

**MODELLING MOISTURE DESORPTION ISOTHERMS OF MACADAMIA KERNEL**

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Macadamia are an important horticultural export from Australia. The drying of kernel to appropriate moisture content levels is critical to the processing and storage to prevent microbial deterioration and control the development of rancidity. Furthermore the choice of moisture content levels is critical to the satisfactory roasting of the kernel to produce high quality product.

Several models based on the physical processes involved have been proposed to relate moisture content to water activity in the kernel of a wide range of nut species. Two well known models for adsorption/desorption are the Brunauer, Emmet and Teller (BET) equation and the Guggenheim, Anderson and de Boer (GAB) equation. These models are purported to fit the data well within certain ranges of water activity. Our data are more extensive than other published data sets and span a larger range of values for both water activity and moisture content during the desorption process. Both the BET and GAB models do not adequately fit our data. We propose an alternative model that includes an extra parameter and provides a better fit.

References:

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