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COOPERATIVE EXTENSION

To Stop or Not to Stop, That is the Question
A Guide to Terminating Lygus Controls

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Making the best decisions about stopping chemical controls is knowledge intensive. Using information about your specific situation, sound decisions can be made about when to safely cease chemical control of *Lygus* bugs. These guidelines are based on 4 years of replicated research and limited validation on grower fields. They should help facilitate the grower – PCA dialog that is needed to arrive at the best decision for each individual grower's set of production conditions.

Thresholds for *Lygus* bugs in cotton have been well-established for years and validated on commercial acreages in Arizona. When a field has reached a minimum threshold density of 15 total *Lygus* with 4 nymphs per 100 sweeps (15/4) any time during the majority of the primary flowering period, a spray should be made and should return more than the cost of that spray to the grower in yield protected. Certain conditions (e.g., ample natural enemies) permit initial action thresholds of up to 15/8. **However, as a crop slows in growth and blooming rates decline, the amount of yield that can be saved by any given *Lygus* spray is reduced to a point of diminishing returns.** These guidelines are designed to help a grower and PCA decide when the final *Lygus* control should be made to give the best economic return. A grower and PCA will need to know at least four things before they can make this decision properly:

Key Factors in Decisions about Terminating *Lygus* Controls

1. Planting date (optimal/early vs. late),
2. Maturity class of the variety (early-, medium-, or full-season),
3. Production goals relative to irrigation termination plans. "Optimal" irrigation termination is timed to grow and mature the primary fruit set only. Some growers elect to extend irrigations for a variety of reasons. So "later" irrigation termination timing usually consists of one or two additional irrigations beyond that necessary to mature the primary fruit set.
4. Cotton development determined by nodes above first position white flower (NAWF).

Choose the production scenario (line) that best represents your situation based on planting date, maturity class, and irrigation plans. Then, if *Lygus* thresholds are exceeded, make your last spray when your revenue is significantly increased (denoted by '$'). Sprays made later than this will unlikely return your investment.

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Also see:

Ellsworth 2001. Lygus In Cotton: Implementing Action Thresholds. UA Lygus in Cotton Series No. 3.
http://ag.arizona.edu/crops/cotton/insects/lygus/lygus3.pdf
Ellsworth et al. 2011. $1+ Cotton? New Thresholds?! UA IPM Short.
http://ag.arizona.edu/crops/cotton/files/NewThresholdsVF.pdf

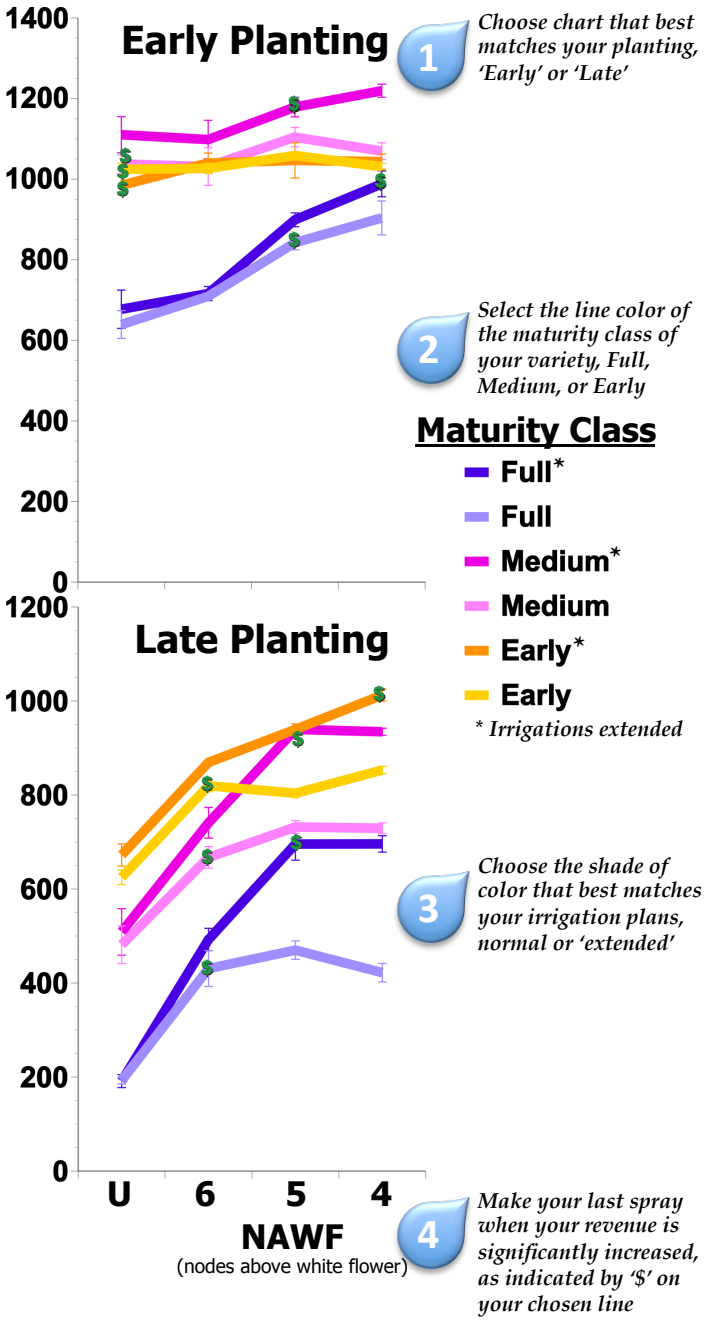

Figure 1. *Revenue lines for 12 different production scenarios based on planting date, variety, and irrigation termination plans. When Lygus thresholds are exceeded (15/4), make your last spray based on nodes above white flower (NAWF) for your specific production scenario, as indicated by the '$' sign. Lygus sprays made later than this will not produce significant increases in revenue.*
U = no sprays made for Lygus control.
This dynamic guide shows results for only one set of economic conditions: cotton lint = $0.75 / lb; $12 / late season irrigation; $17 / Lygus spray.

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