

## False Chinch Bug on Potato

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False chinch bugs appear in Nebraska when potatoes are near small grains or alfalfa. Monitor July harvests; apply insecticides if large-scale injury occurs.

The term “chinch bug” refers to several species; “false chinch bug” refers only to *Nysius raphinus*. Although considered a minor pest, early-season infestations can cause economic loss in potato. False chinch bugs have been found in potato fields throughout Nebraska, from O’Neill to Imperial. While potato is not a common host, in Nebraska false chinch bugs move to potatoes from neighboring fields of wheat or alfalfa. After harvest in July the false chinch bugs will leave these fields, looking for cool, moist conditions and succulent plants. This makes a healthy, irrigated potato field highly attractive.

False chinch bugs overwinter as nymphs and adults under plant debris near winter annuals such as mustards, which also act as hosts. When the weather warms in spring, eggs are laid in loose soil or soil cracks and hatch in four days. Nymphs feed for about three weeks then reach adulthood. Adults live for several weeks congregating on hosts.

There are three or four generations per season with peak populations in July and early August.

This insect has a wide host range. Crop hosts include small grains, alfalfa, canola, sometimes sugarbeets, and in Nebraska, potatoes near wheat or alfalfa fields. Wild hosts include mustards, kochia, pigweed, Russian thistle, and sagebrush. Heavy populations can build up on these hosts.

### What Injury do False Chinch Bugs Cause in Potato?

When looking across an infected potato field, plants will appear to have windburn to upper young leaves (*Figure 1*). These leaves first appear wilted and possibly slightly curled while the rest of the plant appears normal; shortly, they will turn brown along the edges and curl (*Figure 2*). The browning will progress with the leaves turning darker and curling tighter until they dry out and die (*Figure 3*). The time between infestation and leaf death can be a few days. Fully formed leaves are not affected by false chinch bugs; only new growing leaves are attacked. When infested leaves are disturbed, hundreds of adults may suddenly emerge from the leaflet.



Figure 1. Potato leaflets with injury from false chinch bugs.



Figure 2. Potato leaf showing the start of curling due to false chinch bugs.



Affected areas can be field edges, spots, strips, or swathes through the field, and weedy areas. Adults damage plants by sucking water and sap from the stem and veins. These insects prefer wheat and alfalfa over potato but when these crops are being cut and harvested in July, false chinch bugs will move to nearby potato fields, sometimes by the millions and after traveling several miles. In general, the window for potato damage is about three weeks. Yield losses may occur if large field areas are damaged during early to mid-tuber bulking when young leaves contribute water and nutrients. Although not reported, some tuber deformation could result from a severe attack at a critical growth stage and this could interfere with water movement.

### What do False Chinch Bugs Look Like?

False chinch bug adults are 1/8 inch long, cylindrical, and brownish gray with silvery gray wings (Figure 4). They congregate on plant leaves where they tap into the vascular system (Figure 5). As many as 100 adults may be on a single leaflet, often within the curl. Adults, which crawl or fly to other plants after killing the plant top, seem to be the primary concern on potatoes. The nymphs have a brownish-gray head and thorax with a light tan longitudinal stripe and a light tan abdomen with some tiny reddish spots. Nymphs are smaller than adults and are wingless.

### How are False Chinch Bugs Scouted?

Adults prefer cooler temperatures and are seen on leaves in the evening (approximately 6-8 p.m.) and sometimes in the early morning. During the day, they crawl on the ground under the canopy and into the soil. They are difficult to see because their brown coloring blends in with the ground. This suggests that the best application of a chemical treatment is by air in the evening.

### How Can False Chinch Bugs be Controlled?

The best time to apply control products is in the first few days after nearby wheat or alfalfa is harvested, when the false chinch bug will be looking for a new temporary home. After a couple weeks, they will leave potato, looking for a preferred host. The damage to young potato leaves is permanent; however, after the false chinch bugs depart, any new leaves will not be affected.



Figure 3. Leaf death due to false chinch bugs on a potato vine.



Figure 4. Adult false chinch bugs collected from a curled potato leaf.

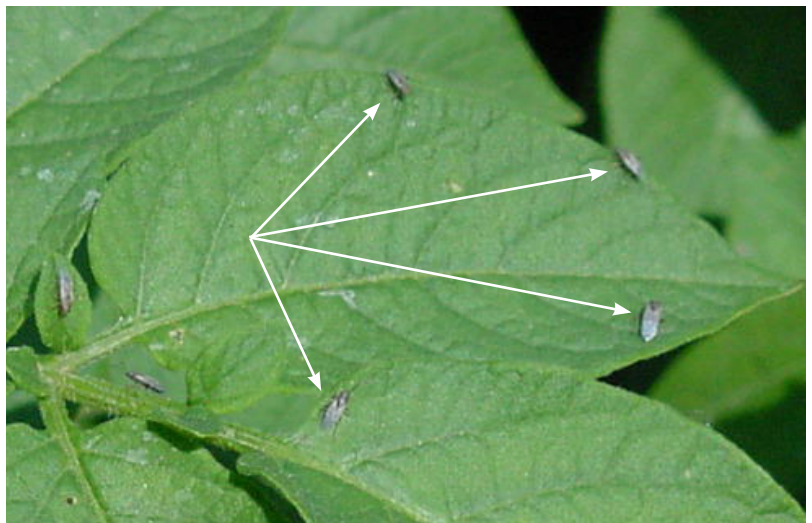


Figure 5. Adult false chinch bugs on a potato leaf.

## False Chinch Bugs in Potatoes

### Appearance

- Adults are 1/8 inch long and brownish-gray with silvery wings.

### Life Cycle

- Overwinters in debris near winter annuals.
- Three to four generations per season.
- Population peaks in July and early August.
- Moves into potato fields after harvest of nearby alfalfa and small grains.

### Damage

- Wilting and curling of young top leaves.

### Control

- Scout after July harvest of alfalfa and grains.
- Treat potatoes at early tuber bulking if the extent of damage warrants application.
- Treatment is usually applied when other insect control measures are being taken.
- Multi-spectrum insecticides used for more serious pests are effective.

Pyrethroid insecticides were suggested in Colorado based on work on “true chinch bugs” (*Blissus leucopterus*); however, a few growers reported poor to fair results on false chinch bugs. Dimethoate, an inexpensive general foliar insecticide, has been effective. Other effective products may include methamidophos and imidacloprid. The latter is labeled for control of potato psyllids.

There is no established threshold for economic damage or for treatment of false chinch bugs in potato. It depends on the size of the field area infested and the stage of the potato when infested.

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