## PERENNIAL GRASS: PERENNIAL GRASS INSECT CONTROL

## Including bermudagrasses, bahiagrasses, fescues, and other perennial pasture grasses

Will Hudson, Extension Entomologist, and David Buntin, Research Entomologist

Bahagas bore, billbug inver, white principal seet larvae         Inclusion         Inclu	PEST	MATERIAL AND FORMULATION <sup>1</sup>	МОА	AMOUNT PER ACRE	REMARKS AND PRECAUTIONS
Bermulagrass Stem Maggot         Various pryethroids (ambda-cyhalothrin, etc)         3A         Lowest label rate (ambda-cyhalothrin, etc)         Apply 7-10 days after cutting if significant damage was noted.           Chinch hug         Mow or hum.         -         -           (ambda-cyhalothrin, etc)         3A         1.28-1.92 oz warrior II Zson         WIEN TO TREAT FOR INSECTS IN PERENNIAL-GRASS PASTURES           Cutworms         Materials applied for armyworms, 3A         2.24-4 oz         WIEN TO TREAT FOR INSECTS IN PERENNIAL-GRASS PASTURES           Cutworms         Materials applied for armyworms, will give helpful control.         APIIDS: Treat i fragunyorm, Treat in harval populations of these insects (any one or any combination) exceed 3 larvae (1/2" long or larger) per square foot.           Armyworm, Caterpillar, Fall armyworm, Striped Grass Looper         Natroinalignole + lambda-cyhalothrin Baythroid XL         1A         1-1.5 qt           Chirorntanilignole + lambda-cyhalothrin Baythroid XL         3A         2.6-2.8         FIRE ANTS: Treat in pastures where heavy livestock hirthing will accur. In hay pastures, treat when mounds are so numerous they interface with having operations.           Grifthrin Baythroid XL         3A         2.6-2.8         SPTTLE LARVAE: Treat the nop upliations are gause foot.           Grifthrin Baythroid XL         3A         1.28-1.92 oz         FIRE ABEETLES, CARSHOPERS: Treat if heavy infestations are causing the grass to apapar off-color outhinfly.           Grif	Bahiagrass borer, billbug larvae, white grubs, whitefringed beetle larvae				No effective insecticides labeled for control of these insect s in pastures. If practical, rotate fields to crops where preplant or at-planting insecticides can be used to control these insects. <b>Exception:</b> Deep turning of infested pastures usually reduces bahiagrass borer populations to the point that bahiagrass or other grasses can be reseeded into the pasture.
Chinch bug         Mow or bum.         Imbdia-cyhalohrin         3A         L28-192 oz           Warrior II Zeon         3A         1.28-192 oz         WHEN TO TREAT FOR INSECTS IN PERENNAL-GRASS PASTURES           Cutvorms         Materials applied for annyworms will give helpful control.         APHIDS: Treat when larval populations of these insects (any one or any combination) exceed 3 harva (1/2" long or larger) per square foot.           Armyworm, Caterpillars, Carbaryl Grass Looper         Carbaryl Grass Looper         Chiroartraniliprole 28         14-20 oz           Prevahon         23         14-20 oz         FRE ANTS, FLEA BETLES, GRASSHOPPERS: Treat if heavy populations are causing grass leaves to will over large areas of the field. CutTWORMS, FLEA BETLES, GRASSHOPPERS: Treat if heavy populations appear to be deficitating grass excessively.           Prevahon         3A         2.64-28         CHINCH BUGS: Treat if populations are causing lear grass on appear off-color or unthrify. Grass Looper           Chiroartraniliprole elimbric cyhalohrin Besige         3+28         6-10 flog         GREEN JUNE BETLE LARVAE: Treat when populations are causing the grass to appear off-color or unthrify. Grass Provide and the application are causing discoloration and damage over large areas of the field.           Imbda-cyhalohrin Besige         3+28         6-10 flog         GREEN JUNE BETLE LARVAE: Treat when populations are causing the grass to appear off-color or unthrify.           Millio 2L         3+28         6-10 flog         GREEN JUNE BETL	Bermudagrass Stem Maggot	Various pyrethroids (zeta-cypermethrin, cyfluthrin, lambda-cyhalothrin, etc)	3A	Lowest label rate	Apply 7-10 days after cutting if significant damage was noted.
Iambda-cylatobrin varior II Zeon zeta-cypermethrin Mustang Max3A 2.24-4 oz1.28-1.92 oz FOLIAGE FEDING CATERPILLARS (armyworm, fall armyworm, nocis grass worms, sod worbworms, yellowstriped armyworm): Treat when Iarval populations of these insects (any one or any combination sected 3 larvae (1/2" long or larger) per square foot.CutwormsMaterials applied for armyworms will give helpful control.APHIDS: Treat if heavy infestations are causing leaf discoloration over large areas of the field.Armyworm, Caterpillar, Fall armyworm, Striped Grass LooperIA1-1.5 qlCHINCH BUGS: Treat if populations are causing grass leaves to will over large areas of the field.CutwormsSevin SL, Sevin AF1A1-1.5 qlCHINCH BUGS: Treat if populations are causing leaf discoloration over large areas of the field.CutwormsChiorantraniliprole + lambda-cyhalothrin Baythroid XL.3+286-10 fl ozCifubrin Baythroid XL.3-42.6-2.8GREEN JUNE BEETLE LARVAE: Treat when populations average 1 larva/sq vd. LEAFHOPERS: Treat if heavy infestations are causing the grass to appear off-color or unthrifty. SprittLEBUGS: Treat when 1 or more adult spittlebug is found per square foot.Iambda-cyhalothrin Baythroid XL.3-41-2 ozIambda-cyhalothrin Baythroid XL.3-42.2-1-2 ozIambda-cyhalothrin Baythroid XL.3-42.2-2Iambda-cyhalothrin Baythroid XL.3-42.2-2Iambda-cyhalothrin Baythroid XL.3-42.2-2Iambda-cyhalothrin Baythroid XL.3-42.2-2Iambda-cyhalothrin Baythroid XL.3-42.2-2Iambda	Chinch bug	Mow or burn.			
Inter-speecher Mustang Maxx         3A Materials applied for armyworms will give beful contol.         Vertworms (12) long or larger) per square foot.         Vertworms (12) long or larger) per square foot.           Amyworm, Caterpillar, Fall armyworm, Stripel Grass Looper         carbaryl Sevin SL, Sevin 4F (10-bers)         1A 1.1.5 qt         APHIDS: Treat if heavy infestations are causing leaf discoloration over large areas of the field.           CHINCH BUGS: Treat if populations of these insects (any one or any Fall armyworm, Stripel Fall armyworm		<i>lambda-cyhalothrin</i> Warrior II Zeon	3A	1.28-1.92 oz	<ul> <li>WHEN TO TREAT FOR INSECTS IN PERENNIAL-GRASS PASTURES</li> <li>FOLIAGE FEEDING CATERPILLARS (armyworm, fall armyworm, mocis grassworms, sod webworms, yellowstriped armyworm): Treat when larval populations of these insects (any one or any combination) exceed 3 larvae (1/2" long or larger) per square foot.</li> </ul>
Cutworms         Materials applied for armyworms will give helpful control.         APHIDS: Treat if heavy infestations are causing leaf discoloration over large areas of the field.           Armyworm, Striped Grass Looper         carbaryl Svin SL, Svin 4F Others         1A 1-1.5 qt         1-1.5 qt         CHINCH BUGS: Treat if heavy infestations are causing grass leaves to wilt over large areas of the field.           Cutworms         chlorantraniliprole + lambda-cyhalothrin Besiege         3 + 28 0.00         6-10 fl oz - fultratin         CHINCH BUGS: Treat if populations are causing leaf discoloration over large areas of the field.           Grass Looper         Chlorantraniliprole + lambda-cyhalothrin Besiege         3 + 28 0.00         6-10 fl oz - fultratin         CHINCH BUGS: Treat if populations are causing leaf discoloration over large areas of the field.           Grass Looper         Chlorantraniliprole + lambda-cyhalothrin Besiege         3 + 28 0.00         6-10 fl oz - fultratin         CHINCH BUGS: Treat if populations are causing the grass to appear off-color or unthrifly.           Grass Looper         Grass Looper         3 + 28 0.00         6-10 fl oz         CHINCH BUGS: Treat if heavy infestations are causing the grass to appear off-color or unthrifly.           Grass Looper         Grass Looper         3 + 28 0.00         6-10 fl oz         CHINCH BUGS: Treat if heavy infestations are causing the grass to appear off-color or unthrifly.           Grass Looper         Grass Looper         3 + 28 0.00         2.6-2.8 <t< td=""><td><i>zeta-cypermethrin</i> Mustang Maxx</td><td>3A</td><td>2.24-4 oz</td></t<>		<i>zeta-cypermethrin</i> Mustang Maxx	3A	2.24-4 oz	
Armyworm, Caterpillars, Fall armyworm, Striped Grass Looper       carbaryl Sevin SL, Sevin 4F Others       1A       1-1.5 qt       CHINCH BUGS: Treat if populations are causing grass leaves to wilt over large areas of the field.         Grass Looper       Sevin SL, Sevin 4F Others       1       1-1.5 qt       CHINCH BUGS: Treat if populations are causing grass leaves to wilt over large areas of the field.         Grass Looper       Chincantraniliprole + lambda-cyhalothrin Besiege       28       14-20 oz       FIRE ANTS: Treat in pastures where heavy livestock birthing will occur. In hay pastures, treat when mounds are so numerous they interfere with haying operations.         Grass Looper       Grass Looper       3 + 28       6-10 fl oz         HIRE ANTS: Treat in pastures where heavy livestock birthing will occur. In hay pastures, treat when mounds are so numerous they interfere with haying operations.       GREEN JUNE BEETLE LARVAE: Treat when populations are causing the grass to appear off-color or unthrify.         Splintin       3A       2.6-2.8       THRIPS: Treat if heavy infestations are causing discolorations and damage over large areas of the field.         Immilin 2L.       15       1-2 oz       THRIPS: Treat if heavy infestations are causing discolorations and damage over large areas of the field.         methoxylenozide Intrepid 2F       18       4-8 oz       Tracer       Splinosid         methonyl Use methonyl on bermudagrass only.)       1A       1-2 oz       Splinosid       1-2 oz	Cutworms	Materials applied for armyworms will give helpful control.		nelpful control.	APHIDS: Treat if heavy infestations are causing leaf discoloration over large areas of the field.
Fall armyworm, Striped       Sevin SL, Sevin 4F       1-1.5 qt       CUTWORMS, FLEA BEETLES, GRASSHOPPERS: Treat if heavy populations appear to be defoliating grass excessively.         Grass Looper       Chlorantraniliprole       28       14-20 oz       FIRE ANTS: Treat in pastures where heavy livestock birthing will occur. In hay pastures, treat when mounds are so numerous they interfere with haying operations.         Chlorantraniliprole       3 + 28       6-10 fl oz       FIRE ANTS: Treat in pastures where heavy livestock birthing will occur. In hay pastures, treat when mounds are so numerous they interfere with haying operations.         Cyflurhrin       3A       2.6-2.8       GREEN JUNE BEETLE LARVAE: Treat when populations average 1 larva/sq yd.         LEAFHOPPERS: Treat if heavy infestations are causing the grass to appear off-color or unthrify.       SPITTLEBUCS: Treat when 1 or more adult spittlebug is found per square foot.         Marino 12       15       1-2 oz       THRIPS: Treat if heavy infestations are causing discolorations and damage over large areas of the field.         Marino 11 Zeon       3A       1.28-1.92 oz       PESTICIDE USE PRECAUTIONS         Apply any of the pesticides listed in this table with aerial or ground equipment as label directs. Where areas of rates is given for a material, use the low rate on low-growth grass or small larvae and the high rate on dense grass growth or large larvae.         spinosad       5       1-2 oz       Amdro: 7 day PHI for hay. Okay for grazing.         methoxyfortiol       0	Armyworm, Caterpillars,	<i>carbaryl</i> Sevin SL, Sevin 4F Others	1A	1-1.5 qt	<b>CHINCH BUGS:</b> Treat if populations are causing grass leaves to wilt over large areas of the field.
chlorantraniliprole Prevathon2814-20 ozozdrantranilignals eccesion (J. Construction)Prevathon3 + 2814-20 ozFIRE ANTS: Treat in pastures where heavy livestock birthing will occur. In hay pastures, treat when mounds are so numerous they interfere with haying operations.chlorantraniliprole + lambda-cyhalothrin Besiege3 + 286-10 fl ozFIRE ANTS: Treat in pastures where heavy livestock birthing will occur. In hay pastures, treat when mounds are so numerous they interfere with haying operations.cyfluthrin Baythroid XL3A2.6-2.8FIRE ANTS: Treat if heavy infestations are causing the grass to appear off-color or unthrify.diflubenzuron Dimilin 2L.151-2 ozTHRIPS: Treat if heavy infestations are causing discolorations and damage over large areas of the field.lambda-cyhalothrin Warrior II Zeon3A1.28-1.92 ozPESTICIDE USE PRECAUTIONSmethoxyfenozide Intrepid 2F184-8 ozApply any of the pesticides listed in this table with aerial or ground equipment as label directs. Where a range of rates is given for a material, use the low rate on low-growth grass or small larvae and the high rate on dense grass growth or large larvae.spinosad Tracer51-2 ozAmdro: 7 day PHI for hay. Okay for grazing. Baythroid: 0 day PHI for hay on forage; Do not apply more than 0.10 lb/A season.zeta-cypermethrin Mustang Maxx3A2.24-4 ozdiflubenzuron (Dimilin): 0 day for grazing; 1 day PHI for hay; no more than 2 oz/cutting.	Fall armyworm, Striped Grass Looper				CUTWORMS, FLEA BEETLES, GRASSHOPPERS: Treat if heavy populations appear to be defoliating grass excessively.
chlorantraniliprole + lambda-cyhalothrin Besiege3 + 28 chlorantraniliprole + lambda-cyhalothrin Basitroi XL6-10 fl ozmounds are so numerous they interfere with haying operations. GREEN JUNE BEETLE LARVAE: Treat when populations average 1 larva/sq yd. LEAFHOPPERS: Treat if heavy infestations are causing the grass to appear off-color or unthrifty. SPITTLEBUGS: Treat when 1 or more adult spittlebug is found per square foot.diffubenzuron Dimilin 2L151-2 ozTHRIPS: Treat if heavy infestations are causing discolorations and damage over large areas of the field.lambda-cyhalothrin Warron II Zeon3A1.28-1.92 ozPESTICIDE USE PRECAUTIONSmethoxyfenzide Intrepid 2F184-8 ozApply any of the pesticides listed in this table with aerial or ground equipment as label directs. Where a range of rates is given for a material, use the low rate on low-growth grass or small larvae and the high rate on dense grass growth or large larvae.methonyl Lannate 2. 41 LV, 90SP (Use methomyl on bermudargas only.)1A1-2 pt 0.25-0.5 lbAmdro: 7 day PHI for hay. Okay for grazing.zeta-cypermethrin Mustang Maxx3A2.24-4 ozdiflubenzuron (Dimilin): 0 day for grazing; 1 day PHI for hay; no more than 2 oz/cutting.		<i>chlorantraniliprole</i> Prevathon	28	14-20 oz	FIRE ANTS: Treat in pastures where heavy livestock birthing will occur. In hay pastures, treat when
+ lambda-cyhalothrin Besiege3A 2.6-2.8GREEN JUNE BEETLE LARVAE: Treat when populations average 1 larva/sq yd. LEAFHOPPERS: Treat if heavy infestations are causing the grass to appear off-color or unthrifty. SPITTLEBUGS: Treat when 1 or more adult spittlebug is found per square foot.diffubenzuron Dimilin 2L151-2 ozTHRIPS: Treat if heavy infestations are causing discolorations and damage over large areas of the field.lambda-cyhalothrin Warrior II Zeon3A1.28-1.92 ozPESTICIDE USE PRECAUTIONSmethoxyfenzide Intrepid 2F184-8 ozApply any of the pesticides listed in this table with aerial or ground equipment as label directs. Where a range of rates is given for a material, use the low rate on low-growth grass or small larvae and the high rate on dense grass growth or large larvae.methomyl Lannate 2.4 LV, 90SP (Use methomyl on bermudagrass only.)1A1-2 pt 0.25-0.5 lbAmdro: 7 day PHI for hay and grazing, see label for other restrictions. carbaryl (Sevin, etc.): Do not graze or cut for hay for 14 days after application. cypermethrin (Mustang Maxx): 0 day PHI for hay; no more than 0.10 lb/A/ season.zeta-cypermethrin Mustang Maxx3A2.24-4 ozdiflubenzuron (Dimilin): 0 day for grazing; 1 day PHI for hay; no more than 2 oz/cutting.		chlorantraniliprole + lambda-cyhalothrin Preisege	3 + 28	6-10 fl oz	mounds are so numerous they interfere with having operations.
DescriptionSALEAFHOPPERS: Treat if heavy infestations are causing the grass to appear off-color or unthrifty.cylluthrinSA2.6-2.8SPITTLEBUGS: Treat when 1 or more adult spittlebug is found per square foot.diffubenzuron151-2 ozTHRIPS: Treat if heavy infestations are causing discolorations and damage over large areas of the field.lambda-cyhalothrinSA1.28-1.92 ozPESTICIDE USE PRECAUTIONSWarrior II Zeon184-8 ozApply any of the pesticides listed in this table with aerial or ground equipment as label directs. Where a range of rates is given for a material, use the low rate on low-growth grass or small larvae and the high rate on dense grass growth or large larvae.spinosad51-2 ozAmdro: 7 day PHI for hay. Okay for grazing.methomyl1A1-2 ptBaythroid: 0 day PHI for hay on forage; Do not apply more than 0.10 lb/A/ season.zeta-cypermethrinSA2.24-4 ozdiflubenzuron (Dimilin): 0 day for grazing; 1 day PHI for hay; no more than 2 oz/cutting.					GREEN JUNE BEETLE LARVAE: Treat when populations average 1 larva/sq yd.
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Warrior II ZeonApply any of the pesticides listed in this table with aerial or ground equipment as label directs. Where a range of rates is given for a material, use the low rate on low-growth grass or small larvae and the high rate on dense grass growth or large larvae.methomyl Lannate 2.4 LV, 90SP (Use methomyl on bermudagrass only.)1A 1-2 pt 0.25-0.5 lbAmdro: 7 day PHI for hay and grazing, see label for other restrictions. carbaryl (Sevin, etc.): Do not graze or cut for hay for 14 days after application. cypermethrin (Mustang Maxx): 0 day PHI for hay or forage; Do not apply more than 0.10 lb/A/ season.zeta-cypermethrin Mustang Maxx3A 2.24-4 oz2.24-4 oz		lambda-cyhalothrin	3A	1.28-1.92 oz	
methoxyfenozide Intrepid 2F184-8 oza range of rates is given for a material, use the low rate on low-growth grass or small larvae and the high rate on dense grass growth or large larvae.spinosad Tracer51-2 ozAmdro: 7 day PHI for hay. Okay for grazing.methomyl Lannate 2.4 LV, 90SP (Use methomyl on bermudagrass only.)1A1-2 pt 0.25-0.5 lbBaythroid: 0 day PHI for hay and grazing, see label for other restrictions.zeta-cypermethrin Mustang Maxx3A2.24-4 ozdiflubenzuron (Dimilin): 0 day for grazing; 1 day PHI for hay; no more than 2 oz/cutting.		Warrior II Zeon			Apply any of the pesticides listed in this table with aerial or ground equipment as label directs. Where
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TracerImage: Second		spinosad	5	1-2 oz	Amdro: 7 day PHI for hay. Okay for grazing.
methomyl Lannate 2.4 LV, 90SP (Use methomyl on bermudagrass only.)1A1-2 pt 		Tracer			<b>Baythroid</b> : 0 day PHI for hay and grazing see label for other restrictions
Lannate 2.4 LV, 90SP       1-2 pt       Carbary (Sevin, etc.): Do not graze or cut for hay for 14 days after application.         (Use methomyl on bermudagrass only.)       0.25-0.5 lb       cypermethrin (Mustang Maxx): 0 day PHI for hay or forage; Do not apply more than 0.10 lb/A/ season.         zeta-cypermethrin       3A       2.24-4 oz       diflubenzuron (Dimilin): 0 day for grazing; 1 day PHI for hay; no more than 2 oz/cutting.		methomyl Lannate 2.4 LV, 90SP (Use methomyl on	1A 1-2 pt 0.25-0.5 lb	1-2 pt 0 25-0 5 lb	south and (Savin, etc.). Do not errors on out for how for 14 dows often employed
is the interformation of the interf					carbaryi (Sevin, etc.): Do not graze of cut for hay for 14 days after application.
zeta-cypermethrin Mustang Maxx3A3A2.24-4 oz2.24-4 oz		bermudagrass only.)		<b>cypermethrin (Mustang Maxx):</b> 0 day PHI for hay or forage; Do not apply more than 0.10 lb/A/ season.	
		<i>zeta-cypermethrin</i> Mustang Maxx	3A	2.24-4 oz	diflubenzuron (Dimilin): 0 day for grazing; 1 day PHI for hay; no more than 2 oz/cutting.

## PERENNIAL GRASS INSECT CONTROL

PEST	MATERIAL AND FORMULATION	МОА	AMOUNT PER ACRE	REMARKS AND PRECAUTIONS
Fire ants	<i>hydramethylnon</i> Amdro	20A	1-1.5 lb	PESTICIDE USE PRECAUTIONS
				Apply any of the pesticides listed in this table with aerial or ground equipment as label directs. Where a range of rates is given for a material, use the low rate on low-growth grass or small larvae and the high rate
	<i>methoprene</i> Extinguish	7A		on dense grass growth or large larvae.
				Intrepid: 0 day grazing interval, 7 day PHI for hay. One application per cutting.
	<i>spinosad</i> Justice	5	mound treatment only	Warrior II Zeon: 0 day grazing restriction, 7 day PHI for hay, see label for application restrictions.
				<b>methomyl:</b> Do not cut for hay within 3 days, or graze or feed treated crop within 7 days of last application. Do not apply more than 0.9 lb ai/A/crop. Do not make more than 4 applications per crop.
				<b>spinosad (Tracer):</b> Do not harvest hay or fodder for 3 days. Do not graze until spray has dried. Do not apply more than 6 oz/season.
				Besiege and Prevathon (chlorantraniliprole): 0 day PHI for forage or grazing; 7 day PHI for hay.
Flea beetles	Carbaryl as applied for an	myworm r	nay give helpful control.	
	<i>lambda-cyhalothrin</i> Warrior II Zeon	3A	1.28-1.92 oz	
Grasshoppers	malathion 8EC		20 fl oz	
	<i>cyfluthrin</i> Baythroid XL	3A	2.6-2.8	
	<i>lambda-cyhalothrin</i> Warrior II Zeon	3A	1.28-1.92 oz	
	<i>carbaryl</i> Sevin 4L	1A	1-1.5 qt	
	<i>zeta-cypermethrin</i> Mustang Maxx	3A	2.24-4 oz	
Green June beetle larvae	<i>carbaryl</i> Sevin 4L	1A	1-1.5 qt	
	<i>lambda-cyhalothrin</i> + <i>chlorantraniliprole</i> Besiege	28		
		3Å	5-9 oz	
Leafhoppers	<i>lambda-cyhalothrin</i> Warrior II Zeon	3A	1.28-1.92 oz	
	<i>zeta-cypermethrin</i> Mustang Maxx	3A	2.24-4 oz	

## PERENNIAL GRASS INSECT CONTROL

PEST	MATERIAL AND FORMULATION <sup>1</sup>	МОА	AMOUNT PER ACRE	REMARKS AND PRECAUTIONS
Mole crickets	No economically effective	materials	currently labeled.	
Sod webworms	<i>carbaryl</i> Sevin SL Sevin 4F others	1A	1.25 lb 2 lb	
	<i>diflubenzuron</i> Dimilin 2L	15	1-2 oz	
	<i>lambda-cyhalothrin</i> Warrior II Zeon	3A	1.28-1.92 oz	
Spittlebug adults	<i>carbaryl</i> (Sevin) as applied for armyworm may give helpful control. (Control of immatures may require cut and burn approach.)			
	<i>lambda-cyhalothrin</i> Warrior II Zeon	3A	1.28-1.92 oz	
	<i>zeta-cypermethrin</i> Mustang Maxx	3A	2.24-4 oz	

<sup>1</sup> Abbreviations used are: EC=emulsifiable concentrate, M=microencapsulated material, SP=soluble powder, L=liquid, S=sprayable powder, WP=wettable powder. Numbers following liquid formulations indicate lbs active ingredient per gallon; those following solids indicate percent active ingredient.