COTTON HEAT STRESS UPDATE: YUMA COUNTY

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Summary
The combination of moderate temperatures and high humidity generated Level 1 heat stress conditions across much of Yuma Co. last week (Fig. 1). Peak stress levels were attained on 29 June when conditions approached Level 2 stress. Fortunately, much drier air entered western AZ over the weekend which should reduce the potential for heat stress this week. Level 1 stress typically produces light to moderate fruit shed which subsides when stressful conditions are relieved. Level 2 heat stress produces heavier fruit shed as well as malformed (hooked) and/or smaller bolls. Level 2 stress also impacts the viability of young (14 days pre-bloom) squares and thus can produce a second, delayed fruit shed nearly two weeks after the stress occurs.

Figure 1. Estimated crop temperatures for Yuma Valley and Roll for the 7 days ending 2 July 2000. Heat stress is normally not a problem when crop temperatures remain below 82.4 °F (zone below bottom arrow labeled NS). Level 1 heat stress results when crop temperatures average 82.4 -86 °F (zone between arrows labeled L1). Level 2 heat stress develops when crop temperature average above 86 °F (zone above top arrow labeled L2).

Figure 2. Mean daily crop temperature for the 2000 summer season at Yuma Valley and Roll. See Fig. 1 caption for explanation of abbreviations: NS, L1, and L2.