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## **Analyses of metabolic activity in peanuts under hermetic storage at different relative humidity levels**

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### **Abstract:**

Peanuts are transported by ship from production regions to all across the globe. Quality problems are frequently encountered due to increased levels of free fatty acids (FFAs) and a decline in organoleptic quality through lipid oxidation occurring during transport and storage. We studied the role of moisture (water activity,  $a_w$ ) in interaction with 87 days hermetic storage under air or nitrogen gas. Upon storage with air, some lipid oxidation was observed at water activity levels below 0.73. FFA levels increased at water activity levels above 0.73 and fungi proliferated at water activities above 0.80. Lipid oxidation, an increase in FFA levels and fungal growth were not observed after storage under nitrogen gas. It can be concluded that peanut storage and transport under anoxia can strongly reduce quality losses.

Keywords: free fatty acids, germination, hermetic storage, lipid oxidation, metabolomics, peanuts