

## CONTROLLING RUSTY GRAIN BEETLES WITH MODIFIED ATMOSPHERES

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Mortality of rusty grain beetles *Cryptolestes ferrugineus* (Stephens) (Coleoptera: Cucujidae) eggs, larvae, pupae, and adults was determined for CO<sub>2</sub> concentrations of 30, 40, and 60% at a temperature of 30°C. The O<sub>2</sub> concentration selected was 10% and the relative humidity of gas mixtures was maintained at 75%. The gases were released from the cylinders at a gage pressure of 35 kPa and the flowrate in an exposure unit was maintained at 55 mL/min.

For a 60% CO<sub>2</sub> concentration in the atmosphere, 100% mortality of beetles was obtained for all lifestages with an exposure period of 3 days. When the CO<sub>2</sub> concentration was reduced, the time required to get 100% mortality of insects increased for all lifestages of the insects. Larvae were the least susceptible and adults were the most susceptible to modified atmospheres.