

## LYGUS BUG INJURY IN LENTIL FIELDS AND THE OCCURRENCE OF CHALKY SPOT

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Recently, R. J. Summerfield and F. J. Muehlbauer, USDA, ARS at Washington State, implicated lygus bugs as the causative agent of "chalky spot syndrome" in lentils. Seed lots containing chalky spot and other damaged seeds in excess of 2 percent are graded Number 2 lentils and those in excess of 3.5 percent are given a sample grade and discounted in the market place. Summerfield and Muehlbauer also suggested that economic yield loss was probable based on growth chamber studies. They reported increased prevalence of shrivelled, unfilled pods (13-15%); promoted abscission of immature pods on "Chilean" lentil (22%); and increased seed abortion (4-20%) by caged lygus onto pot-grown plants in comparison with lygus-free controls.

We monitored lygus bug populations in 21 northern Idaho and eastern Washington lentil fields by sweep-netting. A field sample consisted of 75, 180° sweeps and was taken twice a week during bloom, pod set and pod filling. Portions of six fields were treated with malathion (1 lb ai/a) applied by air in 5 gallons of water. At harvest combined seed samples were taken near sampling sites within fields and in treated and untreated field portions. Compositated field samples were assessed for percent chalky spot by the Federal Grain Inspection Service, USDA at Moscow, ID.

Adult lygus bug populations generally occurred at low levels (near 5/25 sweeps) and did not fluctuate appreciably as the season developed. At the end of the season adult lygus increased in number in the majority of fields. In 3 instances populations exceeded 1 lygus/sweep but these high numbers were observed for only a short time and were related to nymphs changing to adults within the fields. Numbers of lygus nymphs began increasing about the time first pods were formed, reached peak populations within two weeks and then declined as they changed to adults and crop maturity occurred. Nymphal lygus bug populations occurred at levels of less than 15/25 sweeps in 5 fields; near 25/25 sweeps in 6 fields; near 50/25 sweeps in 6 fields and more than 75/25 sweeps in 3 fields. The higher and lower amounts of chalky spot in lentil seed was associated with the highest and lowest field infestations of lygus bugs but there were notable exceptions. One field had relatively low season-long lygus numbers but had twice the amount of chalky spot of other fields studied.

Chemical treatments were effective in reducing lygus bug numbers to low levels (less than 2/25 sweeps) and reduced the percent chalky spot in seed from treated field portions when compared to untreated field areas. However, the amount of reduced chalky spot associated with treatment was not economically important in most cases. It appears that chemical applications, applied when lygus populations were increasing or had peaked in number, were too late to be of much value in preventing the occurrence of chalky spot.