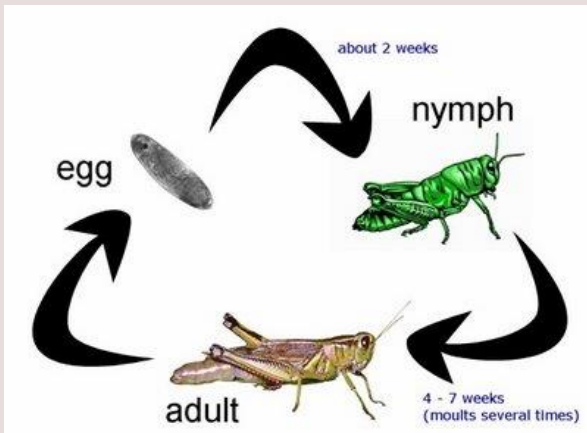
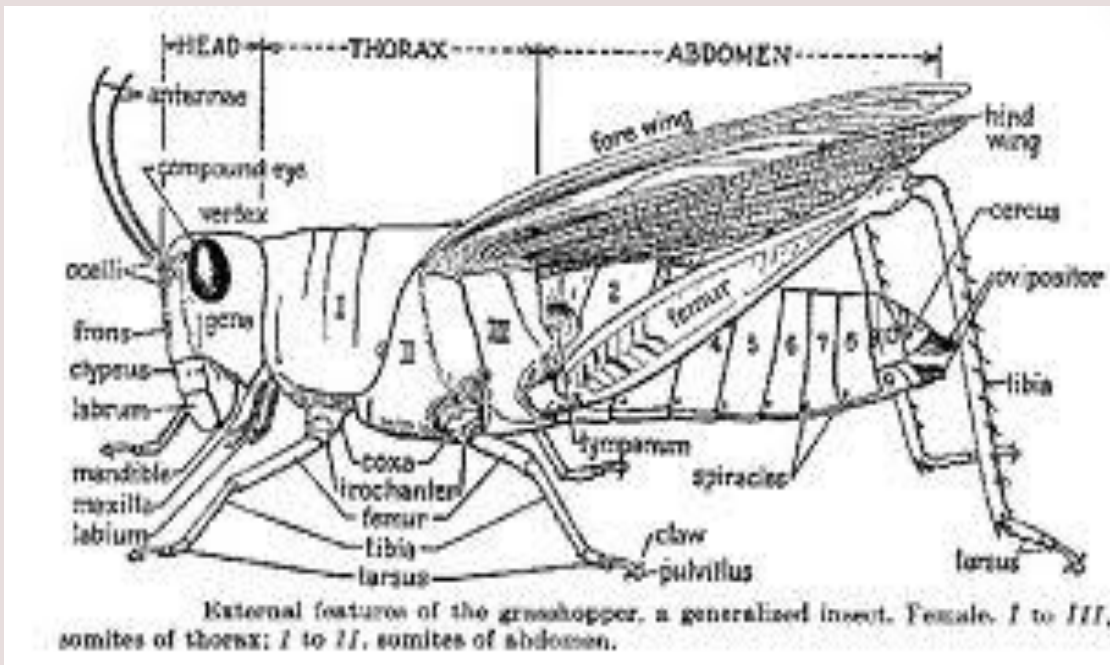


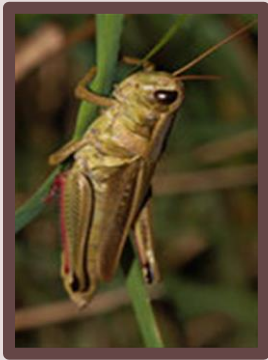
# Grasshoppers



## Biology

The morphology of a grasshopper begins as an egg, then nymph (looks like adult but without wings and smaller) and finally an adult. Females oviposit or lay eggs into the soil in pods. Each pod can contain 4-40 eggs and they can lay up to 25 egg pods. Most species overwinter as an egg, emerge in spring and generally go through a series of 5 instars where they shed their exoskeleton and essentially grow into the next size larger. Wing pads and genitalia develop with each instar until they morph into a winged adult capable of breeding. Grasshopper can actually be beneficial until their populations exceed certain thresholds. Some species are beneficial regardless of numbers.





**2012**

**The District plan at this time  
for 2012 includes aerial  
application on mountain  
properties.**

**2011**

**Due to the apparent success of the program in  
2010, Grasshopper populations warranted  
little spraying in 2011. The District  
administered a small ground treatment  
program for a few hot spots. The cost for  
control was \$216.21 paid by landowners and  
the District \$864.83 for the year.**



# 2010



**Results-** A survey of all participants in the program showed a 92% favorable response to the overall effectiveness to the program; with a 59% response out of 329 participants. Areas where we did not have grasshopper control such as properties that did not sign up or no spray areas around building and water were very apparent. With the abundance of moisture this year, we did have some efficacy issues with the Dimilin using RAATs in the heavier vegetation and also problems in cropland situations. We also had a very valuable learning experience in that, due to the problems encountered this year, the District will use those lessons to guide programs in the future. Funding from the EIMG was critical in helping the District offset some of the cost to the landowner and help pay for tracts of land that may not have been treated otherwise. Reported results of the Semaspore treatments were mixed, which may be attributed to application errors.

The *truly amazing* part of this project was the spirit of cooperation amongst all partners, exemplified by the large blocked up areas shown in Appendix A. There were only 2 landowners that opted out, justified by the lack of hopper counts due to treatment from 2009. A big thank goes to the Governors office, Wy Dept of Ag, Wy State Lands, BLM, Wy Game & Fish, APHIS, NE Wy Sage Grouse working group, the four neighboring counties and the over 400 landowners that helped make the program a success. Also, special thanks should go to the applicators, Dean McClain of Ag Flyers and the crew at Lindell Aerial Applicators, for their professionalism and a job well done!

### **The Numbers**

- District treated acres: 502,283=1,004,566 Net: 475,483=950,966
- APHIS treated acres: 371,130=618,550
- Total cost for Jo Co: \$1,756,854.70
- District share: \$1,133,562.90
- Small acreage program & retreat acres cost: 1138 acres protected; \$6,329.87 District cost