

Title Post-harvest control of the grain chinch bug *Macchiademus diplopterus* (Heteroptera: Lygaeidae) on pears in the Western Cape province, South Africa

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Abstract

The grain chinch bug (GCB) *M. diplopterus* is endemic to the Western Cape and as such is classified as a quarantine pest. The aim of this project was to evaluate post-harvest methods of control to ensure that packed fruit cartons destined for export are free of live GCB adults and acceptable to international quarantine standards. Cold storage trials were carried out at a commercial cold store in Ceres during three years. GCB adults were subjected to controlled atmosphere conditions (treatment) and regular atmosphere conditions (control) for a period of 6 weeks during 2001 and 10 weeks during 2002. The trials during 2001 and 2002 were carried out by packing GCB and pears into cardboard boxes with plastic liners. During 2003 the trial was repeated, but GCB and pears were placed directly into open plastic lug boxes without plastic liners. The results showed that GCB appear to be very well cold-adapted and that at least nine weeks will be required to achieve 100% mortality under controlled atmosphere conditions if pears are packed with plastic liners. A mortality of 100% was never achieved under regular atmosphere conditions for the duration of the trial. If no plastic liners were used, 100% mortality of GCB occurred one week earlier under controlled atmosphere conditions. Sufficient data was generated here to conclude that low temperature in itself was not sufficient to effectively sterilize pears from GCB infestations. The time required to achieve 100% mortality under controlled atmosphere conditions would probably compromise fruit quality or be unacceptably long.