Watch out for GRASSHOPPERS!

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Fig 1-clear-winged

Fig 2- clear-winged adult grasshopper

Clear-winged and Redlegged

Grasshoppers (short-horned, family Acrididae) arrived in the Willamette Valley in large numbers in Aug -Sept 2016. Two species have been identified in agricultural fields. Clear-winged grasshoppers have been prevalent in the south-Valley and isolated cases of redlegged grasshoppers in the mid-Valley.

Physical Characteristics:

***Clear-winged grasshopper** (*Camnula pellucida*) Small species with mottled leathery forewings, transparent hindwings. (**Fig 1 & 2**)

***Redlegged grasshopper** (*Melanoplus femurrubrum*) Overall yellowish coloring on belly, strong banding on the abdomen, herring-bone pattern on the hind femur, reddish hind tibiae, and only faint spotting on the tegmina (front wings). (**Fig 3**)

Documented HOSTS… clover, tall fescue, orchardgrass, perennial ryegrass, small grains, vegetables, pastures, bromes.

Fig 3. Redlegged grasshopper

Damage. Look for notching, stripping, chewing holes on any and all plants; damage similar to armyworms and cutworm chewing.

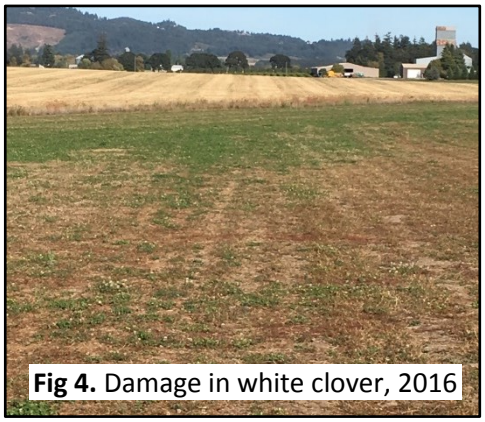


Fig 4. Damage in white clover, 2016

Life Cycle. These species have overlapping generations; eggs are laid in fall; eggs overwinter in protective tubular pods under the soil and hatch in spring. Both grasshoppers can fly which allows them to quickly disperse and find new habitats.

Estimating numbers in fields

When scouting, first check for numbers of grasshoppers per square yard (7-12) and the number of young grasshoppers (**Fig 5**). Scout field borders and walk through a field to estimate the number of grasshoppers per square yard as they jump in front of you. A yard measuring stick can help visualize a square yard, just above the crop.

Management Options

Many insecticides (see below) have activity on grasshoppers. However, they are most effective against young grasshoppers. Nymphs are wingless and are found hopping on the ground instead of flying. Grasshoppers are active during the day and rest on the tops or within grasses and weedy areas.

Chemical Control

Estimated Threshold: 7-12 GH per square yard

Some pesticides listed for grasshopper control:

cyfluthrin (**Baythroid XL**)
zeta-cypermethrin (**Mustang MAX**)
bifenthrin (**Brigade 2EC and WSB**)
chlorpyrifos (**Lorsban**)
carbaryl (eg. **Sevin**)
organophosphate (**Malathion**)
lambda-cyhalothrin (**Warrior**)

*See the PNW Insect Management Handbook for current insecticide registrations per crop type

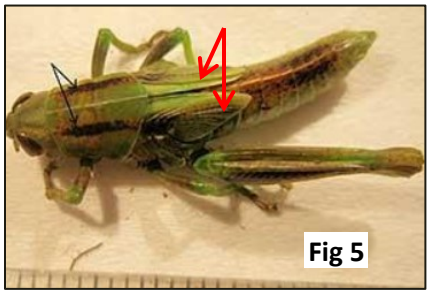


Fig. 5. Young grasshoppers have short wing pads, so can't fly, only hop or crawl. The youth pass through 5-6 instars (stages), during which they feed, molt their skins before turning into a mature grasshopper with wings. The winged grasshoppers will lay eggs in the fall.

References

→Univ. of Nebraska Grasshopper Identification guide http://extensionpublications.unl.edu/assets/pdf/ec1569.pdf

→A key to the grasshoppers of North America can be found at Grasshoppers of the Western United States Edition 3: http://keys.lucidcentral.org/keys/v3/grasshopperE3/Media/frmsetRLGH.htm

Cultural Practices

Tillage in late fall can destroy grasshopper egg pods, but is not a means to control feeding grasshoppers.

Strips of green foliage (**Trap Strips**) have been used to attract grasshoppers to a small area where they can be more easily treated.

Environmental Conditions

If **warm spring temperatures**, premature hatching of eggs can result in heavy mortality.

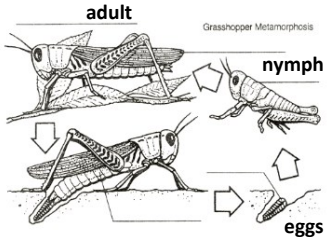
Biological Agents

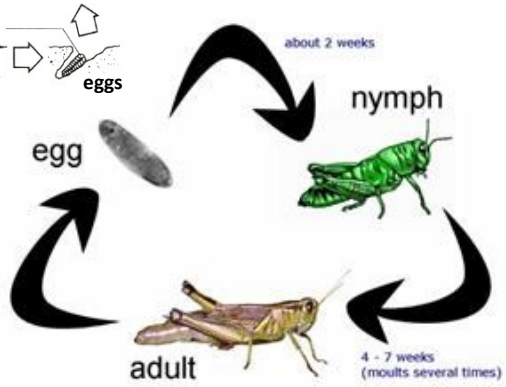
Birds will eat grasshoppers.

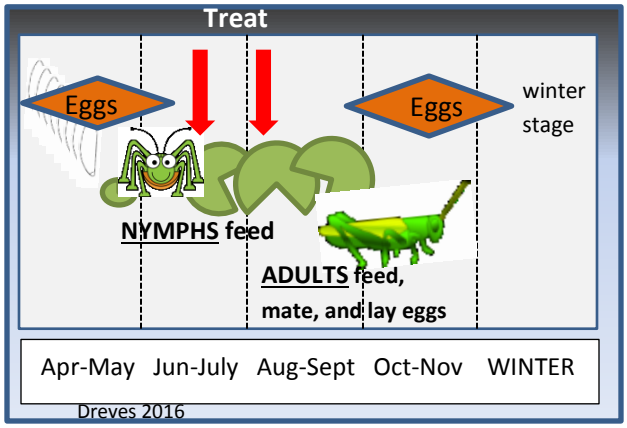
Diseases (e.g., Nosema, fungus, bacteria) can keep populations down.

Eggs can die from **mites, parasitic wasps** and **flies.**

Females lay eggs in pods in soil in late fall.







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