

**A plain English summary not exceeding 200 words**

Research has shown that damage caused by chewing and sucking pests does not necessarily lead to a yield loss in cotton. The ability to compensate for tissue loss in cotton is attributed to an improved canopy development stimulated by pre-squaring tip damage, and to fruit substitution for damage and increased fruit production during the reproductive stage. However, cotton's ability to compensate for fruit loss declines dramatically as boll development accelerates (3-4 weeks after first square) and as other stress factors appear. But we have also shown that mild drought stress may limit the extent of mite damage possibly by making the canopy less attractive to mite development. Compensation can be enhanced through maintaining a healthy crop canopy but not one with excessive leaf area (which leads to yield loss). We are exploring options to minimise excessive growth response to pest damage such as selecting okra leaf cultivars and appropriate planting density. A well-managed crop may even respond to damage such as early season tipping out with yield gain over an undamaged crop - an area of focus in our on-going research. We are also continuing the effort to incorporate compensation results in a decision support system for pest management.