> allow livestock to graze treated area.
	Coragen 1.67SC (rynaXypyr or chlorantraniliprole)	3.5 – 7.5 fl oz / A	Make no more than 4 applications per acre per crop. Minimum interval between treatments is 3 days. Do not use an adjuvant with application of Coragen. Do not apply more than 15.4 fl oz Coragen or 0.2 lb ai of chlorantraniliprole containing products per acre per crop.  1 day PHI. 4 hours REI

## Insect Control In Field Tobacco

Insect	Insecticide*/ Formulation	Rate Per Acre	Remarks
Hornworms (Cont'd.)	Warrior 1CS (lambda-cyhalothrin)	1.92-3.84 fl oz / A	Apply as required by scouting, usually at intervals of 7 or more days. Timing and frequency of applications based on reaching economic threshold. Apply with ground or air equipment using sufficient water to obtain full coverage of the foliage. By air, apply in a minimum of 2 gal of water / A.
	Karate 2.08CS (lambda-cyhalothrin)	0.96-1.92 fl oz / A	<b>Do not</b> apply within 40 days of harvest.  <b>Warrior.</b> <b>Do not</b> apply more than 0.09 lb ai (0.72 pt) / A per year.  <b>Karate.</b> <b>Do not</b> apply more than 0.09 lb ai (5.76 fl oz or 0.36 pt of product) / A per year.
	Lannate 90SP (methomyl)  2.4LV	1/4-1/2 lb / A  3/4-1 1/2 pt / A	Preharvest interval of 14 days for Air or Fire Cured. 5 days PHI for Flue Cured. 48 hours REI.
Stink Bugs	Orthene 97PE (acephate)	1/2-3/4 lb (8-12 oz)	Apply in 10 to 50 gallons of water per acre with ground equipment or a minimum of 3 gal per acre by air. Three day PHI.
	Warrior 1CS (lambda-cyhalothrin)	1.92-3.84 fl oz / A	Apply as required by scouting, usually at intervals of 7 or more days. Timing and frequency of applications based on reaching economic threshold. Apply with ground or air equipment using sufficient water to obtain full coverage of the foliage. By air, apply in a minimum of 2 gal of water / A.
	Karate 2.08CS (lambda-cyhalothrin)	0.96-1.92 fl oz / A	<b>Do not</b> apply within 40 days of harvest.  <b>Warrior.</b> <b>Do not</b> apply more than 0.09 lb ai (0.72 pt) / A per year.  <b>Karate.</b> <b>Do not</b> apply more than 0.09 lb ai (5.76 fl oz or 0.36 pt of product) / A per year.
	Brigade 2EC (bifenthrin)	2.56-6.4 fl oz / A	<b>Foliar.</b> Apply 0.04 - 0.10 lb ai / A per foliar application up to and including layby in a minimum of 10 gal / A. <b>Do not</b> make more than 2 foliar applications per season. <b>Do not</b> apply more than 0.2 lb ai / A per season. <b>Do not</b> apply later than layby. May be tank mixed with Command, Spartan and other herbicides approved for tobacco use.

## Insect Control In Field Tobacco

Insect	Insecticide*/ Formulation	Rate Per Acre	Remarks
<b>Vegetable Weevil</b>	Orthene 97PE (acephate)	½-¾ lb  (8-12 oz)	Apply in 10 to 50 gal water per acre with ground equipment or a minimum of 3 gal per acre by air. 3 day PHI.
	Warrior 1CS (lambda-cyhalothrin)	1.92-3.84 fl oz / A	Apply as required by scouting, usually at intervals of 7 or more days. Timing and frequency of applications based on reaching economic threshold. Apply with ground or air equipment using sufficient water to obtain full coverage of the foliage. By air, apply in a minimum of 2 gal of water / A.  <b>Do not</b> apply within 40 days of harvest.  <b>Warrior.</b> <b>Do not</b> apply more than 0.09 lb ai (0.72 pt) / A per year.  <b>Karate.</b> <b>Do not</b> apply more than 0.09 lb ai (5.76 fl oz or 0.36 pt of product) / A per year.
	Karate 2.08CS (lambda-cyhalothrin)	0.96-1.92 fl oz / A	
<b>Thrips</b>	Platinum 2SC (thiamethoxam)	0.8 fl oz / 1,000 plants  (Suppression)	Apply at transplant using one of the following methods.  <b>Tray treatment.</b> Apply to transplants while still in trays. Thoroughly water transplants. Then apply the chemical evenly to the transplants. Immediately after treatment, spray transplants with enough water to wash the chemical off the foliage and into the soil. Set transplants in the field within two days after treatment. During transplanting, workers handling transplants must wear waterproof gloves. <b>Do not</b> apply Platinum 2 SC or 75 SG to float-bed water.  <b>Soil (drench transplants).</b> Mix appropriate amounts of Platinum in water and drench transplants as they are being placed in the ground.  Make only one soil or tray treatment application per season. <b>Do not</b> exceed a total of 8 fl oz (0.125 lb ai) of Platinum 2 SC or 2.67 oz (0.125 lb ai) 75 SG per acre per growing season.
		1.3 oz / 1000 plants	
		0.27 oz / 1000 plants  (Suppression)	
		0.43 oz / 1000 plants	
	Brigade 2EC (bifenthrin)	2.56-6.4 fl oz / A	<b>Foliar.</b> Apply 0.04 - 0.10 lb ai / A per foliar application up to and including layby in a minimum of 10 gal/A. <b>Do not</b> make more than 2 foliar applications per season. <b>Do not</b> apply more than 0.2 lb ai / A per season. May be mixed with Command, Spartan and other herbicides approved for tobacco use.
	Warrior 1CS (lambda-cyhalothrin)	1.92-3.84 fl oz / A	<b>SUPPRESSION ONLY.</b> Apply as required by scouting, usually at intervals of 7 or more days. Timing and frequency of applications based on reaching economic threshold. Apply with ground or air equipment using sufficient water to obtain full coverage of the foliage. By air, apply in a minimum of 2 gal. of water / A.  <b>Do not</b> apply within 40 days of harvest.
	Karate 2.08CS (lambda-cyhalothrin)	0.96-1.92 fl oz / A	<b>Warrior.</b> <b>Do not</b> apply more than 0.09 lb ai (0.72 pt) / A per year.  <b>Karate.</b> <b>Do not</b> apply more than 0.09 lb ai (5.76 fl oz or 0.36 pt of product) / A per year.

The spoon dosages indicate the amount of insecticide to add to each gallon of spray water when you are using 25 gallons of water per acre. If, for example, 50 gallons of water are used per acre, use only one-half the shown spoon dosage in each gallon of water. If only 12.5 gallons of water per acre are used, use double the given spoon dosage in each gallon. **Do not** apply insecticides in heat of day or overdose. Keep spray nozzle 8-10" from bud. Use the smaller given dosages for plants up to 3 feet and larger dosages for larger plants. Plow down stubble after harvest to reduce next year's insects.

### Key to Abbreviations

EC = Emulsifiable	L = Liquid Concentrate
D = Dust	LV = Low Volume
D = Dust	WP= Wettable Powder
F = Flowable	CS = Capsulated Suspension
G = Granules	SP = Soluble powder
PE = Water Soluble Pellet	SC = Soluble Concentrate
WDG = Water-dispersible granules	

\* Caution: All insecticides are toxic and should be handled with great care and used in accordance with label recommendations. By following label directions, you will be able to protect yourself, the environment and prevent groundwater contamination.

### Tobacco Insect Economic Threshold Levels \*

**Tobacco Budworms**      5 infested plants/50 plants (10%)

#### **Tobacco Hornworms**

1" length	5 worms/50 plants (10%)
Parasitized	25 worms/50 plants (50%)

#### **Tobacco Flea Beetles**

Young transplants	Average 3 beetles/plant
Older transplants	Average 10 beetles/plant

#### **Tobacco Aphid**

Before Topping: 10% of plants have 50 aphids on any upper leaf.

After Topping: 20% or more of plants are infested.

\* Economic threshold is the population level of an insect in which it is economically feasible to apply a chemical control.

INSECTICIDE	Restricted Entry Intervals (Hours)	Preharvest Interval (Days)
<b>Foliar treatments</b>		
Acephate (Orthene)	24	3
Acetamiprid (Assail)	12	7
<i>Bacillus thuringiensis</i> (Agree, Biobit, Condor, Dipel, Javelin, MVP)	4	0
Bifenthrin (Capture LFR, Brigade)	12	Layby
Carbaryl (Sevin)	12	0
Chlorantraniliprole (Coragen)	4	1
Clothianidin (Belay)	12	14
Emamectin benzoate (Denim)	48	14
Flubendiamide (Belt)	12	14
Lambda-cyhalothrin (Warrior, Karate)	24	40
Methidathion (Supracide)	4	3
Methomyl (Lannate)	48	3
Imidacloprid (Provado, Nuprid)	48	7
Pymetrozine (Fulfill)	12	14
Spinosad (Tracer)	24	5
Thiamethoxam (Actara)	12	14
<b>Soil Treatments</b>		
Aldicarb (Temik) (Check label for reentry restrictions after first rainfall or irrigation)	48	Apply before transplanting
Carbofuran (Furdan)	48	“
Chlorpyrifos (Lorsban)	24	”
Ethoprop (Mocap)	48	“
Fenamiphos (Nemacur)	48	”
Fonofos (Dyfonate)	48	“
Metaldehyde (Deadline Bullets)	12	”
Oxamyl (Vydate)	48	“
<b>TPW</b>		
Acephate (Orthene)	24	
Bifenthrin (Capture)	12	
Clothianidin (Belay)	12	
<b>Tray &amp; Soil (TPW) Treatments</b>		
Clothianidin (Belay)	12	
Bifenthrin (Capture)	12	
Imidacloprid (Admire)	12	
Thiamethoxam (Platinum)	12	