

Title Correlation of total ergosterol levels in stored canola with fungal deterioration  
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Citation Journal of Stored Products Research Volume 42, Issue 2, 2006, Pages 162-172  
Keyword Rapeseed; Canola; Ergosterol; Deterioration; Carbon dioxide; Germination

### Abstract

Deterioration of canola caused by fungal growth during storage is a problem at moisture contents exceeding 8%. Secondary indicators of fungal growth, such as ergosterol, the main sterol found in fungal cell membranes, offer a way of relating fungal biomass to deterioration. The objective of this research was to determine ergosterol accumulation in stored canola and to correlate it with seed deterioration measured by germination, fungal infection, fat acidity values (FAV), and carbon dioxide production. Total ergosterol levels increased with storage time, temperature, and seed moisture content. Aggressive and destructive fungal species such as *Aspergillus candidus* and *Penicillium* spp. contributed more to ergosterol than *Eurotium* spp. Initial total ergosterol concentrations between 1.46 and 1.67 ppm may be taken as the background levels in sound canola, and levels greater than 2 ppm were related to significant levels of spoilage. Results showed that germination and FAV had a strong correlation with total ergosterol (Spearman rank order correlation coefficients of  $-0.826$  and  $0.800$ , respectively) but the relationship was weaker for CO<sub>2</sub> production (Spearman rank order correlation coefficient of  $0.650$ ).