

Title Quality of maize grains treated with allyl isothiocyanate stored in hermetic bags
Author Silmara Bispo Santos, Marcio Arêdes Martins, Lêda Rita D'Antonino Faroni, Valfrido Rodrigues Junior and Onkar Dev Dhingra
Citation Journal of Stored Products Research, Volume 46, Issue 2, April 2010, Pages 111-117
Keywords Grain quality; Silo bag; Hermetic storage

Abstract

This purpose of this study was to evaluate the quality of maize grain treated with allyl isothiocyanate (AITC) and stored under hermetic conditions. Maize grains with moisture contents of 14.8 or 17.9% wet basis (w.b.) initial moisture content were packaged in high density polyethylene bags and submitted to treatment with AITC at a concentration of $300 \mu\text{L kg}^{-1}$. The bags were stored in controlled temperature chambers at 15, 25 or 35 °C. At 30-day intervals, for a period of 150 days, three bags were removed from the chambers and the grains were submitted to commercial classification, moisture content, bulk density, germination potential and electrical conductivity analyses. It was verified that AITC at $300 \mu\text{L kg}^{-1}$ has no significant effect on the physiological quality of maize grains stored in hermetic bags. The microbiological analyses indicate the control of fungi and yeasts on the grains stored with 17.9% w.b. and treated with AITC. The maize grains stored with 14.8% w.b. moisture content in hermetic systems suffered no deterioration and retained their quality for a longer period than grains stored with 17.9% w.b. moisture content, independent of AITC