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# Management of Insect and Mite Pests in Corn

Tom A. Royer
Extension Entomologist

Arthropod pests of corn are varied, and often difficult to manage. Many corn pest problems can be avoided by implementing an Integrated Pest Management (IPM) plan that includes preventive pest management practices, such as selecting varieties adapted to Oklahoma growing conditions, planting at an optimal date, proper fertilization and irrigation, and using crop rotations. The application of insecticides, while sometimes necessary, should not be used as a substitute for good agronomic practices or as "preventative insurance" because it is rarely economically or environmentally justifiable.

The information herein is for educational purposes only. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by the Cooperative Extension Service is implied.

Pesticide recommendations in this publication were correct as of the "Modified Date" but always check the label that came with the purchased insecticide for the most current rates and restrictions

The first name listed is the trade name of a product registered for use in corn for the listed pest. The name in (parentheses) listed below the trade name is the name of the active ingredient. The active ingredient name is provided because in many cases, there are other registered products containing the same active ingredient that may cost less, so producers should compare prices.

The number [in brackets] following a product is its Mode of Action number [MOA]. The more frequently insecticides with the same MOA are used, the more likely resistance will occur. This number provides an easy way to select different modes of action to avoid selecting for pests that are resistant to a certain mode of action.

Refer to the following publications for additional information on corn pest management.

AGEC-203 Estimating Yield and Economic Returns from Replanting Corn
CR-2105 National Corn Handbook: Aflatoxins and other Mycotoxins
EPP-7160 Field Key to Larvae in Corn
EPP-7196 Grasshopper Management in Rangeland, Pastures, and Crops

# Management of Insect and Mite Pests in Corn

| *Pest, Damage and Treatment Threshold* | *Insecticide Formulation and [Group]* and (active ingredient)* | *Rate of Product per Acre or 1,000 ft-row* | *Comments* |
|---|---|---|---|
| **Armyworm**<br>1 to 1.5 inches. Dark green or brown caterpillar with five stripes along a smooth body. Head with honeycomb-like markings.<br><br>Damage: Armyworms present throughout growing season, but natural enemies have large impact on them.<br><br>Threshold: Treat if 30% of plants (seedling to six extended leaves) are infested, or when 75% of plants are infested with one or more larvae on larger plants. | Ambush/Pounce 25WP [3] (permethrin) | 6.4 to 12.8 oz (0.1 to 0.2 lb ai/A) | 30-day waiting period. |
| | Asana XL [3] (esfenvalerate) | 5.8 to 9.6 fl oz (0.03 to 0.05 lb ai/A) | 21-day waiting period. |
| | *Bacillus thuringiensis* [11] (Biobit, Condor, Dipel, Lepinox, Javelin, Xentari) | See product label for specific rates. | Check label for waiting periods. |
| | Baythroid XL [3] (beta-cyfluthrin) | 1.6 to 2.8 fl oz (0.013 to 0.022 lb ai/A) | 21-day wait for grain or fodder, 0-day wait for green forage. |
| | Besiege[28,3] (chlorantraniliprole + lambda cyhalothrin) | 6.0 to 10.0 fl oz/A | 21-day wait for harvest. |
| | Blackhawk [5] (spinosad) | 1.67 to 3.3 fl oz (0.038 to 0.075 lb ai/A) | 1-day PHI for grain, 7-day wait for grazing, 28-day wait for fodder. |
| | Cobalt [1B, 3] (chlorpyrifos + gamma-cyhalothrin) | 13 to 26 fl oz | 21-day wait for harvest, 140-day wait for grazing or silage. |
| | Delta Gold [3] (deltamethrin) | 1.5 to 1.9 fl oz (0.018 to 0.022 lb ai/A) | 21-day wait for harvest, 14-day wait for grazing or silage. |
| | Fastac [3] (alpha-cypermethrin) | 3.2 to 3.8 fl oz (0.020 to 0.025 lb ai/A) | 30-day wait for grain, 60-day wait for silage. |
| | Hero [3] (zeta-cypermethrin + bifenthrin) | 4.0 to 10.3 fl oz | 0-day wait for green forage, 21-day wait for harvest or fodder. |
| | Intrepid 2F [18] (methoxyfenozide) | 4 to 16 fl oz (0.06 to 0.12 lb ai/A) | 21-day waiting period. |
| | Karate w Zeon [3] (lambda cyhalothrin) | 1.28 to 1.92 fl oz (0.02 to 0.03 lb ai/A) | 3-day wait for forage, 21-day wait for harvest or grazing. |
| | Lannate LV [1A] (methomyl) | 0.75 to 1.5 pt (0.225 to 0.45 lb ai/A) | 35-day waiting period. |
| | Lorsban 4E [1B] (chlorpyrifos) | 1 to 2 pt (0.5 to 1.0 lb ai/A) | 30-day wait for grain, 60-day wait for silage. |
| | Match-Up [1b,3] (chlorpyrifos + bifenthrin) | 5.5 to 16.4 fl oz | 30-day wait for grain or harvest. |
| | Mustang MAXX EC [3] (zeta-cypermethrin) | 3.2 to 4.0 fl oz (0.02 to 0.025 lb ai/A) | 14-day waiting for harvest. |
| | Prevathon [28] (chlorantraniliprole) | 14 to 20 fl oz (0.047 to 0.067 lb ai/A) | 14-day waiting period for harvest; 1-day wait for forage, silage, stover. |
| | Proaxis 0.5 SC [3] (gamma-cyhalothrin) | 2.56 to 3.84 fl oz (0.01 to 0.015 lb ai/A) | 0-day waiting period. |

| *Pest, Damage and Treatment Threshold* | *Insecticide Formulation and [Group]* and (active ingredient)* | *Rate of Product per Acre or 1,000 ft-row* | *Comments* |
|---|---|---|---|
| **Armyworm (cont'd)** | Radiant SC [5] (spinetoram) | 3.0 to 6.0 fl oz (0.023 to 0.047 lb ai/A) | 28-day wait for harvest, 3-day wait for forage or fodder. |
| | Sevin XLR [1A] (carbaryl) | 1 to 2 qt (1.5 to 2 lb ai/A) | 48-day wait for grain harvest, 14-day wait for forage. |
| | Stallion [1B,3] (chlorpyrifos + zeta cypermethrin) | 9.25 to 11.75 fl oz | 30-day wait for harvest, 60-day wait for grazing or silage. |
| | Voliam Xpress [3, 28] Lambda cyhalothrin + chlorantraniloprole | 6.0 to 9.0 fl oz | 21 day waiting period. Check label for timing restrictions. |
| **Chinch bug** Nymphs are bright red with white band across back. Adults ½ inch, black with white "hour glass" shape on back<br><br>Damage: Adults may fly into field, early (March April) or adults and nymphs move into corn from maturing wheat fields (April-May). Remove plant juices, cause stunting, wilting and reddening of leaves.<br><br>Threshold:<br><br>Plants are less than 6 inches: 2 or more chinch bugs on 20% of plants<br><br>Plants are 6-18 inches: 10 or more chinch bugs on 75% of plants. | **Seed Treatments:** | | |
| | Cruiser 5FS [4A] (thiamethoxam) | 1.13 to 3.61 fl oz / 80,000 seed | Do not feed treated seed. Generally must order through a seed dealer. |
| | Gaucho 600 [4A] (imidacloprid) | 2.7 to 6.0 fl oz/ 80,000 seed | Do not feed treated seed. See label for mixing and handling instructions. Follow all label restrictions. |
| | Poncho 600 [4A] (clothianidin) | 1.13 to 2.26 fl oz/ 80,000 seed | Do not feed treated seed. See label for mixing and handling instructions. Follow all label restrictions. |
| | **Planting Time Applications** | | |
| | Force CS [3] (tefluthrin) | 0.46 to 0.57 fl oz/ 1,000-ft row | T-band application. Read label carefully for restrictions. |
| | **Post-emergence Sprays** | | Border sprays (30 to 60 ft) are often effective. Best control is obtained when insecticide is applied by ground, with nozzles directed at the base of the plants using a minimum of 20 to 30 gallons of water. |
| | Asana XL [3] (esfenvalerate) | 5.8 to 9.6 fl oz (0.03 to 0.05 lb ai/A) | 21-day waiting period. |
| | Baythroid XL [3] (beta-cyfluthrin) | 1.6 to 2.8 fl oz (0.013 to 0.022 lb ai/A) | 21-day waiting period for grain or fodder, 0-day wait for green forage. |
| | Brigade 2EC [3] (bifenthrin) | 2.1 to 6.4 fl oz (0.033 to 0.1 lb ai/A) | 30-day waiting period. |
| | Cobalt [1B, 3] (chlorpyrifos + gamma-cyhalothrin) | 19 to 38 fl oz | 21-day wait for harvest, 14-day wait for grazing or silage. |
| | Delta Gold [3] (deltamethrin) | 1.5 to 1.9 fl oz (0.018 to 0.022 lb ai/A) | 21-day wait for harvest, 12-day wait for grazing or silage. |
| | Fastac [3] (alpha-cypermethrin) | 3.2 to 3.8 fl oz (0.020 to 0.025 lb ai/A) | 30-day wait for grain, 60-day wait for silage. |
| | Hero [3] (zeta-cypermethrin + bifenthrin) | 4.0 to 10.3 fl oz | 30-day wait for grain, 60-day wait for silage. |

| *Pest, Damage and Treatment Threshold* | *Insecticide Formulation and [Group]* and (active ingredient)* | *Rate of Product per Acre or 1,000 ft-row* | *Comments* |
|---|---|---|---|
| **Chinch bug (cont'd)** | Karate w Zeon [3] (lambda cyhalothrin) | 1.92 fl oz (0.03 lb ai/A) | 21-day waiting period. |
| | Lorsban 4E [1B] (chlorpyrifos) | 1 to 2 pt (0.5 to 1.0 lb ai/A) | 35-day waiting period. |
| | Match-Up [1b,3] (chlorpyrifos + bifenthrin) | 5.5 to 16.4 fl oz | 30-day wait for grain or harvest. |
| | Mustang MAXX EC [3] (zeta-cypermethrin) | 3.2 to 4.0 fl oz (0.02 to 0.025 lb ai/A) | 30-day wait for grain, 60-day wait for silage. |
| | Proaxis 0.5 SC [3] (gamma-cyhalothrin) | 3.84 fl oz (0.015 lb ai/A) | 21-day waiting period. |
| | Sevin XLR [1A] (carbaryl) | 1 to 2 qt (0.5 to 1 lb ai/A) | 48-day waiting period for harvest, 14-day wait for grazing. |
| | Stallion [1B,3] (chlorpyrifos + zeta cypermethrin) | 9.25 to 11.75 fl oz | 30-day wait for harvest, 60-day wait for grazing or silage. |
| | Voliam Xpress [3,28] Lambda cyhalothrin + chlorantraniloprole | 9.0 fl oz | 21-day waiting period. Check label for timing restrictions. |
| **Corn Earworm** Striped robust caterpillars that range in color from green to pink to brown to black.<br><br>Damage: Caterpillars injure ear tips, feed in whorls. Feeding damage may increase potential for aflatoxins in grain.<br><br>Threshold: Not practical to control in field corn | Many Bt corn hybrids offer some suppression of corn earworm, but it is not recommended that corn earworm be controlled with insecticides. | NA | |
| **Corn rootworm (adults)** Small beetle, with black stripes, 12 spots, or green<br><br>Damage: Feed on silks. Heavy populations may interfere with pollination.<br><br>Threshold: Treat if beetles are abundant (over five per plant and silks are being severely clipped). | Ambush/Pounce 25WP [3] (permethrin) | 6.4 to 9.6 oz (0.1 to 0.15 lb ai/A) | 30-day waiting period. |
| | Asana XL [3] (esfenvalerate) | 5.8 to 9.6 fl oz (0.03 to 0.05 lb ai/A) | 21-day waiting period. |
| | Baythroid XL [3] (beta-cyfluthrin) | 1.6 to 2.8 fl oz (0.013 to 0.022 lb ai/A) | 21-day wait for grain or fodder, 0-day wait for green forage. |
| | Besiege[28,3] (chlorantraniliprole + lambda cyhalothrin) | 6.0 to 10 fl oz | 21-day wait for harvest. |
| | Brigade 2EC [3] (bifenthrin) | 2.1 to 6.4 fl oz (0.033 to 0.1 lb ai/A) | 30-day waiting period for grain or grazing. |
| | Cobalt [1B, 3] (chlorpyrifos + gamma-cyhalothrin) | 13 to 26 fl oz | 21-day wait for harvest, 14-day wait for grazing or silage. |

| *Pest, Damage and Treatment Threshold* | *Insecticide Formulation and [Group]* and (active ingredient)* | *Rate of Product per Acre or 1,000 ft-row* | *Comments* |
|---|---|---|---|
| **Corn rootworm (adults) (cont'd)** | Delta Gold [3] (deltamethrin) | 1.5 to 1.9 fl oz (0.018 to 0.022 lb ai/A) | 21-day wait for harvest, 12-day wait for grazing or silage. |
| | Dimethoate 4E [1B] | 0.66 to 1 pt | 14-day waiting period. |
| | Fastac [3] (alpha-cypermethrin) | 2.7 to 3.8 fl oz (0.017 to 0.025 lb ai/A) | 30-day wait for grain, 60-day wait for silage. |
| | Hero [3] (zeta-cypermethrin + bifenthrin) | 4.0 to 10.3 fl oz | 30-day wait for grain, 60-day wait for forage. |
| | Karate w Zeon [3] (lambda cyhalothrin) | 1.28 to 1.92 fl oz (0.02 to 0.03 lb ai/A) | 21-day waiting period. |
| | Lorsban 4E [1B] (chlorpyrifos) | 1 to 2 pt (0.5 to 1 lb ai/A) | 35-day waiting period. |
| | Match-Up [1b,3] (chlorpyrifos + bifenthrin) | 5.5 to 16.4 fl oz | |
| | Mustang MAXX EC [3] (zeta-cypermethrin) | 2.72 to 4.0 fl oz (0.017 to 0.025 lb ai/A) | 30-day wait for grain, 60-day wait for forage. |
| | Proaxis 0.5 SC [3] (gamma-cyhalothrin) | 2.56 to 3.84 fl oz (0.01 to 0.015 lb ai/A) | 21-day waiting period. |
| | Sevin XLR [1A] (carbaryl) | 1 to 2 qt (0.5 to 1 lb ai/A) | 48-day waiting period for harvest, 14-day wait for grazing. |
| | Stallion[1B,3] (chlorpyrifos + zeta cypermethrin) | 9.25 to 11.75 fl oz | 30-day waiting period for grain, 60-day wait for forage. |
| | Voliam Xpress [3, 28] Lambda cyhalothrin + chlorantraniloprole | 6.0 to 9.0 fl oz | 21-day waiting period. Check label for timing restrictions. |
| **Corn rootworm (larvae)** Thin, white worm-like larva that lives in soil. Damage is likely to occur in early part of growing season (before June 15). | **<u>Seed Treatments</u>** | | |
| | Rootworm resistant | *Transgenic seed varieties | *Follow company's guidelines for providing refugia, crop rotations and other resistance management strategies. |
| <u>Damage:</u> Feed on roots, causing lodged plants and plants that "gooseneck." Root tissue and brace roots are often chewed back to the base of the stalk. | Cruiser 5FS [4A] (thiamethoxam) | **5.6 fl oz/80,000 seed | **Do not use treated seed for feed, food, or oil processing. See label for mixing and handling instructions. Follow all label restrictions. |
| | Gaucho 600 [4A] | **6.0 fl oz/80,000 seed | |
| | Poncho 600 [4A] (clothianidin) | **5.64 fl oz/80,000 seed | |
| <u>Threshold:</u> Consider a planting-time insecticide, or a seed variety that contains transgenic "rootworm" protection if planting continuous corn. | Force ST [3] (tefluthrin) | 3 to 4 oz/cwt seed | Do not use treated seed for feed, food, or oil processing. Do not apply Force 3G if Force ST was used. |

| *Pest, Damage and Treatment Threshold* | *Insecticide Formulation and [Group]* and (active ingredient)* | *Rate of Product per Acre or 1,000 ft-row* | *Comments* |
|---|---|---|---|
| **Corn rootworm (larvae) (cont'd)** | **Planting Time** | | |
| | Aztec 2.1 G [1B,3] (tebupiromphos, cyfluthrin) | 6.7 fl oz/1,000 ft-row | Follow manufactures' guidelines for rates, application methods grazing and crop rotation restrictions. Rotation of insecticides during successive years is suggested. Do not make a foliar application if planting time application was made. |
| | Ballista LFC [3] (lambda-cyhalothrin | 0.66 fl oz/1,000 ft-row | |
| | Capture LFR [3] (bifenthrin) | 0.39 to 0.98 fl oz/ 1,000 ft-row | |
| | Counter 15G [1B] (terbufos) | 6 to 8 oz/1,000 ft-row | |
| | Force 3G [3] | 4 to 5 oz/1,000 ft-row | T-band or in-furrow |
| | Force CS [3] (tefluthrin) | 0.46 to 0.57 fl oz/ 1,000 ft row | T-band or in-furrow |
| | Fortress 5G [1B] (chlorethxyfos) | 3.0 to 4.5 oz/1,000 ft-row | T-band or in-furrow |
| | Lorsban 15 G [1B] (chlorpyrifos) | 2.5 fl oz/1,000 ft-row | |
| | Proaxis 0.5 CS [3] (gamma cyhalothrin) | 8 oz/1,000 ft-row | |
| | Thimet 20G [1B] (phorate) | 0.24 oz/1,000 ft-row | |
| | **Post Seedling-Emergence Application** | | Follow label directions for at-cultivation applications. Do not make application if planting time application was made. |
| | Counter 15G [1B] (terbufos) | 8 oz/1,000 ft-row | |
| | Cobalt [1B,3] (chlorpyrifos; lambdacyhalothrin) | 38 to 42 fl oz | |
| | Force 3G [3] (tefluthrin) | 4 to 5 oz/1,000 ft-row | |
| | Fortress 5G [1B] (chlorethxyfos) | 3.0 to 3.75 oz/1,000 ft-row | |
| | Lorsban 15 G [1B] (chlorpyrifos) | 8 oz/1,000 ft-row | |
| | Thimet 20G [1B] | 4.5 to 6 oz/1,000 ft-row | |

| *Pest, Damage and Treatment Threshold* | *Insecticide Formulation and [Group]* and (active ingredient)* | *Rate of Product per Acre or 1,000 ft-row* | *Comments* |
|---|---|---|---|
| **Cutworms (black, granulate, sandhill)** | **Seed Treatments** | | |
| Striped or solid colored, robust caterpillars that "roll" up when disturbed and prefer to live under ground. | Resistant varieties | Transgenic seed | Follow company's guidelines for providing refugia, crop rotation and other resistance management strategies. |
| | **Pre-Plant/Planting Time** | | |
| Damage: Cutworms generally feed at night, and live under the soil during the day. Plants will be cut at or slightly above the soil level, causing stand reductions. | Aztec 2.1 G [1B, 3] (tebupiromphos, cyfluthrin) | 6.7 fl oz/1,000 ft-row | Follow manufactures' guidelines for rates, application methods grazing and crop rotation restrictions. |
| | Capture 2EC [3] (bifenthrin) | 0.15 to 0.3 fl oz/ 1,000 ft-row | |
| | Counter 15G [1B] (terbufos) | 6 to 8 oz/1000 ft-row | |
| Threshold: Scout fields at seedling emergence. Treat when worms are less than ½ inch long and skips are noticed. | Force 3G [3] | 4 to 5 oz.1000 ft-row | T band or In-furrow |
| | Force CS [3] (tefluthrin) | 0.46 to 0.57 fl oz/ 1,000 ft row | T band or In-furrow |
| | Fortress 5G [1B] (chlorethxyfos) | 3.0 to 3.75 oz/ 1,000 ft-row | T-band or in-furrow |
| | Lorsban 15 G [1B] (chlorpyrifos) | 8 oz/1,000 ft-row | |
| | Proaxis 0.5 CS [3] (gamma cyhalothrin) | 0.66 oz/1,000 ft-row | |
| | Pounce 1.5 G [3] (permethrin) | 8 oz/1,000 ft-row | |
| | **Post-emergence Sprays** | | |
| | Ambush/Pounce 25WP [3] (permethrin) | 6.4 to 9.6 oz (0.1 to 0.15 lb ai/A) | 30-day waiting period. |
| | Asana XL [3] (esfenvalerate) | 5.8 to 9.6 fl oz (0.03 to 0.05 lb ai/A) | 21-day waiting period. |
| | Baythroid XL [3] (beta-cyfluthrin) | 0.8 to 1.6 fl oz (0.007 to 0.013 lb ai/A) | 21-day wait for grain or fodder, 0-day wait for green forage. |
| | Besiege[28,3] (chlorantraniliprole + lambda cyhalothrin) | 5.0 to 10 fl oz | 21-day wait for harvest. |
| | Capture LFR [3] (bifenthrin) | 0.2 to 0.78 fl oz/ 1000 linear ft-row banded | 30-day waiting period. |
| | | or 3.4 to 6.8 fl oz/acre as a foliar application | Follow label directions. Do not apply to soil with greater than 30% crop residue, do not apply more than 0.1 lb active per acre per season as an at-plant application. |

| *Pest, Damage and Treatment Threshold* | *Insecticide Formulation and [Group]* and (active ingredient)* | *Rate of Product per Acre or 1,000 ft-row* | *Comments* |
|---|---|---|---|
| **Cutworms (black, granulate, sandhill) (cont'd)** | Cobalt [1B,3] (chlorpyrifos + gamma-cyhalothrin) | (foliar) 13 to 26 fl oz (band) 1.89 fl oz/ 1,000 ft row | 21-day wait for harvest, 14-day wait for grazing or silage. |
| | Delta Gold [3] (deltamethrin) | 1.0 to 1.5 fl oz (0.012 to 0.018 lb ai/A) | 21-day wait for harvest, 12-day wait for grazing or silage. |
| | Fastac [3] (alpha-cypermethrin) | 1.3 to 2.8 fl oz (0.008 to 0.018 lb ai/A) | 30-day wait for grain, 60-day wait for silage. |
| | Hero [3] (zeta-cypermethrin + bifenthrin) | 2.6 to 6.1 fl oz | 30-day waiting period for grain, 60-day wait for grazing. |
| | Karate w Zeon [3] (lambda cyhalothrin) | 0.96 to 1.60 fl oz (0.015 to 0.025 lb ai/A) | 21-day waiting period. |
| | Lorsban 4E [1B] (chlorpyrifos) | 1 to 2 pt (0.5 to 1.0 lb ai/A) | 35-day waiting period. |
| | Match-Up [1b,3] (chlorpyrifos + bifenthrin) | 5.5 to 16.4 fl oz | 30-day wait for grain or harvest. |
| | Mustang MAXX EC [3] (zeta-cypermethrin) | 1.28 to 2.8 fl oz (0.008 to 0.0175 lb ai/A) | 30-day waiting period for grain and silage, 60-day wait for grazing. |
| | Proaxis 0.5 SC [3] (gamma-cyhalothrin) | 1.92 to 3.2 fl oz (0.0075 to 0.0125 lb ai/A) | 21-day waiting period. |
| | Stallion [1B,3] (chlorpyrifos + zeta cypermethrin) | 3.75 to 11.75 fl oz | 30-day waiting period for grain, 60-day wait for forage. |
| | Voliam Xpress [3,28] Lambda cyhalothrin + chlorantraniloprole | 5.0 to 9.0 fl oz | 21-day waiting period. Check label for timing restrictions. |
| **Fall armyworm** Large, striped, non-bristled worm up to 1.5 inches. Has a light colored, inverted "Y" on head. June-August. | **Seed Treatments** | | |
| | Resistant varieties | Transgenic seed | Follow company's guidelines for providing refugia, crop rotation and other resistance management strategies. |
| Damage: Larvae cut holes in leaves at whorl stage, heaviest damage occurs on late corn when caterpillars tunnel into ear or ear shank. | **Post-emergence Sprays** | | |
| | Baythroid XL [3] (beta-cyfluthrin) | 2.8 fl oz (0.022 lb ai/A) | 21-day wait for grain or fodder, 0-day wait for green forage. |
| Threshold: Treat if 75% of plants are infested during whorl stage. | Besiege[28,3] (chlorantraniliprole + lambda cyhalothrin) | 6.0 to 10 fl oz | 21-day wait for harvest. |
| | Blackhawk [5] (spinosad) | 1.67 to 3.3 fl oz (0.038 to 0.075 lb ai/A) | 1-day PHI for grain, 7-day wait for grazing, 28 days for fodder. |
| | Cobalt [1B, 3] (chlorpyrifos + gamma-cyhalothrin) | 13 to 26 fl oz | 21-day waiting period for harvest, 14-day wait for grazing or silage. |

| *Pest, Damage and Treatment Threshold* | *Insecticide Formulation and [Group]* and (active ingredient)* | *Rate of Product per Acre or 1,000 ft-row* | *Comments* |
|---|---|---|---|
| **Fall armyworm (cont'd)** | Delta Gold [3] (deltamethrin) | 1.5 to 1.9 fl oz (0.018-0.022 lb ai/A) | 21-day wait for harvest, 12-day wait for grazing or silage. |
| | Fastac [3] (alpha-cypermethrin) | 3.2 to 3.8 fl oz (0.020 to 0.025 lb ai/A) | 30-day wait for grain, 60-day wait for silage. |
| | Hero [3] (zeta-cypermethrin + bifenthrin) | 4.0 to 10.3 fl oz | 30-day wait for grain and silage, 60-day wait for grazing. |
| | Lannate LV [1A] (methomyl) | 0.75 to 1.5 pt 0.225 to 0.45 lb | 3-day wait for forage, 21-day wait for harvest or grazing. |
| | Lorsban 4E [1B] (chlorpyrifos) | 1 to 2 pt (0.5 to 1.0 lb ai/A) | 35-day waiting period. |
| | Match-Up [1b,3] (chlorpyrifos + bifenthrin) | 5.5 to 16.4 fl oz | 30-day wait for harvest or grazing. |
| | Mustang MAXX EC [3] (zeta-cypermethrin) | 3.2 to 4.0 fl oz (0.02 to 0.025 lb ai/A) | 30-day wait for grain and silage, 60-day wait for grazing. |
| | Prevathon[28] (chlorantraniliprole) | 14 to 20 fl oz (0.047 to 0.067 lb ai/A) | 14-day waiting period for harvest 1-day wait for forage, silage, stover. |
| | Proaxis 0.5 SC [3] (gamma-cyhalothrin) | 2.56 to 3.84 fl oz (0.01 to 0.015 lb ai/A) | 21-day waiting period. |
| | Stallion[1B, 3] (chlorpyrifos + zeta cypermethrin) | 9.25 to 11.75 fl oz | 30-day wait for harvest, 60-day wait for grazing or silage. |
| | Voliam Xpress[3, 28] Lambda cyhalothrin + chlorantraniloprole | 6.0 to 9.0 fl oz | 21-day waiting period. Check label for timing restrictions. |
| **Flea beetles** Shiny, black beetle about 1/16 inch that jumps when disturbed. | Ambush/Pounce 25WP [3] (permethrin) | 6.4 to 9.6 oz (0.1 to 0.15 lb ai/A) | 30-day waiting period. |
| | Asana XL [3] (esfenvalerate) | 5.8 to 9.6 fl oz (0.03 to 0.05 lb ai/A) | 21-day waiting period. |
| Damage: Early spring-summer. Plant tissue is scraped from leaf, giving it a drought stress appearance. Can cause delayed development is cool growing conditions | Baythroid XL [3] (beta-cyfluthrin) | 0.8 to 1.6 fl oz (0.007 to 0.013 lb ai/A) | 21-day wait for grain or fodder, 0-day wait for green forage. |
| | Besiege[28,3] (chlorantraniliprole + lambda cyhalothrin) | 6.0 to 10 fl oz | 21-day wait for harvest. |
| Threshold: Apply to small plants when beetles first appear and some plants are being killed. | Cobalt [1B, 3] (chlorpyrifos + gamma-cyhalothrin) | 13 to 26 fl oz | 21-day waiting period for harvest, 14-day wait for grazing or silage. |
| | Delta Gold [3] (deltamethrin) | 1.0 to 1.5 fl oz (0.012 to 0.018 lb ai/A) | 35-day waiting period. |
| | Fastac [3] (alpha-cypermethrin) | 2.7 to 3.8 fl oz (0.017 to 0.025 lb ai/A) | 30-day wait for grain, 60-day wait for silage. |
| | Hero [3] (zeta-cypermethrin + bifenthrin) | 2.6 to 6.1 fl oz | 30-day wait for grain and silage, 60-day wait for grazing. |

| *Pest, Damage and Treatment Threshold* | *Insecticide Formulation and [Group]* and (active ingredient)* | *Rate of Product per Acre or 1,000 ft-row* | *Comments* |
|---|---|---|---|
| **Flea beetles (cont'd)** | Karate w Zeon [3] (lambda cyhalothrin) | 1.28 to 1.92 fl oz (0.02 to 0.03 lb ai/A) | 21-day wait for silage, 3-day wait for grazing. |
| | Lannate LV [1A] (methomyl) | 0.75 to 1.5 pt 0.225 to 0.45 lb | 3-day wait for forage, 21-day wait for harvest or grazing. |
| | Lorsban 4E [1B] (chlorpyrifos) | 1 to 2 pt (0.5 to 1.0 lb ai/A) | 35-day waiting period. |
| | Match-Up [1B,3] (chlorpyrifos + bifenthrin) | 5.5 to 16.4 fl oz | 30-day wait for grain or harvest. |
| | Mustang MAXX EC [3] (zeta-cypermethrin) | 2.72 to 4.0 fl oz (0.017 to 0.025 lb ai/A) | 30 -day wait for grain and silage, 60-day wait for grazing. |
| | Proaxis 0.5 SC [3] (gamma-cyhalothrin) | 2.56 to 3.84 fl oz (0.01 to 0.015 lb ai/A) | 21-day waiting period. |
| | Sevin XLR [1A] (carbaryl) | 1 to 2 qt (0.5 to 1 lb ai/A) | 48-day wait for harvest: 14-day wait for grazing. |
| | Stallion[1B,3] (chlorpyrifos + zeta cypermethrin) | 9.25 to 11.75 fl oz | 30-day waiting period for grain, 60-day wait for forage. |
| | Voliam Xpress [3,28] Lambda cyhalothrin + chlorantraniloprole | 6.0 to 9.0 fl oz | 21-day waiting period. Check label for timing restrictions. |
| **Grasshopper** 1-2 inches, outer wings leathery, inner wings clear or colored. Enlarged hind legs designed for jumping. | Asana XL [3] (esfenvalerate) | 2.9 to 5.8 fl oz (0.015 to 0.03 lb ai/A) | 21-day waiting period. |
| | Baythroid XL [3] (beta-cyfluthrin) | 2.1 to 2.8 fl oz (0.017 to 0.022 lb ai/A) | 21-day wait for grain or fodder, 0-day wait for green forage. |
| Damage: Chew leaves, leaving ragged edges, or completely chewing leaf blade. Damage emerging seed heads, causing yield loss. | Cobalt [1B, 3] (chlorpyrifos + gamma-cyhalothrin) | 7 to 13 fl oz | 21-day waiting period for harvest, 14-day wait for grazing or silage. |
| | Delta Gold [3] (deltamethrin) | 1 to 1.5 fl oz (0.012-0.018 lb ai/A) | 21-day wait for harvest; 12-day wait for grazing or forage. |
| Threshold: Consider treating if numbers reach 8 to 14 in the field, or 20 to 40 in field margins. | Fastac [3] (alpha-cypermethrin) | 2.7 to 3.8 fl oz (0.017 to 0.025 lb ai/A) | 30-day wait for grain, 60-day wait for silage. |
| | Hero [3] (zeta-cypermethrin + bifenthrin) | 2.6 to 6.1 fl oz | 30-day waiting period for grain, 60-day wait for grazing. |
| See F-7196, Grasshopper Management in Rangeland, Pastures, and Crops for more information. | Karate w Zeon [3] (lambda cyhalothrin) | 1.28 to 1.92 fl oz (0.02 to 0.03 lb ai/A) | 21-day waiting period. |
| | Lorsban 4E [1B] (chlorpyrifos) | 1 to 2 pt (0.5 to 1 lb ai/A) | 35-day waiting period. |
| | Match-Up [1b,3] (chlorpyrifos + bifenthrin) | 5.5 to 16.4 fl oz | 30-day wait for harvest or grazing. |
| | Mustang MAXX EC [3] (zeta-cypermethrin) | 2.72 to 4.0 fl oz (0.017 to 0.025 lb ai/A) | 30-day waiting period for grain and silage, 60-day wait for grazing. |

| *Pest, Damage and Treatment Threshold* | *Insecticide Formulation and [Group]* and (active ingredient)* | *Rate of Product per Acre or 1,000 ft-row* | *Comments* |
|---|---|---|---|
| **Grasshopper (cont'd)** | Prevathon[28] (chlorantraniliprole) | 8.0 to 20 fl oz (0.027 to 0.067 lb ai/A) | 14-day waiting period for harvest 1-day wait for forage, silage, stover. |
| | Proaxis 0.5 SC [3] (gamma-cyhalothrin) | 1.92 to 3.2 fl oz (0.0075 to 0.0125 lb ai/A) | 21-day waiting period. |
| | Sevin XLR [1A] (carbaryl) | 0.5 to 1.5 qt (0.25 to 0.75 lb ai/A) | 48-day wait for harvest: 14-day wait for grazing. |
| | Voliam Xpress[3,28] Lambda cyhalothrin + chlorantraniloprole | 6.0 to 9.0 fl oz | 21-day waiting period. Check label for timing restrictions. |
| **Mites** Small, less than 1/100 inch. Cause brown stippling of leaves. Banks grass and two spotted spidermites are most common pests. | Capture 2EC [3] (bifenthrin) | 5.12 to 6.4 fl oz (0.08 to 0.1 lb ai/A) | 30-day waiting period. |
| | Comite II [20] (propargite) | 36 to 54 fl oz/Acre | 30-day waiting period. Apply when mite colonies first form, when leaves are dry. |
| | Dimethoate 4E [1B] | 0.66 to 1 pt | 14-day waiting period. |
| Damage: Causes stippling of leaves, severe infestations can kill leaves. Infestations generally start at lower leaves and move upward. | Hero [3] (zeta cypermethrin + bifenthrin) | 10.3 fl oz | 35-day waiting period. |
| | Oberon 2 SC [23] (spiromesifen) | 2.85 to 8.0 fl oz | 30-day wait for harvest, 5-day wait for forage or silage. |
| Threshold: Treat when there is visible damage on the lower third of the plant and small colonies are visible on the middle third of the plant, and the corn has not yet reached the hard dough stage. | Onager [10A] (hexythiazox) | 10 to 24 fl oz | 45-day waiting period. |
| | Portal [21A] (fenpyroximate) | 1.5 to 2 pints (0.267 to 0.71 lb ai/A) | 14-day waiting period. |
| | Zeal WDG [10B] (etoxazole) | 1.0 to 3.0 oz (0.045 to 0.135 lb ai/A) | * for seed production only, 21-day waiting period. |
| | | | NOTE: Treatments at hard-dough stage or later are not cost effective. When heavy infestations occur, erratic control will usually be the rule. Thorough coverage is important, higher volumes (2 to 3 gallons or more per acre) when applied by aircraft increase the effectiveness of the spray. |
| **Seedcorn maggot, Seed corn beetle** Maggots are yellowish-white, tapered larvae about 1/4 inches. Beetles are about 3/8 inches, with two black stripes on brown wing covers. | **Seed Treatments** | | Follow manufactures' guidelines for rates, application methods grazing and crop rotation restrictions. Rotation of insecticides during successive years is suggested. |
| | Cruiser 5FS [4A] (thiamethoxam) | 0.56 to 3.61 fl oz / 80,000 seed | |
| Damage: Damage occurs in spring, especially if soils are cool and moist and seeds are not germinating rapidly. Damage is notices as skips in plant stands. Seed will be hollowed out. | Poncho 600 [4A] (clothianidin) | 1.13 to 2.26 fl oz/ 80,000 seed | |
| | Force ST [3] (tefluthrin) | 3 to 4 oz/cwt seed | |
| | **Planting Time** | | |
| | Aztec 2.1 G [1B,3] (tebupiromphos, cyfluthrin) | 6.7 fl oz/1,000 ft-row | |

| *Pest, Damage and Treatment Threshold* | *Insecticide Formulation and [Group]* and (active ingredient)* | *Rate of Product per Acre or 1,000 ft-row* | *Comments* |
|---|---|---|---|
| **Seedcorn maggot, Seed corn beetle**<br>Threshold:<br>Replanting is the only recourse if damage has already occurred. Use a planting-time treatment if fields have a history. No-till fields may be more vulnerable to attack. | Ballista LFC [3] (lambda-cyhalothrin) | 0.66 fl oz/1,000 ft-row | |
| | Capture LFR [3] (befenthrin) | 0.2 to 0.78 fl oz/ 1,000 ft-row | Seed corn beetle only. |
| | Counter 15G [1B] (terbufos) | 6 to 8 oz/1,000 ft-row | |
| | Lorsban 15G [1B] (chlorpyrifos) | 8 to 12 oz/1,000 ft-row | T-band or In-furrow. |
| | Force 3G [3] (tefluthrin) | 4 to 5 oz/1,000 ft-row | T-band or In-furrow. |
| | Fortress 5G [1B] (chlorethxyfos) | 3.0 to 3.75 oz/1,000 ft-row | |
| **Southwestern corn borer**<br>Full grown caterpillars are white with prominent dark spots on body. Eggs are laid in masses of 12 to 30. They overlap like egg scales. Eggs are white when first laid, then red bands appear before they hatch.<br><br>Damage: First generation causes "dead heart" in plants. Second generation tunnels throughout stalk. May girdle mature stalks causing lodging.<br><br>Threshold:<br>Threshold based on egg masses. Treat if 25% of plants have egg masses or newly hatched larvae. A repeat application may be needed in 7 to 10 days. | **Seed Treatments**<br>Resistant varieties | | Transgenic seed Follow company's guidelines for providing refugia, crop rotation and other resistance management strategies. |
| | **Post-emergence Sprays**<br>Baythroid XL [3] (beta-cyfluthrin) | 1.6 to 2.8 fl oz (0.013 to 0.022 lb ai/A) | 21-day wait for grain or fodder, 0-day wait for green forage. |
| | Besiege[28,3] (chlorantraniliprole + lambda cyhalothrin) | 6.0 to 10 fl oz | 21-day wait for harvest. |
| | Blackhawk [5] (spinosad) | 2.2 to 3.3 fl oz (0.05 to 0.075 lb ai/A) | 1-day PHI for grain, 7-day wait for grazing, 28-day wait for fodder. |
| | Capture 2EC [3] (bifenthrin) | 2.6 to 6.4 fl oz (0.033 to 0.1 lb ai/A) | 30-day waiting period. |
| | Cobalt [1B,3] (chlorpyrifos + gamma-cyhalothrin) | 19 to 38 fl oz | 21-day waiting period for harvest, 14-day wait for grazing or silage. |
| | Delta Gold [3] (deltamethrin) | 1.5 to 1.9 fl oz (0.018 to 0.022 lb ai/A) | 21-day wait for harvest; 12-day wait for forage or grazing. |
| | Fastac [3] (alpha-cypermethrin) | 2.7 to 3.8 fl oz (0.017 to 0.025 lb ai/A) | 30-day wait for grain, 60-day wait for silage. |
| | Intrepid 2F [18] (methoxyfenozide) | 4 to 16 fl oz (0.06 to 0.25 lb ai/A) | 21-day waiting period. |
| | Karate w Zeon (lambda cyhalothrin) | 1.28 to 1.92 fl oz (0.02 to 0.03 lb ai/A) | 35-day waiting period. |

| *Pest, Damage and Treatment Threshold* | *Insecticide and [Group]* (active ingredient)* | *Formulation and Rate of Product per Acre or 1,000 ft-row* | *Comments* |
|---|---|---|---|
| **Southwestern corn borer (cont'd)** | Hero [3] (zeta-cypermethrin + bifenthrin) | 4.0 to 10.3 fl oz | 30-day waiting period for grain and silage, 60-day wait for grazing. |
| | Lorsban 4E [1B] (chlorpyrifos] | 1.5 to 2 pt (0.75 to 1 lb ai/A) | 30-day waiting period for grain and silage. |
| | Match-Up [1b,3] (chlorpyrifos + bifenthrin) | 5.5 to 16.4 fl oz | 30-day wait for grain or harvest. |
| | Mustang MAXX EC [3] (zeta-cypermethrin) | 2.72 to 4.0 fl oz (0.017 to 0.025 lb ai/A) | 30-day waiting period for grain and silage, 60-day wait for grazing. |
| | Prevathon[28] (chlorantraniliprole) | 14 to 20 fl oz (0.047 to 0.067 lb ai/A) | 14-day waiting period for harvest 1-day wait for forage, silage, stover. |
| | Proaxis 0.5 SC [3] (gamma-cyhalothrin) | 2.56 to 3.84 fl oz (0.01 to 0.015 lb ai/A) | 21-day waiting period. |
| | Radiant SC [5] (spinetoram) | 3.0 to 6.0 fl oz (0.023 to 0.047 lb ai/A) | 28-day wait for harvest, 3-day wait for forage or fodder. |
| | Stallion [1B,3] (chlorpyrifos + zeta cypermethrin) | 9.25 to 11.75 fl oz | 30-day waiting period for grain, 60-day wait for forage. |
| | Voliam Xpress [3, 28] Lambda cyhalothrin + chlorantraniloprole | 6.0 to 9.0 fl oz | 21-day waiting period. Check label for timing restrictions. |
| **Western bean cutworm** Larvae are dark brown with faint diamond-shaped markings on their backs. Measure 1.5 inches. Eggs are deposited in masses of 4 to 200 on upper surface of leaves. | **Seed Treatments** | | |
| | Resistant varieties | Transgenic seed | Follow company's guidelines for providing refugia, crop rotation and other resistance management strategies. |
| | **Post-emergence Sprays** | | |
| Damage: Larvae feed on developing tassel, or silk. They feed on developing kernels once the ear has formed. | Pounce 25 WP (permethrin) | 3.2 to 6.4 oz (0.5 to 0.1 lb ai/A) | 30-day waiting period. |
| | Asana XL [3] (esfenvalerate) | 2.9 to 5.8 fl oz (0.015 to 0.03 lb ai/A) | 21-day waiting period. |
| Threshold: Treat of eight percent or more of the plants have egg masses or small larvae in the tassels and the crop is 95% tasseled. | Baythroid XL [3] (beta-cyfluthrin) | 1.6 to 2.8 fl oz (0.013 to 0.022 lb ai/A) | 21-day waiting period. |
| | Besiege[28,3] (chlorantraniliprole + lambda cyhalothrin) | 5.0 to 10 fl oz | 21-day wait for harvest. |
| | Blackhawk [5] (spinosad) | 2.2 to 3.3 fl oz (0.05 to 0.075 lb ai/A) | 1-day PHI for grain, 7-day wait for grazing, 28-day wait for fodder. |
| | Capture 2EC [3] (bifenthrin) | 2.6 to 6.4 fl oz (0.033 to 0.1 lb ai/A) | 30-day waiting period. |
| | Cobalt [1B, 3] (chlorpyrifos + gamma-cyhalothrin) | 13 to 26 fl oz | 21-day wait for harvest, 14-day wait for grazing or silage. |

| *Pest, Damage and Treatment Threshold* | *Insecticide Formulation and [Group]* and (active ingredient)* | *Rate of Product per Acre or 1,000 ft-row* | *Comments* |
|---|---|---|---|
| **Western bean cutworm** | Fastac [3] (alpha-cypermethrin) | 1.8 to 3.8 fl oz (0.011 to 0.025 lb ai/A) | 30-day wait for grain, 60-day wait for silage. |
| | Intrepid 2F [18] (methoxyfenozide) | 4 to 16 fl oz (0.06 to 0.25 lb ai/A) | 21-day wait for harvest. |
| | Karate w Zeon [3] (lambda cyhalothrin) | 0.96 to 1.60 fl oz (0.015 to 0.025 lb ai/A) | 21-day wait for harvest or grazing. |
| | Lorsban 4E [1B] (chlorpyrifos) | 1 to 2 pt (0.5 to 1 lb ai/A) | 35-day wait for harvest, do not graze or use for forage. |
| | Match-Up [1b,3] (chlorpyrifos + bifenthrin) | 5.5 to 16.4 fl oz | 30-day wait for harvest or grazing. |
| | Mustang MAXX EC [3] (zeta-cypermethrin) | 1.76 to 4.0 fl oz (0.011 to 0.025 lb ai/A) | 30-day waiting period for grain and silage, 60-day wait for grazing. |
| | Prevathon[28] (chlorantraniliprole) | 14 to 20 fl oz (0.047 to 0.067 lb ai/A) | 14-day waiting period for harvest 1-day wait for forage, silage, stover. |
| | Proaxis 0.5 SC [3] (gamma-cyhalothrin) | 1.92 to 3.2 fl oz (0.0075 to 0.0125 lb ai/A) | 21-day waiting period. |
| | Radiant SC [5] (spinetoram) | 3.0 to 6.0 fl oz (0.023 to 0.047 lb ai/A) | 28-day wait for harvest, 3-day wait for forage or fodder. |
| | Sevin XLR [1A] (carbaryl) | 2 qt (1 lb ai/A) | 48-day wait for harvest: 14-day wait for grazing. |
| | Stallion [1B,3] (chlorpyrifos + zeta cypermethrin) | 5.0 to 11.75 fl oz | 30-day waiting period for grain, 60-day wait for forage. |
| | Voliam Xpress [3,28] Lambda cyhalothrin + chlorantraniloprole | 5.0 to 9.0 fl oz | 21-day waiting period. Check label for timing restrictions. |
| **White grub** Large, "C" shaped grub with a white body and a brown head. | **Seed Treatments** | | |
| Damage: Feed on developing roots, cause slow growth, stunting and stand loss. | Cruiser 5FS [4A] (thiamethoxam) | 0.56 to 3.61 fl oz / 80,000 seed | Do not use treated seed for feed, food or oil processing. |
| | Poncho 600 [4A] (clothianidin) | 1.13 fl oz/80,000 seed | Do not use treated seed for feed, food or oil processing. |
| | Force ST [3] | 3 to 4 oz/cwt seed | Do not use Force 3G if Force ST was used. |
| Threshold: No reliable thresholds are available. Consider using an at-planting treatment for "suppression" if field has a history of grub problems. | **Planting Time** | | |
| | Aztec 2.1 G [1B,3] (tebupiromphos, cyfluthrin) | 6.7 fl oz/1,000 ft-row | Do not use treated seed for feed, food or oil processing. |
| | Ballista LFC [3] (lambda cyhalothrin | 0.66 fl oz/1,000 ft-row | Follow manufactures' guidelines for rates, application methods grazing and crop rotation restrictions. Rotation of insecticides during successive years is suggested. |

| *Pest, Damage and Treatment Threshold* | *Insecticide Formulation and [Group]* and (active ingredient)* | *Rate of Product per Acre or 1,000 ft-row* | *Comments* |
|---|---|---|---|
| **White grub (cont'd)** | Counter 15G [1B] (terbufos) | 6 to 8 oz/1,000 ft-row | T-band or in-furrow |
| | Force 3G [3] (tebupiromphos, cyfluthrin) | 4 to 5 oz/1,000 ft-row | T-band or in-furrow |
| | Fortress 5G [1B] (chlorethxyfos) | 3.0 to 3.75 oz/ 1,000 ft-row | |
| | Proaxis 0.5 SC [3] (gamma-cyhalothrin) | 0.66 fl oz/1,000 ft-row | |
| **Wireworm** Hard-shelled, smooth, cylindrical, yellowish to brown worms. Two- to six-year life cycle. More common in corn planted into a sod or grass pasture. | **Seed Treatments** | | |
| | Cruiser 5FS [4A] (thiamethoxam) | 0.56 to 3.61 fl oz / 80,000 seed | Do not use treated seed for feed, food or oil processing. |
| | Poncho 600 [4A] (clothianidin) | 1.13-2.36 fl oz/ 80,000 seed | Do not use treated seed for feed, food, or oil processing. |
| Damage: Feed on seed, seedling. Cause stunting and stand loss. | Force ST [3] (tebupiromphos, cyfluthrin) | 3 to 4 oz/cwt seed | Do not use Force 3G if Force ST was used. |
| Threshold: No reliable thresholds are available. Treat if field has a history of problems. Wireworms may be more of a problem in no-till or minimum till fields. | **Planting Time** | | |
| | Aztec 2.1 G [1B,3] (tebupiromphos, cyfluthrin) | 6.7 fl oz/1,000 ft-row | Do not use treated seed for feed, food or oil processing. |
| | Ballista LFC [3] (lambda cyhalothrin | 0.66 fl oz/1,000 ft-row | Follow manufactures' guidelines for rates, application methods grazing and crop rotation restrictions. Rotation of insecticides during successive years is suggested. |
| | Capture 1.5 G [3] | 3.2 to 8 oz/1,000 ft-row | |
| | Counter 15G [1B] (terbufos) | 6 to 8 oz/1,000 ft-row | T-band or in-furrow |
| | Force 3G [3] (tebupiromphos, cyfluthrin) | 4 to 5 oz/1,000 ft-row | T-band or in-furrow |
| | Fortress 5G [1B] (chlorethxyfos) | 3.0 to 3.75 oz/1,000 ft-row | |
| | Lorsban 15 G[1B] (chlorpyrifos) | 8 oz/1,000 ft-row | |
| | Proaxis 0.5 SC [3] (gamma-cyhalothrin) | 0.66 fl oz/1,000 ft-row | |

## Pre-harvest Intervals and grazing restrictions

| | |
|---|---|
| Ambush/Pounce | 30-day PHI for grazing or harvest. |
| Asana XL | 21-day PHI for harvest or grazing. |
| Aztec 2.1G | Do not exceed 7.3 lb. per acre per crop season. |
| Ballista LFC | 21-day waiting period for grain or fodder. |
| Baythroid XL | 21-day waiting period for grain or fodder, 0 days for green forage. |
| Besiege | 21-day waiting period for grain or fodder, 1 day for grazing. |
| Blackhawk | 1-day PHI for grain, 7-day wait for forage, or 28-day wait for fodder. |
| Capture 2EC | 30-day PHI for harvest or grazing. |
| Cobalt | 21-day waiting period for harvest, 14 days for grazing. |
| Comite II | Apply in a minimum of 20 gal of water/acre ground, 3 gal by air. |
| Counter 15G | Check label for precautions regarding application of Counter 15G and its interaction with ALS inhibiting herbicides. |
| Cruiser 5FS | No grazing restriction. |
| Delta Gold | 21-day PHI for harvest, 12 days for forage or grazing. |
| Dimethoate | Apply by aircraft. 14 day PHI for harvest or grazing. |
| Fastac | 30-day PHI for harvest, 60 days for grazing. |
| Force 3G | 30-day crop rotation restriction. |
| Fortress 5G | 30-day crop rotation restriction. |
| Hero | 30-day PHI for harvest, 60 days for grazing. |
| Intrepid | 21-day PHI for harvest. |
| Karate w Zeon | 21-day PHI for harvest. |
| Lorsban 4E | 35-day PHI for harvest, do not graze or use for silage. |
| Malathion | 5-day PHI for harvest or grazing. |
| Match-Up | 30 day PHI for harvest or grazing. |
| Methomyl | 3-days for forage, 21-day PHI for harvest or grazing. |
| Mustang MAXX | 30-day PHI for harvest, 60 days for grazing. |
| Oberon | 5-day PHI for green forage, 30 days for grain or stover. |
| Onager | 45-day PHI for harvest or grazing. |
| Poncho | 45-day PHI for harvest or grazing. |
| Portal | 14-day PHI. |
| Prevathon | 14-day PHI for harvest, 1 day for forage, silage, fodder . |
| Proaxis | 21-day PHI for harvest or grazing. |
| Sevin XLR | 14-day PHI for grazing, 48 days for harvest. |
| Stallion | 30-day PHI for grain, 60 days for forage. |
| Voliam Xpress | 21-day PHI. |
| Zeal | 21-day PHI. |

*MOA group numbers in brackets [#] following the insecticide name are used to designate the mode of action of the insecticide according to the classification system developed by the Insecticide Resistance Action Committee, (IRAC). It is intended to help in the selection of insecticides for preventative resistance management. If you make multiple applications for a specific pest during a growing season, simply select a registered insecticide with a different number for each application. To further delay resistance from developing, integrate other control methods into your pest management programs.

The pesticide information presented in this publication was current with federal and state regulations at the time of revision. READ and FOLLOW all LABEL directions.



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