

# Crops - Commercial

## Rice

The rice water weevil, stem borer complex, and rice stink bug are the primary economic pests of rice in Louisiana. Armyworms, colaspis, rice leaf miner, South American rice miner, and rice seed midge, are occasional pests which can reduce yields. Aphids, grasshoppers, chinch bugs, and thrips are sporadic pests for which no controls are consistently recommended.

Emergence	3-leaf	Tillering	Panicle initiation	Heading	Grain development
Rice seed midge (water seeded)					
Colaspis	Colaspis				
South American rice miner	South American rice miner				
	Rice leaf miner	Rice leaf miner			
Rice water weevil (after flooding)					
		Stem borers	Stem borers	Stem borers	
				Rice stink bug	Rice stink bug

### Cultural Controls:

**Early planting is critical to reducing impacts of many pest insects** including rice water weevils, stem borers, armyworms, and South American rice miner. Delaying establishment of permanent flood can reduce yield losses from rice water weevil by allowing plants to establish a good root system before weevil larval infestations occur. Draining fields and drying out soil after flood can kill rice water weevil larvae. This method is only effective if larvae are feeding on roots and complete drying is achieved. Water-seeded rice is highly susceptible to rice water weevil as well as rice seed midge. Removal or reducing the cutting height of rice stubble can decrease over-wintering stem borer populations. Early flooding can reduce impacts of colaspis. Flooding or flushing can be used to control armyworm infestations in young rice. Reducing the water depth may help control rice leaf miner infestations.

Rice					
Insect	Insecticide <sup>1</sup>	Active Ingredient <sup>2</sup>	Application Rate	Pre-harvest Interval	Comments
Rice water weevil (adults)	Warrior II <sup>3</sup>	Lambda-cyhalothrin	0.025 - 0.04 lbs A.I./acre (1.6 - 2.56 fl oz/acre)	21 days	Check 10 locations every 3-4 days. Treat when adults are present or fresh feeding scars are observed and when conditions are favorable for egg-laying (i.e. water is present or will be present soon).  Scout again beginning 5-7 days after application. More than one application may be necessary.
	Mustang Maxx <sup>4</sup>	Zeta-cypermethrin	0.020 - 0.025 lbs A.I./acre (3.2 - 4.0 fl oz/acre)	14 days	
	Prolex/Proaxis <sup>5</sup>	Gamma-cyhalothrin	0.0125-0.02 lbs A.I./acre (1.28 - 2.05 fl oz/acre)	21 days	
	Declare <sup>6</sup>	Gamma-cyhalothrin	0.0125 - 0.02 lbs A.I./acre (1.28 - 2.05 fl oz/acre)	21 days	

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<b>Rice</b>					
<b>Insect</b>	<b>Insecticide<sup>1</sup></b>	<b>Active Ingredient<sup>2</sup></b>	<b>Application Rate</b>	<b>Pre-harvest Interval</b>	<b>Comments</b>
	Fastac EC <sup>7</sup>	Alpha-cypermethrin	0.020 - 0.025 lbs A.I./acre (3.2- 3.8 fl oz/acre)	14 days	
	Mustang EW <sup>4</sup>	Zeta-cypermethrin	0.04 - 0.05 lbs A.I./acre (3.4 – 4.3 fl oz/acre)	14 days	
	Trebon 3G	Etofenprox	6-9 pounds A.I./acre	60 days	
<b>Rice water weevil (adults) cont.</b>	Belay <sup>8</sup>	Clothianidin	0.075 pound A.I./acre (4.5 fluid ounce/acre)	21	Applications made > 10 days after the establishment of the permanent flood may not be effective as most larvae are already established in the roots.
<b>Rice water weevil seed treatments</b>	Dermacor X-100 seed treatment <sup>9</sup>	Chlorantranil-iprole	Varies by seeding rate (1.5 fl oz/acre)		Dermacor seed treatment is applied to dry seed which may then be used for drill-, dry broadcast-, or water-seeding.
	Fortenza <sup>9</sup>	Cyantraniliprole	3.47 fl oz/100 lb. seed		Dry-seeded rice only.
	NipsitInside <sup>9</sup>	Clothianidin	1.92 fl oz/100 lb. seed (seed treatment)		CruiserMaxx and NipsitInside are for use in dry-seeded rice only.
	CruiserMaxx <sup>9</sup>	Thiamethoxam	7 fluid oz./100 lb. seed (seed treatment)		
<b>Rice water weevil - eggs<sup>9</sup></b>	Dimilin 2L <sup>10</sup>	Diflubenzuron	12 - 16 fluid oz. (drill-seeded, dry-seeded or water-seeded, delayed flood rice)  8 fluid ounce + 8 fluid ounce (water seeded, pinpoint flood, or continuous flood rice)	21 days	A flood is required. Do not apply if flooding is in progress.
<b>Stem borers (sugarcane borer, Mexican rice borer, and rice stalk borer)</b>	Warrior II <sup>3</sup>	Lambda-cyhalothrin	0.025 - 0.04 lbs A.I./acre (1.6 - 2.56 fl oz/acre)	21 days	Start scouting at panicle differentiation and early boot stage. Look for early signs of stem borer presence which include orange-tan discoloration around the junction of the leaf-sheath and the leaf blade. This is caused by feeding of young larvae on the inside surface of the leaf sheath. Make application before larvae enter the stalk.
	Declare <sup>6</sup>	Gamma-cyhalothrin	0.0125 - 0.02 lbs A.I./acre (1.28 - 2.05 fl oz/acre)	21 days	
	Prolex/Proaxis <sup>5</sup>	Gamma-cyhalothrin	0.0125-0.02 lbs A.I./acre (1.28 - 2.05 fl oz/acre)	21 days	
	Dermacor X-100 seed treatment <sup>9</sup>	Chlorantranil-iprole	Varies by seeding rate (1.5 fl oz/acre)	NA	
<b>Rice stink bug</b>	Warrior II <sup>3</sup>	Lambda-cyhalothrin	0.025 - 0.04 lbs A.I./acre (1.6 - 2.56 fl oz/acre)	21 days	Scout in the morning for best results. Treat when there are 30 stink bugs per 100 sweeps during first 2 weeks of heading. Treat when there are 100 stink

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<b>Insect</b>	<b>Insecticide<sup>1</sup></b>	<b>Active Ingredient<sup>2</sup></b>	<b>Application Rate</b>	<b>Pre-harvest Interval</b>	<b>Comments</b>
					bugs per 100 sweeps until 2 weeks before harvest.
	Mustang Maxx <sup>4</sup>	Zeta-cypermethrin	0.020 - 0.025 lbs A.I./acre (3.2 - 4.0 fl oz/acre)	21 days	
	Prolex/Proaxis <sup>5</sup>	Gamma-cyhalothrin	0.0125-0.02 lbs A.I./acre (1.28 - 2.05 fl oz/acre)	21 days	
	Declare <sup>6</sup>	Gamma-cyhalothrin	0.0125 - 0.02 lbs A.I./acre (1.28 - 2.05 fl oz/acre)	14 days	
	Fastac EC <sup>7</sup>	Alpha-cypermethrin	0.020 - 0.025 lbs A.I./acre (3.2- 3.8 fl oz/acre)	14 days	
	Sevin 80S <sup>11</sup>	Carbaryl	1.25 - 1 $\frac{7}{8}$ lbs/acre	14 days	
	Sevin 4F <sup>11</sup>	Carbaryl	1.0 - 1.5 quarts/acre	14 days	
	Tenchu 20SG <sup>12</sup>	Dinotefuran	0.094 - 0.131 lbs A.I./acre (7.5 - 10.5 ounce/acre)	7 days	
<b>Rice stink bug (cont.)</b>	Malathion 57% EC <sup>13</sup>	Malathion	1.0 to 1.5 Pt/A	21 days	
<b>Army-worms</b>	Warrior II <sup>3</sup>	Lambda-cyhalothrin	0.025 - 0.04 lbs A.I./acre (1.6 - 2.56 fl oz/acre)	21 days	<p>Treat when there is one armyworm per two plants; better results obtained when larvae are small.</p> <p>Flooding is effective for armyworm control if plants are sufficiently develop.</p>
	Mustang Maxx <sup>4</sup>	Zeta-cypermethrin	0.020 - 0.025 lbs A.I./acre (3.2 - 4.0 fl oz/acre)	21 days	
	Prolex/Proaxis <sup>5</sup>	Gamma-cyhalothrin	0.0125-0.02 lbs A.I./acre (1.28 - 2.05 fl oz/acre)	21 days	
	Declare <sup>6</sup>	Gamma-cyhalothrin	0.0125 - 0.02 lbs A.I./acre (1.28 - 2.05 fl oz/acre)	14 days	
	Fastac EC <sup>7</sup>	Alpha-cypermethrin	0.020 - 0.025 lbs A.I./acre (3.2- 3.8 fl oz/acre)	14 days	
	Sevin 80S <sup>11</sup>	Carbaryl	1.25 - 1 $\frac{7}{8}$ pound/acre	14 days	
	Sevin 4F <sup>11</sup>	Carbaryl	1.0 - 1.5 quarts/acre	14 days	
<b>Colaspis</b>	NipsitInside <sup>9</sup>	Clothianidin	1.92 fl oz/100 lb. seed (seed treatment)	NA	CruiserMaxx and NipsitInside are for use in dry-seeded rice only.
	CruiserMaxx <sup>9</sup>	Thiamethoxam	7 fluid oz./100 lb. seed (seed treatment)	NA	
<b>Thrips</b>	NipsitInside <sup>9</sup>	Clothianidin	1.92 fl oz/100 lb. seed (seed treatment)	NA	CruiserMaxx and NipsitInside are for use in dry-seeded rice only.
	CruiserMaxx <sup>9</sup>	Thiamethoxam	7 fluid oz./100 lb. seed (seed treatment)	NA	
<b>Chinch bugs</b>	Warrior II <sup>3</sup>	Lambda-cyhalothrin	0.025 - 0.04 lbs A.I./acre (1.6 - 2.56 fl oz/acre)	21 days	For foliar sprays: flood fields first to move chinch bugs up onto plants and increase exposure.
	Mustang Maxx <sup>4</sup>	Zeta-cypermethrin	0.020 - 0.025 lbs A.I./acre (3.2 - 4.0 fl oz/acre)	21 days	
	Prolex/Proaxis <sup>5</sup>	Gamma-cyhalothrin	0.0125-0.02 lbs A.I./acre (1.28 - 2.05 fl oz/acre)	21 days	
	Declare <sup>6</sup>	Gamma-cyhalothrin	0.0125 - 0.02 lbs A.I./acre (1.28 - 2.05 fl oz/acre)	14 days	
	Fastac EC <sup>7</sup>	Alpha-cypermethrin	0.020 - 0.025 lbs A.I./acre (3.2- 3.8 fl oz/acre)	14 days	
	Sevin 80S <sup>11</sup>	Carbaryl	1.25 - 1 $\frac{7}{8}$ pound/acre	14 days	
	Sevin 4F <sup>11</sup>	Carbaryl	1.0 - 1.5 quarts/acre	14 days	

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Insect	Insecticide <sup>1</sup>	Active Ingredient <sup>2</sup>	Application Rate	Pre-harvest Interval	Comments
	NipsitInside <sup>9</sup>	Clothianidin	1.92 fl oz/100 lb. seed (seed treatment)	NA	CruiserMaxx and NipsitInside are for dry-seeded rice only.
	CruiserMaxx <sup>9</sup>	Thiamethoxam	7 fluid oz./100 lb. seed (seed treatment)	NA	
<b>Grass-hoppers</b>	Warrior II <sup>3</sup>	Lambda-cyhalothrin	0.025 - 0.04 lbs A.I./acre (1.6 - 2.56 fl oz/acre)	21 days	Use higher rate if most grasshoppers are large in size.
	Mustang Maxx <sup>4</sup>	Zeta-cypermethrin	0.020 - 0.025 lbs A.I./acre (3.2 - 4.0 fl oz/acre)	21 days	
	Prolex/Proaxis <sup>5</sup>	Gamma-cyhalothrin	0.0125-0.02 lbs A.I./acre (1.28 - 2.05 fl oz/acre)	14 days	
	Fastac EC <sup>7</sup>	Alpha-cypermethrin	0.020 - 0.025 lbs A.I./acre (3.2- 3.8 fl oz/acre)	14 days	
<b>Rice leaf miner</b>	Malathion 57% EC <sup>13</sup>	Malathion	1.0 to 1.5 Pt/A	21 days	Apply when eggs and larvae are abundant on seedling rice and/or when stands are being reduced to less than 15 plants/ft <sup>2</sup> .
<b>South American rice miner</b>	None	Avoid planting late, particularly in areas known to be prone to severe infestation such as coastal areas in Cameron, Jeff Davis and Vermilion Parishes. Seed treatments applied for rice water weevil may provide some suppression of rice miners.			
<b>Rice seed midge</b>	Warrior II <sup>3</sup>	Lambda-cyhalothrin	0.025 - 0.04 lbs A.I./acre (1.6 - 2.56 fl oz/acre)	21 days	Seed midge is only a pest of water-seeded rice. Check
	Declare <sup>6</sup>	Gamma-cyhalothrin	0.0125 - 0.02 lbs A.I./acre (1.28 - 2.05 fl oz/acre)	21 days	fields for damage during first week after planting. If
	Prolex/Proaxis <sup>5</sup>	Gamma-cyhalothrin	0.0125-0.02 lbs A.I./acre (1.28 - 2.05 fl oz/acre)	21 days	stands are being reduced significantly (less than 15 plants/ft <sup>2</sup> , consider replanting.

<sup>1</sup>Insecticides **are not** listed in order of effectiveness and/or preference.

<sup>2</sup>Trade names given are subject to change and many active ingredients are available under several generic formulations.

<sup>3</sup>**Warrior II** Do not use treated rice fields for the aquaculture of edible fish and crustaceans. Do not release floodwater within 7 days of application. Do not apply more than 0.12 pound A.I./acre/season. Do not apply as ultra-low volume (ULV) spray. Warrior II can be safely used when propanil products are being used for weed control. Do not exceed 0.12 pound A.I./acre when Karate is used in addition to Prolex or Proaxis in a single season.

<sup>4</sup>**Mustang Maxx and Mustang EW:** Do not use treated rice fields for the aquaculture of edible fish and crustaceans. Do not release floodwater within 7 days of application. Do not make applications less than 7 days apart. Do not apply more than 0.10 pound A.I. (1.0 pints)/acre/season. Do not apply as ULV spray.

<sup>5</sup>**Prolex/Proaxis:** Do not use treated rice fields for the aquaculture of edible fish and crustaceans. Do not release floodwater within 7 days of application. It can be used safely when propanil products are being used for weed control. Do not exceed 0.06 lbs A.I./acre when Prolex or Proaxis (either product alone) are used in a single season. Do not exceed 0.12 pound A.I./acre when Prolex or Proaxis is used in addition to Karate in a single season.

<sup>6</sup>**Declare:** Do not release floodwater within 7 days of application. Do not use treated fields for the aquaculture of edible fish and crustacean. Do not apply more than 0.06 lbs A.I./acre per season. Do not apply more than 0.04 lbs A.I./acre within 28 days of harvest or 0.02 lbs AI within 21 days of harvest.

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<sup>7</sup>**Fastac EC:** Do not make applications less than 7 days apart. Do not release floodwater within 7 days of application. A maximum of 0.075 pound of active ingredient may be applied per year per acre. Do not use treated rice for the aquaculture of edible fish and crustacea.

<sup>8</sup>**Belay:** Do not apply more than 0.075 pound ai/A as a foliar per year. Do not apply Belay after a NipsitInside seed treatment. Not to be used on rice crops that contain or support crawfish or any form of aquaculture operation. Do not apply after a third tiller has initiated on rice plants.

<sup>9</sup>Insecticidal seed treatments must be applied to dry seed by certified seed treaters only.

<sup>10</sup>**Dimilin 2L:** Do not use treated rice fields for the aquaculture of edible fish and crustaceans. Use at least 5 gallons total volume per acre. Do not release floodwater within 14 days of application.

<sup>11</sup>**Sevin (carbaryl):** May kill shrimp, crabs and crayfish. Do not use Sevin within 15 days before or after application of propanil; up to 2 applications per crop but not more often than once every 7 days.

<sup>12</sup>**Tenchu:** Do not make more than two applications with a minimum of 7 days between applications. Do not apply more than 1.34 pounds total per acre per year. Do not use flood water from treated fields for irrigation or food/feed crops. Do not use if rice fields are used for fish or crustacean farming. Do not apply to rice fields during pollen shedding when bees may be present.

<sup>13</sup>**Malathion 57% EC:** Do not use malathion within 15 days of applying propanil. NOTE FOR AQUATIC USES (rice); Broadcast use only over intermittently flooded areas. Application may not be made around bodies of water where fish or shellfish are grown and/or harvested.

**WARNING:** Always read the label for additional information. Re-entry times for workers entering treated fields should be strictly observed. Be sure to check the label for this information.

<b>Rice/Crawfish Rotation Fields</b>				
<b>Insect</b>	<b>Insecticide</b>	<b>Application Rate</b>	<b>Pre-Harvest Interval</b>	<b>Comments</b>
<b>Armyworms</b>	B.t. ( <i>Bacillus thuringiensis</i> ) <sup>1</sup>	Follow label directions	0	Treat when there is one armyworm per 2 plants. Flooding is effective for armyworm control if plants are sufficiently developed.

<b>Rice leaf miners</b>	Miner infestations tend to be more severe in deep water.
<b>South American rice miner</b>	Avoid planting late, particularly in areas known to be prone to severe infestation, such as those in coastal areas in Cameron, Jeff Davis and Vermilion parishes.
<b>Rice seed midges</b>	Water management: Check fields for damage during first week after planting. If stands are being reduced significantly (less than 15 plants per square feet), drain and replant if necessary.
<b>Stem Borers</b>	Plant as early as reasonable.
<b>Rice stink bugs</b>	No insecticides are available which are compatible with crawfish production.
<b>Rice water weevil</b>	Water management: 2 to 3 weeks after permanent flood, sample for rice water weevil larvae. If populations are 3 medium-to-large larvae or 5 small larvae per core, drain the field and allow the field to dry 2 to 3 weeks. (This allows soils to dry to the point of cracking). To minimize losses from the rice water weevil, plant as early as reasonable and delay flooding as long as possible from an agronomic perspective.

<sup>1</sup>**Bacillus thuringiensis:** Several formulations are on the market; follow label directions.

**WARNING:** Always read the label for additional information. Carefully read labels for aquaculture restrictions. Re-entry times for workers entering treated fields should be strictly observed. Be sure to check the label for this information.