

was *conspicuous* phenology

### Effect of *Bt* on phenology of obliquebanded leafroller and pandemis leafroller

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*Abstract:* The effect of *Bt* on the developmental rates of OBLR and PLR was investigated. We found that PLR were more sensitive to *Bt* and showed reduced growth rate at 1% of the field rate. OBLR were less sensitive, and the effects were about the same at 1, 2, or 4% of the field rate. For both species, the instar following the ingestion of *Bt* had the slowest developmental rate, and the effect decreased as caterpillars aged. PLR developmental time to adult was slowed 23-30% for caterpillars treated as 3<sup>rd</sup> instars and 6-36% for 4<sup>th</sup> instars. OBLR treated as 3<sup>rd</sup> instars had a developmental time about the same as control insects except for the 4% field rate treatment, where developmental time to adult was increased by about 8.5%. When treated as 4<sup>th</sup> instars, developmental time to adult was 13-23% longer than control caterpillars.

Sublethal doses of *Bt* to larvae  
delay flight (Peak) 200-250 DD

PLR in 3<sup>rd</sup> more S to *Bt*. than OBLR, vice versa for

4<sup>th</sup>.