

SUGARBEET INSECTS

Other resources available through NDSU Extension Service:

Internet Document: Insects Affecting Sugarbeets in North Dakota (<http://www.sreb.org/brochures/ndinsects/ndinsects.htm>)
 Publications: Sugarbeet Production Guide
 Sugarbeet Research and Extension Reports
 Sugarbeet Insects (color I.D. plates)

| Calendar of Sugarbeet Insect Activity in the Red River Valley | | | | | | | | | | | |
|---|--------------|--|--|--|--|--|------|--|--|---------------------------------------|--|
| April | May | | | June | | | July | | | August | |
| | Flea Beetles | | | | | | | | | | |
| | Springtails | | | | | | | | | | |
| | White Grubs | | | | | | | | | | |
| | Wireworms | | | | | | | | | | |
| | | | | Cutworms - Dingy, Dark-sided, and Redbacked | | | | | | | |
| | | | | Beet Webworm - adults | | | | | | | |
| | | | | Beet Webworm - larvae | | | | | | | |
| | | | | Sugarbeet Root Maggot - adults | | | | | | | |
| | | | | Sugarbeet Root Maggot - larvae | | | | | | | |
| | | | | | | | | | | Tarnished Plant (<i>Lygus</i>) Bugs | |
| | | | | | | | | | | Cutworms - Black and Variegated | |

BEET WEBWORM

Beet webworms rarely occur in significant numbers in Red River Valley sugarbeet fields. Larvae are slender caterpillars and are very active when disturbed. Early-stage larvae are dark green. Older larvae are olive green and have a dark band flanked on each side by two light-colored stripes running down the center of their back. Full-grown larvae can be up to 1½ inches long. Adults are mottled tan and brown moths with smoky grayish wing margins. The moths first appear in late May and early June. Larvae usually cause problems during the first 3 weeks of June. A second brood is also possible during late August and September.

Threshold:

Treatment is recommended if 1 to 2 webworms are present on 50% to 75% of sampled leaves.

| INSECTICIDE | DOSAGE IN LB AI/ACRE | PRODUCT PER ACRE | RESTRICTIONS ON USE |
|-----------------------------------|-------------------------|---------------------|---|
| esfenvalerate Asana XL | 0.03 - 0.05 | 5.8 - 9.6 fl oz | Do not exceed 0.15 lb ai/acre per season. Apply with a minimum of 2 gal per acre. PHI = 21 days. |
| <i>RUP</i> | | | |
| carbaryl Sevin | 1 - 1.5 | variable | PHI = 28 days. Repeat application as necessary up to 2 times, but not more often than every 14 days. Do not apply more than 3 lb of active ingredient per acre per crop. |
| chlorpyrifos Lorsban 4E | 0.5 - 1 | 1 - 2 pt | Do not apply more than 6 pt/acre (broadcast basis) or make more than 3 applications per season. Do not allow meat or dairy animals to graze in treated area or harvest treated beet tops as feed for meat or dairy animals within 30 days of last treatment. PHI = 30 days. |
| <i>RUP</i> | | | |
| chlorpyrifos Warhawk | 0.5 - 1 | 1 - 2 pt | |
| <i>RUP</i> | | | |
| chlorpyrifos Yuma 4E | 0.5 - 1 | 1 - 2 pt | |
| <i>RUP</i> | | | |
| methomyl Lannate LV | 0.22 - 0.9 | 0.75 - 3 pint | PHI = 7 days. Do not feed tops to livestock within 30 days of last application. Field re-entry interval is 48 hours. Do not apply more than 4.5 lb active ingredient per acre per crop. Do not make more than 10 applications per crop. |
| <i>RUP</i> | | | |

Sugarbeet

| INSECTICIDE | DOSAGE IN LB AI/ACRE | PRODUCT PER ACRE | RESTRICTIONS ON USE |
|------------------|-------------------------|---------------------|---|
| methyl parathion | 0.25 - 0.38 | 0.5 - 0.75 pt | PHI = 20 days; or 60 days of feeding tops to animals. Do not enter fields for 48 hours after application. |

RUP

RUP - Restricted use pesticide

CUTWORMS

Major cutworm pests of sugarbeets in the Red River Valley include the **Darksided and Redbacked cutworms**. Eggs of both species hatch into larvae during late May and early June. Early detection of larval feeding activity is essential to a good control program. Fields should be checked for wilting or dead plants at frequent intervals during periods of cutworm activity. Cutworms will generally be found within 1 to 2 inches of the soil surface near the base of wilting plants. Most feeding activity occurs at night. Young sugarbeet plants are often cut off near ground level. During periods of dry weather, larvae prefer feeding just below the soil surface as they move along the row. They will feed above the surface on leaves and petioles during periods of excessive soil moisture.

Insecticides generally require some moisture after application for optimal performance. Very light rain showers or heavy dew is generally sufficient. It is desirable to apply insecticides during late afternoon. This maximizes the amount of insecticide material present during the first nighttime hours following application when larvae are often most active. Applications may be repeated as necessary during peak cutworm feeding. Liquid formulations generally provide better control of cutworms, especially during very dry periods. If severe crusting is evident in the field, the crust should be broken up prior to or during the insecticide application.

In 2001, **variegated and black cutworm** infestations caused problems in late July and August. These insects migrate into our region as moths during the spring and are capable of multiple generations within a single growing season. Variegated cutworm larvae have a distinctive row of pale yellow spots down the middle of their backs. They are a climbing cutworm species that primarily feeds in the plant canopy during evening hours. Because they feed above ground, insecticide treatment can be effective in controlling economic populations of variegated cutworms. Black cutworms can feed more than 2 inches below ground in later growth stages when soils are too warm near the surface. Therefore, late-season control of these cutworms can be difficult to achieve.

Threshold:

Cutworm control in young beets is suggested when 4 to 5% cutting of seedlings observed in fields. Control is recommended when a population of 3 to 5 larvae per square foot is observed in late summer when the plant canopy is developed.

| INSECTICIDE | DOSAGE IN LB AI/ACRE | PRODUCT PER ACRE | RESTRICTIONS ON USE |
|-----------------------------|-------------------------|--|--|
| carbaryl Sevin | 1.5 | variable | This treatment is most effective against cutworms feeding on upper portions of plants. Repeat application as necessary up to 2 times but not more often than every 14 days. PHI = 28 days. Do not apply more than 3 lb of active ingredient per acre per crop. |
| chlorpyrifos Lorsban 15G | 1.5 - 2.0 | 10.0 - 13.3 lb (6.6 - 9 oz/1,000 row ft) | Granules must be applied behind furrow openers and ahead of press wheels as a 4- to 5-inch band at planting. Do not apply in-furrow or modified in-furrow. Lightly incorporate with chains or tines behind press wheels for best results. Do not apply granules in direct contact with the seed. Do not make more than 1 application per year. |
| chlorpyrifos Lorsban 4E | 1 | 2 pts | Do not apply more than 6 pt/acre (broadcast basis) or make more than 3 applications per season. Do not allow meat or dairy animals to graze in treated area or harvest treated beet tops as feed for meat or dairy animals within 30 days of last treatment. PHI = 30 days. |
| chlorpyrifos Nufos 4E | 1 | 2 pts | |
| chlorpyrifos Warhawk | 1 | 2 pts | |
| chlorpyrifos Yuma 4E | 1 | 2 pts | |

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| INSECTICIDE | DOSAGE IN LB AI/ACRE | PRODUCT PER ACRE | RESTRICTIONS ON USE |
|---|--------------------------------------|---------------------------------|--|
| esfenvalerate Asana XL | 0.03 - 0.05 | 5.8 - 9.6 fl oz | Use as a seedling foliar spray treatment. Do not exceed 0.15 lb ai/acre per season. Apply in a minimum of 2 gal per acre. PHI = 21 days. |
| | <i>RUP</i> | | |
| esfenvalerate Asana XL | 0.0023 lbs a.i. per 1000 feet of row | 0.45 fl oz per 1000 feet of row | Use for sugarbeets at plant. PHI = 21. Apply as in in-furrow, T-band, or band treatment using a minimum 4" band. See label for specific rate information. Do not exceed 0.05 lbs a.i. per season as an at-plant application. Do not apply more than 0.25 lbs a.i. per acre per season including at-plant plus foliar applications of Asana XL. |
| | <i>RUP</i> | | |
| FOR SUGAR BEETS AT-PLANT ONLY | | | |
| methomyl Lannate LV | 0.45 | 1.5 pt | Apply for variegated cutworm control. PHI = 7 days. Do not feed tops to livestock within 30 days of last application. Field re-entry interval is 48 hours. Do not apply more than 4.5 lb active ingredient per acre per crop. Do not make more than 10 applications per crop. |
| | <i>RUP</i> | | |
| methyl parathion | 0.25 - 0.38 | 0.5 - 0.75 pt | PHI = 20 days; or 60 days of feeding tops to animals. Do not enter fields for 48 hours after application. |
| | <i>RUP</i> | | |
| zeta-cypermethrin Mustang Max | 0.014 - 0.025 | 2.24 - 4 oz | Apply as foliar application or in-furrow using a 3- to 4-inch T-band (band over the open furrow) at planting in a minimum of 3 to 5 gals of finished spray per acre. Do not apply more than 0.075 lb active ingredient per acre per season. Registered for 24 (c) special local need sale and use in sugarbeet in ND (SLN no. ND-030003) and expires before 2012 growing season. |
| | <i>RUP</i> | | |

RUP - Restricted use pesticide

FLEA BEETLES

The flea beetles most frequently found feeding on beets are shiny black in color and about 1/8 inch in length. All flea beetles are oval-shaped and have enlarged hind legs. When approached or disturbed, they readily jump to escape. Flea beetles overwinter as adults and emerge in late April and May. They feed first on suitable weeds such as winter annuals, and move to field crops as weed hosts are depleted and crop plants begin emerging. Foliar feeding injury from flea beetles consists of small, rounded holes, and gives leaves a shot-hole appearance. Severe shot-holing damage can result in stunting, wilting, and even death of seedling plants. Plant responses will be most dramatic during periods of hot and dry weather.

Threshold:

Treatment is usually justified if flea beetles threaten to reduce sugarbeet plant stands to below 35,000 plants/acre.

| INSECTICIDE | DOSAGE IN LB AI/ACRE | PRODUCT PER ACRE | RESTRICTIONS ON USE |
|-----------------------------------|----------------------|------------------|---|
| carbaryl Sevin | 1 - 1.5 | variable | Repeat application as necessary up to 2 times but not more often than every 14 days. PHI = 28 days. Do not apply more than 3 lb of active ingredient per acre per crop. |
| chlorpyrifos Lorsban 4E | 1 | 2 pts | Do not apply more than 6 pt/acre (broadcast basis) or make more than 3 applications per season. Do not allow meat or dairy animals to graze in treated area or harvest treated beet tops as feed for meat or dairy animals within 30 days of last treatment. PHI = 30 days. |
| | <i>RUP</i> | | |
| chlorpyrifos Warhawk | 1 | 2 pts | |
| | <i>RUP</i> | | |

| INSECTICIDE | DOSAGE IN LB AI/ACRE | PRODUCT PER ACRE | RESTRICTIONS ON USE |
|--|----------------------|------------------|--|
| chlorpyrifos Yuma 4E <i>RUP</i> | 1 | 2 pts | |
| esfenvalerate Asana XL <i>RUP</i> | 0.03 - 0.05 | 5.8 - 9.6 fl oz | Do not exceed 0.15 lb ai/acre per season. Apply with a minimum of 2 gal per acre. PHI = 21 days. |
| methomyl Lannate LV <i>RUP</i> | 0.22 - 0.9 | 0.75 - 3 pint | PHI = 7 days. Do not feed tops to livestock within 30 days of last application. Field re-entry interval is 48 hours. Do not apply more than 4.5 pounds active ingredient per acre per crop. Do not make more than 10 applications per crop. |
| methyl parathion <i>RUP</i> | 0.25 - 0.38 | 0.5 - 0.75 pt | PHI = 20 days; or 60 days of feeding tops to animals. Do not enter fields for 48 hours after application. |
| zeta-cypermethrin Mustang Max <i>RUP</i> | 0.014 - 0.025 | 2.24 - 4 oz | PHI = 50 days of harvesting tops or roots. Apply using a minimum of 2 gals of water per acre by air or 10 gals per acre by ground. Do not apply more than 0.75 lb active ingredient per acre per season. Registered for 24 (c) special local need sale and use in sugarbeet in ND (SLN no. ND-030003) and expires before 2012 growing season.) |

RUP - Restricted use pesticide

GRASSHOPPERS

In the Northern Plains, grasshopper eggs hatch normally begins in late April to early May. Most grasshoppers emerge from eggs deposited in uncultivated ground. Sugarbeet growers should expect to find grasshopper feeding first along field margins adjacent to these sites. Beets in fields that follow late-season crops may have hatching throughout the field and should be monitored carefully if adults deposited eggs in the field during the previous fall. Later infestations may develop when grasshopper adults migrate from harvested small grain fields.

Threshold:

Grasshopper control is advised whenever 20 or more adults per square yard are found in field margins or 8 to 14 adults per square yard are occurring in the crop. (For more information on infestation ratings, see the discussion under Grasshoppers in Small Grain Insects)

| INSECTICIDE | DOSAGE IN LB AI/ACRE | PRODUCT PER ACRE | RESTRICTIONS ON USE |
|--|----------------------|------------------------------|--|
| esfenvalerate Asana XL <i>RUP</i> | 0.02 - 0.03 | Low Rate: 3.9 - 5.8 fl oz | PHI = 21 days. A reduced rate has been issued as a state 2 (ee) label. These lower rates are for control of first- and second-stage grasshoppers, ONLY . The reduced-rate application has a range of 3.9 - 5.8 fl oz. The higher rates are for control of grasshopper nymphs larger than 2 nd instar. Do not exceed 0.15 lb ai/acre per season. Apply with a minimum of 2 gal per acre. |
| | 0.03 - 0.05 | High Rate: 5.8-9.6 fl oz | |
| chlorpyrifos Lorsban 4E <i>RUP</i> | 0.25 - 0.5 | 0.5 - 1 pt | Do not apply more than 6 pt/acre (broadcast basis) or make more than 3 applications per season. Do not allow meat or dairy animals to graze in treated area or harvest treated beet tops as feed for meat or dairy animals within 30 days of last treatment. PHI = 30 days. |
| chlorpyrifos Nufos 4E <i>RUP</i> | 0.25 - 0.5 | 0.5 - 1 pt | |
| chlorpyrifos Warhawk <i>RUP</i> | 0.25 - 0.5 | 0.5 - 1 pt | |

| INSECTICIDE | DOSAGE IN LB AI/ACRE | PRODUCT PER ACRE | RESTRICTIONS ON USE |
|--|-------------------------|---------------------|---|
| chlorpyrifos Yuma 4E <i>RUP</i> | 0.25 - 0.5 | 0.5 - 1 pt | |
| methyl parathion <i>RUP</i> | 0.25 - 0.38 | 0.5 - 0.75 pt | PHI = 20 days; or 60 days of feeding tops to animals. Do not enter fields for 48 hours after application. |
| zeta-cypermethrin Mustang Max <i>RUP</i> | 0.014 - 0.025 | 2.24 - 4 fl oz | PHI = 50 days of harvesting tops or roots. Apply using a minimum of 2 gals of water per acre by air or 10 gals per acre by ground. Do not apply more than 0.75 lb active ingredient per acre per season. Registered for 24 (c) special local need sale and use in sugarbeet in ND (SLN no. ND-030003) and expires before 2012 growing season. |

RUP - Restricted use pesticide

SUGARBEET ROOT MAGGOT

This insect overwinters in soil at 6 to 12 inches below the surface as a mature larva in fields that had been planted to sugarbeets during the previous growing season. In late April and early May, overwintered larvae move up to within 3 inches of the soil surface to pupate. In the Red River Valley, fly emergence generally begins in late May and continues for a period of 4 to 6 weeks. Following emergence, flies move to current-year sugarbeet fields and deposit eggs below the soil surface near the base of beet plants. Egg depth is dependent on soil moisture (i.e., eggs are deposited deeper in dry soil conditions). Earlier-seeded (April - early May) plants are usually more vigorous and able to tolerate more injury than smaller, later-planted beets. Fields planted in areas with established maggot populations should be protected with a planting-time insecticide. These treatments will usually be effective with adequate rainfall during June. If dry conditions prevail, a postemergence insecticide application may be needed. This management approach has been shown to be cost-effective during dry growing seasons and under severe maggot infestation levels. Producers should consider the following when deciding if a postemergence treatment is warranted: **soil moisture** - good soil moisture with spring rains should enhance planting-time insecticide performance – extreme rainfall amounts (3 inches within first 24 hours or at least 6 inches if received in 1 or 2 rainfall events within 1 week after planting) may cause movement of the insecticide from the treated target zone; **sugarbeet size** - plants that have 10 to 14 true leaves at peak activity (early- to mid-June) can tolerate moderate levels of feeding injury; **population level** - use sticky-stake traps to monitor for development of damaging population levels.

| INSECTICIDE | DOSAGE IN LB AI/ACRE | PRODUCT PER ACRE | RESTRICTIONS ON USE |
|--|-------------------------|--|--|
| aldicarb Temik 15G ^a <i>RUP</i> | 1.0 - 2.1 | 6.7 - 14 lb (4.5 - 9.5 oz/1,000 row ft) | PHI = 90 days for root harvest or within 120 days of top harvest for livestock feeding. Apply at planting in a 2- to 6-inch band or by modified in-furrow. Lightly incorporate banded applications. Do not use in consecutive years or in suspected aggressive soils. For postemergence treatment, apply granules to both sides of row and incorporate immediately. Do not use tops as food for humans. Do not apply more than 33 pounds per acre per year. Treated areas must be posted with warning signs. |
| chlorpyrifos Lorsban 15G ^b <i>RUP</i> | 1.0 - 2.0 | 6.75 - 13.3 lb (4.5 - 9 oz/1,000 row ft) | Granules must be applied behind furrow openers and ahead of press wheels as a 5-inch band at planting. Do not apply in-furrow or modified in-furrow. Lightly incorporate with chains or tines behind press wheels for best results. Do not apply granules in direct contact with the seed. The low application rate should be considered if low infestation levels are expected. If low rate is applied, monitor for higher than anticipated adult fly numbers. May be applied postemergence in accordance with label directions. Do not make more than 1 application per year. |
| chlorpyrifos Nufos 15G ^b <i>RUP</i> | 1.0 - 2.0 | 6.75 - 13.4 lb (4.5 - 9 oz/1,000 row ft) | |

| INSECTICIDE | DOSAGE IN LB AI/ACRE | PRODUCT PER ACRE | RESTRICTIONS ON USE |
|--------------------------------------|----------------------|---|--|
| chlorpyrifos Lorsban 4E | 0.25 - 1 | 0.5 - 2 pt | Apply in 5- to 7-inch bands or as a broadcast treatment.. When banding, apply using a minimum of 7 gals of finished spray per acre and do not reduce the dosage for banded applications (i.e., apply the specified broadcast dosage within the band) . Time treatments from 7 days before to 3 days after peak adult fly activity. For best results, band-applied treatment should be lightly incorporated, either mechanically or with irrigation. If an organophosphate insecticide was used at planting, make no more than 1 application any chlorpyrifos product per season when adults are active. Do not apply more than 6 pt/acre (broadcast basis) or make more than 3 applications per season. Do not allow meat or dairy animals to graze in treated area or harvest treated beet tops as feed for meat or dairy animals within 30 days of last treatment. PHI = 30 days for beet roots and tops. |
| <i>RUP</i> | | | |
| chlorpyrifos Nufos 4E | 0.5 | 1 pt | |
| <i>RUP</i> | | | |
| chlorpyrifos Warhawk | - | 1 1/3 - 2 pts | |
| <i>RUP</i> | | | |
| chlorpyrifos Yuma 4E | - | 1 1/3 - 2 pts | |
| <i>RUP</i> | | | |
| esfenvalerate Asana XL | 0.03 - 0.05 | 5.8 - 9.6 fl oz | Use as foliar spray for control of adult flies only. Do not exceed 0.15 lb ai/acre per season. Apply with a minimum of 2 gal per acre. PHI = 21 days. |
| <i>RUP</i> | | | |
| ADULT FLIES ONLY | | | |
| phorate Thimet 20G ^b | 1.0 - 1.5 | 4.9 - 7.5 lb (3.2 - 5 oz/1,000 row ft) | Apply in a 5- to 7-inch band over the row as a postemergence treatment and incorporate lightly into soil. Do not apply in a broadcast. Do not make more than 1 application per year. PHI = 30 days. Treated areas must be posted with warning signs. |
| <i>RUP</i> | | | |
| terbufos Counter 15G ^b | 0.9 - 1.8 | 5.9 - 11.9 lb (4 - 8 oz/1,000 row ft) | Apply in a 5-inch band or by modified in-furrow at planting time. Do not place in direct contact with seed. Counter 15G may also be banded over the row as a postemergence treatment. Planting-time and postemergence treatments should be incorporated lightly into soil. Only 1 application may be made per year. Do not harvest sugarbeets or feed tops to livestock within 110 days after application. Treated areas must be posted with warning signs. |
| <i>RUP</i> | | | |
| terbufos Counter CR ^b | 0.9 - 1.8 | 4.5 - 8.9 lb (3 - 6 oz/1,000 row ft) | Apply in a 5-inch band or by modified in-furrow at planting time. Do not place in direct contact with seed. Counter CR may also be banded over row as a postemergence treatment. Planting-time and postemergence treatments should be incorporated lightly into the soil. Only 1 application may be made per year. Do not harvest sugarbeets or feed tops to livestock within 110 days after application. Treated areas must be posted with warning signs. |
| <i>RUP</i> | | | |

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^a Temik 15G can be applied once at planting and up to two postemergence treatments can be applied per season; however, total product applied per acre per season cannot exceed 33 pounds.

^b Counter 15G, Counter CR, Lorsban 15G, Nufos 15G and Thimet 20G may only be applied once per year.

TARNISHED PLANT (LYGUS) BUGS

Tarnished plant bugs (TPB) have caused late-season injury to Red River Valley sugarbeets since 1998. Most TPB feeding injury appears on new leaves and stems emerging from the crown region of beet plants. Feeding symptoms include curling and wilting of leaves, feeding scars on leaf petioles, and blackening of the new growth near the center of the crown. Multiple generations of TPB can develop during the growing season. Populations usually build up in other host plant habitats, then adults migrate to beets in late-July to mid-August. TPB is a sporadic pest in this region and its biological profile is not understood well enough to anticipate when or where significant infestations may occur in the future.

Threshold:

Treatment with an insecticide may be justified if an infestation **exceeds** 1 Lygus bug per plant (adults and nymphs combined) after checking 30 to 50 plants in a field. Significant economic loss is likely to occur if an infestation reaches 4 Lygus bugs per plant. Lygus bugs usually infested beets during August. Therefore consideration of pre-harvest interval may be a critical factor in choosing an insecticide. A number of insecticides that are approved for use on sugarbeets have TPB or *Lygus* as a target pest in their labels for other crops; however, TPB is not listed as a target pest in the *sugarbeet* portion of those labels. **These insecticides include Asana, carbaryl (Sevin), Lannate, Lorsban, and malathion. It is legal to apply an insecticide if it is labeled for use in the crop;** however, if the target pest is not listed for that crop, efficacy is not implied by the manufacturer and growers who choose to use the product assume their own liability for any unsatisfactory performance.

| INSECTICIDE | DOSAGE IN LB AI/ACRE | PRODUCT PER ACRE | RESTRICTIONS ON USE |
|-----------------------------------|----------------------|------------------|--|
| naled Dibrom 8 Emulsive | 0.94 | 1 pt | Apply by air in 1 to 5 gals of water per acre. Do not apply more than 5 pt per acre per season. PHI = 2 days. Issued by manufacturer as a FIFRA Section 2 (ee) recommendation for use within the following states: ND, MN, MT, WY, NE, SD, CO, ID, WA, and OR |
| chlorpyrifos Lorsban 4E | 0.5 | 1 pt | Do not apply more than 6 pt/acre (broadcast basis) or make more than 3 applications per season. Do not allow meat or dairy animals to graze in treated area or harvest treated beet tops as feed for meat or dairy animals within 30 days of last treatment. PHI = 30 days. |
| <i>RUP</i> | | | |
| chlorpyrifos Warhawk | 0.5 | 1 pt | |
| <i>RUP</i> | | | |
| chlorpyrifos Yuma 4E | 0.5 | 1 pt | |
| <i>RUP</i> | | | |
| methomyl Lannate LV | 0.3 - 0.45 | 1 - 1.5 pt | PHI = 21 days. Do not graze or feed tops to livestock within 30 days of last application. Field re-entry interval is 48 hours. Do not apply more than 4.5 lb active ingredient per acre per crop. Do not make more than 10 applications per crop. Allow 5-7 day interval between applications. Section 2 (ee) label for use sugarbeet for the control of Lygus bugs in ND and MN. |
| <i>RUP</i> | | | |

RUP - Restricted use pesticide

WIREWORMS

Wireworm larvae are smooth, somewhat hard-bodied worms varying in length from ½ to 1 ½ inches long. Their color can range from yellowish-white to a light copper color. Wireworms feed on a wide variety of crops and weeds, and are generally difficult to detect and control. They tend to be more prevalent in light-textured soils or in soil that has not been in crop production for several years. Fields that had grassy weed escapes during the preceding season are also at risk. Frequent cropping and working the soil helps reduce wireworm problems.

Threshold:

Currently, there is no established threshold for wireworms in sugarbeet. The following insecticides labeled for sugarbeet root

maggot control will usually provide adequate protection from wireworm injury. Check with your company field representatives before treating sugarbeet seed with an insecticide. Refer to product labels for more information. Please the seed treatment section in the introduction for more information.

| INSECTICIDE | DOSAGE IN LB AI/ACRE | PRODUCT PER ACRE | RESTRICTIONS ON USE |
|---|---------------------------------|--|---|
| chlorpyrifos Lorsban 15G (suppression only) | 1.5 - 2 | 10 - 13.3 lbs or 6.5 - 9 oz/1,000 row ft | Lorsban 15G can provide suppression of low to moderate infestations at these rates. Do not apply in-furrow or modified in-furrow. Lightly incorporate with chains or tines behind press wheels for best results. Do not apply granules in direct contact with the seed. Do not make more than 1 application per year. |
| terbufos Counter 15G <i>RUP</i> | 1 - 1.8 | 5.9 - 11.9 lbs or 4 - 5 oz/1,000 row ft | Apply as a 5-inch band treatment at planting time and incorporate lightly into soil. Do not place in direct contact with seed. Only 1 application may be made per year. Do not harvest sugarbeets or feed tops to livestock within 110 days after application. Treated fields must be posted. |
| zeta-cypermethrin Mustang Max <i>RUP</i> | 0.025 | 4 oz | Apply in-furrow or in a 3- to 4-inch T-band (band over the open furrow) at planting in a minimum of 3 to 5 gals of finished spray per acre. Do not apply more than 0.075 lb active ingredient per acre per season. Registered for 24 (c) special local need sale and use in sugarbeet in ND (SLN no. ND-030003) and expires before 2008 growing season. |

RUP - Restricted use pesticide