

## Introduction:

NIR Transmission Spectroscopy provides a means of measuring moisture, protein and fat in foods and agricultural products. Previously NIR Reflectance has been used for measuring fat content of chocolate, however problems arise due to the fact that the fat content at the surface is not necessarily the same all the way through the chocolate. This simple study was conducted to test whether NIR Transmission Spectroscopy would provide a better means of measuring fat in chocolate.

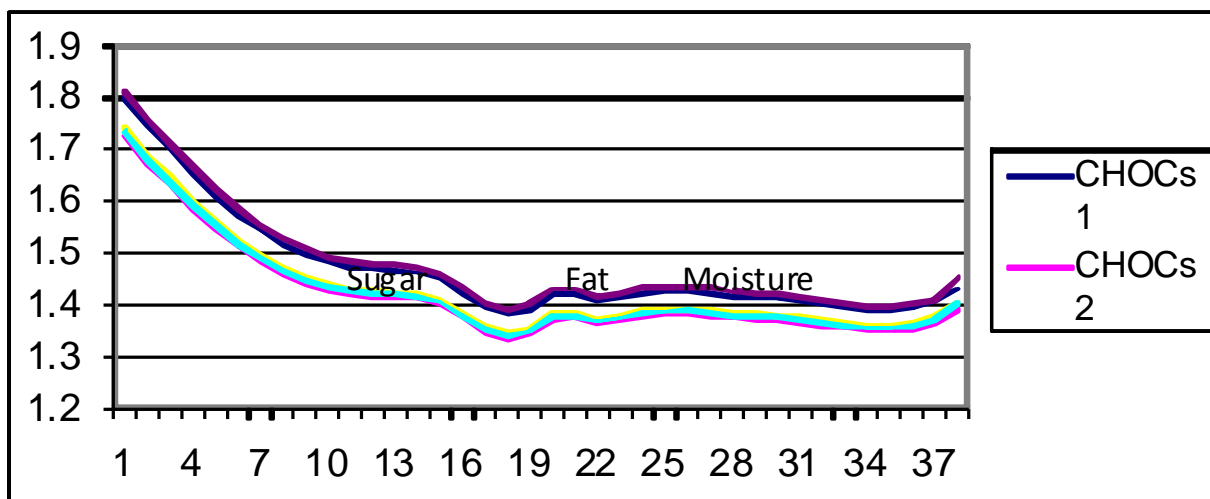
## Description:

2 blocks of Lindt Dark and Milk Chocolate were purchased. Approximately 25grams of each were placed into an oven set at 50C for 1 hour. The samples were heated so that they could be placed into the NIR Technology Australia Squeeze Cell where they were compressed between two glass plates with a 4mm pathlength. Chocolate at room temperature was too solid to compress.

The samples were scanned using the standard integration time, ie, 10-40usecs per pixel. 2 scans of each sample were collected.

## Results:

Figure 1. shows the NIT spectra of the two samples of chocolate. The absorbance peaks marked 1, 2 and 3, correspond to sugar, fat and moisture.



## Conclusion:

This study was simply to prove that a spectrum could be collected through 4mm of chocolate. The smooth and consistent spectral traces, illustrate that the NIT spectra are sufficient to measure components such as sugar, fat and moisture in chocolate.