

Apples and Oranges – A Comparison¹

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Infrared spectra of apple and orange extracts are compared. Such comparisons are not only possible, but show a great deal of similarity between the two fruits in contradiction of widely-held belief.

I. INTRODUCTION

We have all been present at discussions (or arguments) in which one of the combatants attempts to clarify or strengthen a point by comparing the subject at hand with another item or situation more familiar to the audience or opponent. More often than not, this stratagem instantly results in the protest “you’re comparing apples and oranges!” This is generally perceived as being a telling blow to the analogy, since it is generally understood that apples and oranges cannot be compared². There are some problems with this argument, however.

First, the statement that something is like comparing apples and oranges is a kind of analogy itself. That is, denigrating an analogy by accusing it of comparing apples and oranges is, in and of itself, comparing apples and oranges. More importantly, it is not difficult to demonstrate that apples and oranges can, in fact, be compared.

II. EXPERIMENTAL SETUP AND METHODS

The samples shown in figure 1 were prepared by gently desiccating them in a convection oven at low temperature over the course of several days. The dried samples were then mixed with potassium bromide and ground in a small ball-bearing mill for two minutes. One hundred milligrams of each of the resulting powders were then pressed into a circular pellet having a diameter of 1 cm and a thickness of approximately 1 mm. Spectra were taken at a resolution of 1 cm^{-1} using a Nicolet 740 FTIR spectrometer.

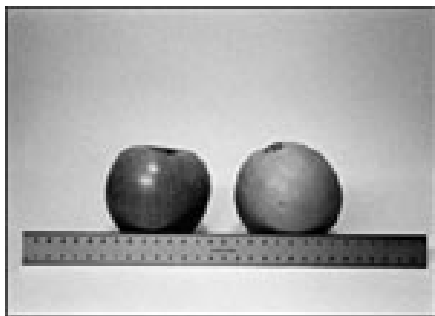


FIG. 1: Granny Smith (left) and Sunkist Orange (right).

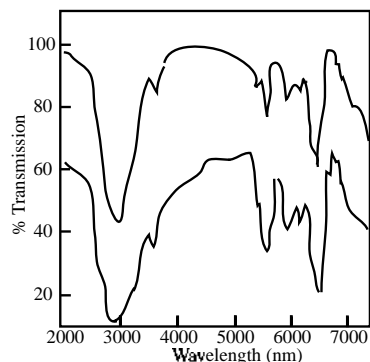


FIG. 2: FTIR spectra for apple (upper curve) and orange (lower curve). Curves have been offset for clarity.

III. RESULTS

Figure 2 shows a comparison of the $2\text{ }\mu\text{m} - 7\text{ }\mu\text{m}$ infrared transmission spectra of a Granny Smith apple and a Sunkist Navel orange. Not only was this comparison easy to make, but it is apparent from the figure that apples and oranges are very similar.

IV. CONCLUSIONS

It would appear that the comparing apples and oranges defense should no longer be considered valid. This is a somewhat startling revelation. It can be anticipated to have a dramatic effect on the strategies used in arguments and discussions in the future.

V. ACKNOWLEDGEMENTS

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REFERENCES

- ¹ Adapted from the Annals of Improbable Research.
- ² Franklin, B. “Planting fruit orchards,” *P. R. Alman.* 4(2), 73-76 (1755).