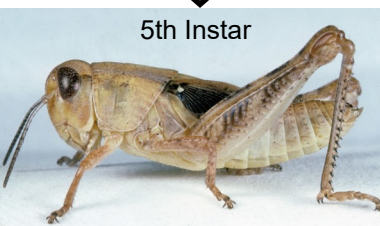
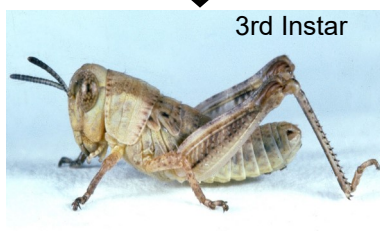


# Commonly Found Grasshoppers in the Peace Region



## Introduction

Grasshopper populations in the Peace Region have been linked to some serious damage for many producers and ranchers. Either destroying crops or outcompeting cattle for food sources, Grasshoppers are sometimes the worst pest to have. But there are some Grasshoppers in the region that are not considered to be a pest for reasons as follows. Either their populations don't generally reach

levels that cause enough damage or they forage on a different food source, which doesn't effect the producers crop or the ranchers cattle. In this factsheet you will find the two most commonly found pest species, a potential pest species and also the most commonly found non pest species along with key ID features in both their nymphal stages and adult stage.

## Bruner Spurthroated Grasshopper (*Melanoplus Bruneri*)

Has been noted to have the highest population among pest grasshoppers in the BC Peace Region on a 2 year life cycle. Key ID features are:

### Instar

- The 1<sup>st</sup> instar is quite dark in with three dark bands on the inside femurs of the hind legs
- 1<sup>st</sup> instar tends to emerge in the first two weeks of June
- Spurthroated nymphs (2nd –5th) continue to have dark bands
- Male instars are usually spotted darker brown and females are green
- Spurthroated Grasshoppers take 31-35 days to mature from 1st instar to adult.
- Venter of the abdomen (2nd –5th) is olive or yellowish green.

### Adult

- Forewings are generally longer and extend well past the abdomen, and may have centrally located spots.
- Oblique dark bands on the hind femora (thigh) and hind tibia (calf) is usually pink or red but can be pale green.



### Information Contacts

Keith Uloth:

250-613-0761

pest@bcgrain.com

Talon Gauthier:

250-219-3944

coordinator@peaceforageseed.ca



## The Seed Head

is published by

## Peace Region Forage Seed Association

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**Migratory Grasshopper Potential Economic Damage:**

- Bruners prefer to feed on forbs (flowering plants) and grasses. But it should be noted that their diet can change drastically as summer progresses to them feeding on other available plants.
- Bruners Spurthroated Grasshoppers have been known to fly 20-100 feet at one time.
- Has been recorded to have caused economic damage to alsike, timothy, alfalfa and oats in the western provinces

**Two Striped Grasshopper (*Melanoplus bivittatus* Say)**

Second highest population among pest species in the Peace Region.

ID Features:

**Instar**

- Compound eye brown with many light tan spots and no dark bands.
- Front of head tan or green with dark spots; line of dark spots on carinae (ridges along back) of frontal costa (forehead).
- Pronotum with light, horizontal stripe at top of lateral lobe; above the stripe a fuscous or brown band at the edge of pronotal disk (hard plate in chest area of the back).
- Generally colored tan or green and spotted, without light crescent below compound eye.
- Hind femur (thigh) with black stripe entire, not interrupted by pale band. Stripe fills upper medial area of hind femur except at proximal end and encroaches slightly on the lower medial (lower middle) area.
- Hind tibia green or buff with spines or tips of spines black. Front (anterior edge) of tibia fuscous (dark brown approaching black in colour).
- General color green or tan.

**Adult**

- Two pale yellow stripes extend from back of the eyes to tip of the forewing
- Black stripe running along the outer side of its yellow femurs

**Two-Striped Grasshopper Potential Economic Damage:**

- The two-striped grasshopper is a major crop pest causing much damage to small grains, alfalfa, and corn.
- During outbreaks, it may completely destroy crops.
- A population of 10 adults per square yard in a corn field will defoliate the crop.
- Experiments indicate that in feeding on spring wheat the two-striped grasshopper wastes six times as much foliage as it eats.

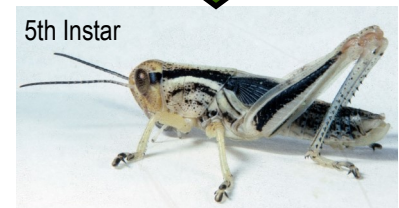
**References:**

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<http://idtools.org/id/grasshoppers/index.php> [Accessed December, 2016]

Grasshopper Monitoring and Control in British Columbia

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### Clearwinged Grasshopper (*Camnula pellucida*)

Has been found in the BC Peace Region but numbers are significantly low making it a low risk potential pest. Key ID Features:

**Instar**

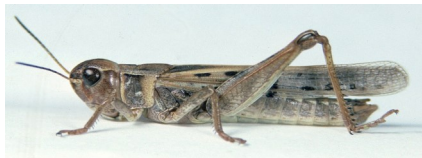
- Head with lateral foveolae triangular (depressions located between eyes on the forehead) .
- Usually a dark bar crosses transversely across front of head under antennal sockets, across lower part of compound eyes, and onto sides of head.
- Pronotum with median carina low but uniformly elevated; median carina entire (without notch) in early instars, notched once in front of middle in the older instars.
- Pronotum (middle section of body) with lateral carinae (ridges) clearly defined.
- 1st to 3rd instar hind tibia dark, 4th and 5th instars dark or tan.

**Adult**

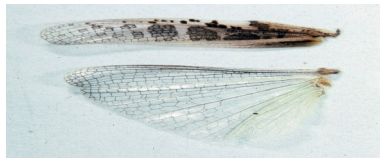
- Medium size, yellow to brown.
- Possess mottled forewings (visible) and transparent hindwings (underneath).
- The forewings have along their angles light stripes that in the resting grasshopper with closed wings converge near the middle.
- First instar nymphs are strikingly colored cream, tan, and black.

**Clearwinged Grasshopper Potential Economic Damages:**

- A severe pest of small grains and grasses. It is most destructive early in the season when it often completely destroys perennials and overwintered annuals. It is not known to attack pulse crops.
- Outbreaks on rangelands may devastate grass forage in areas as large as 2,000 square miles.
- The clear-winged grasshopper is a small species and infestation of one young adult per square yard reduced yield 1 pound per day over 1 acre.



Adult Male Clear-winged Grasshopper (*Camnula pellucida*)



Forewing Mottled with colour Secondary wing is clear



1st Instar



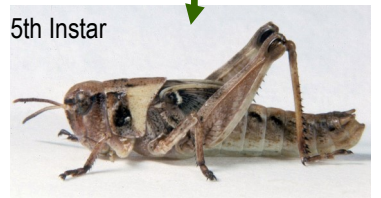
2nd Instar



3rd Instar



4th Instar



5th Instar

### Common Non-Pest Species

Non-pest Grasshoppers are species of grasshoppers that are considered not to do large amounts of economic damage and may require quite larger populations to be considered in the pest category. But it is hard for them to achieve that population due to competition, size or other factors.



Dawson's Grasshopper



Large Headed Grasshopper

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<http://www.lovelandproducts.com/product/matador-0> [Accessed December, 2016]

## Meadow Grasshopper (*Chorthippus curtipennis* (Harris))

### Instar

- Head with strongly slanted face; antennae filiform (threadlike) and flat; lateral foveolae (depressions in the forehead) indistinct in instars I and II, oblong and distinct in instars III and IV.
- Brown stripe runs alongside of body from behind compound eye to nearly end of abdomen in instars I and II; face, sides of head, and lobes of pronotum (side of body) are usually solid green or yellow in instars III and IV.
- Pronotum with lateral carinae (ridges) nearly parallel in instars I and II; lateral carinae slightly converging on prozona (area just before the wings) in instars III and IV.
- Hind femur with medial area light brown to brown.

### Adult

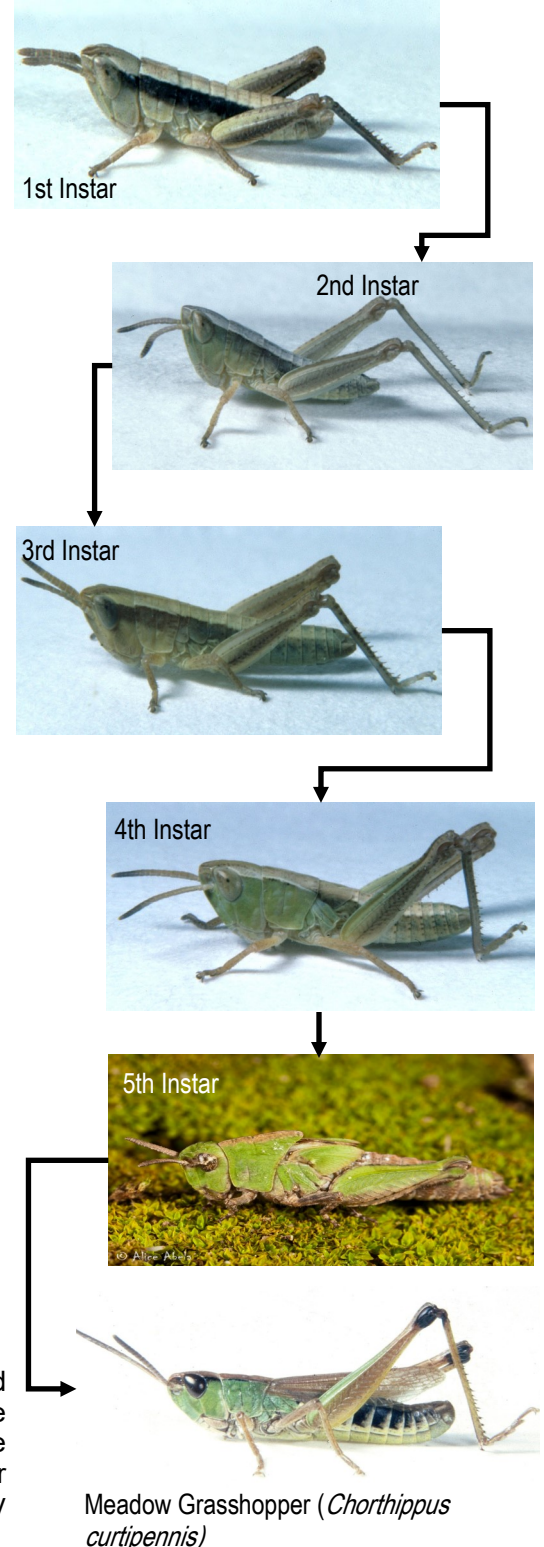
- Meadow grasshoppers are medium-sized.
- The sides of their body are colored green, tan, and the underside is yellow or tan.
- The head has a strongly slanted face; the antennae are filiform and become slightly thick and black toward the end.
- The lateral foveolae (forehead area) are oblong and visible when viewed from above.
- The pronotum (the dorsal area behind the head) has a low and distinct median carina and distinct lateral carinae, all of which are cut once behind middle of the disk.
- Wings of the male are long, usually reaching the end of the abdomen; wings of the female are short, covering half to three-quarters of the abdomen.
- The medial area of the hind femur is tan or brown and unbanded, the knee is black; hind tibia (calf) is usually yellow, though sometimes orange or red.

### Meadow Grasshopper Potential Damage:

- Although the meadow grasshopper feeds on valuable forage grasses, it has not been reported as causing significant damage.
- Yet, as part of an assemblage of species, this grasshopper undoubtedly contributes to the damage caused by a heavy infestation.

### Conclusion:

There are other pest and non-pest Grasshopper species potentially found here in the Peace region, but the species mentioned above are more frequently found with monitoring. There are many forms of integrative pest management techniques in case a outbreak does occur. For further information in regards to economic thresholds, forms of control and any other questions please feel free to ask.



Compiled & Circulated by: Keith Uloth and Talon Gauthier

These projects are funded and delivered by the Peace Region Forage Seed Association with funding Canadian Agriculture Partnership, a federal-provincial-territorial initiative, and the British Columbia Grain Producers Association

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