

food

innovation@abertay



Dry Lube Triangle Test Report

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UNIVERSITY
of
ABERTAY DUNDEE



Dry Lube Triangle Test Study

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1. Proposal

Dry Lube wished to undertake consumer panels to assess any potential effect of H1 lubricant on the sensory properties of soft drinks transported on conveyors using the lubricant.

2. Methodology

A total of 77 panellists were recruited from the Food Innovation @ Abertay consumer panel database. They were non-rejectors of sparkling soft drinks and recruited from across a range of socio-economic groups.

The method of triangle testing was used to evaluate the effect of the alternative conveying method. The objective was to determine if the change in conveying lubricant was detectable by tasting the product when drunk directly from the cans. The null hypothesis is that there is no difference between the samples.

The panellists were presented with three samples, of which one was different to the others, and asked to choose the sample that to them is different from the others and also to score the degree of difficulty in the decision. The option of no difference was removed from the panellist.

The cans were presented to the panellists at random using the following combinations – AAB, BAA, ABA, BAB, ABB, BBA, where 'A' is the control product and 'B' the cans that have travelled along the conveyor using Dry Lube's product.

Three digit random numbers were used for labelling the samples and the order of presentation balanced so that influence from other panellists was reduced.

At the start of each panel session, the panellists will be provided with a brief with sufficient data on the product and on the assessment procedure without influencing their opinion.

An example copy of a scoresheet can be found in Appendix 1.

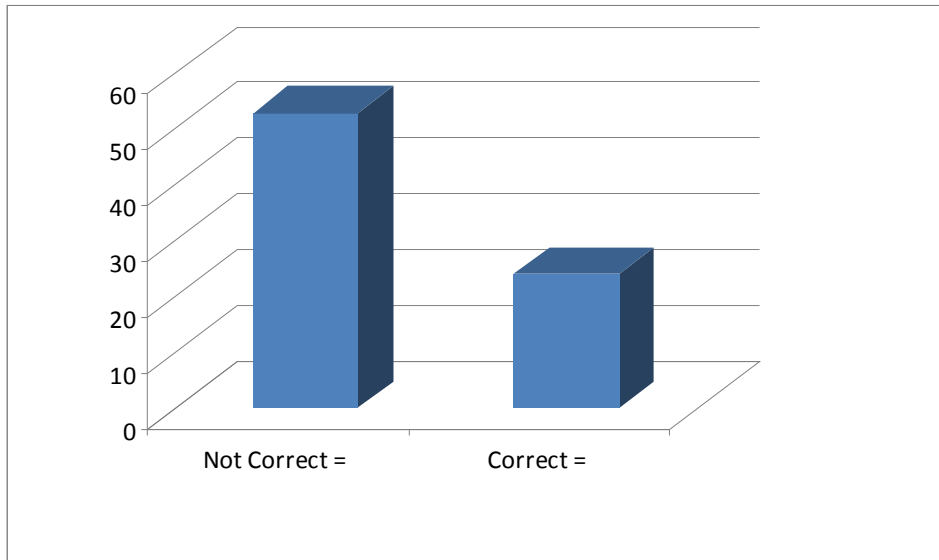
An α value of 0.20 (probability that the null hypothesis will be wrongly rejected – false positive), β value of 0.01 (probability that the null hypothesis will be wrongly retained – false negative) and a p_d of 30% (the true proportion of the population who can detect a difference between the samples) were selected.





3. Results and analysis

A total of 77 panellists took part with 24 correctly picking the odd sample which, using statistical tables, can be concluded that any sensory difference between the two methods of conveying is sufficiently small to be ignored, i.e. the two samples are sufficiently similar to be interchanged.



With the results of the tests indicating 24 panellists correctly selected the odd sample it can be concluded that, with 99% confidence, the proportion of the population who can perceive a difference is less than 30%, therefore the null hypothesis of no difference between the samples can be accepted.

With the use of confidence limits (upper 99%, lower 80% one sided confidence limits) it can be determined that the true proportion of the population that can distinguish the samples is no greater than 15% and may be as low as 0%.





Appendix 1 – Example Scoresheet

TASTE PANEL - Soft Drinks

- Please taste the following samples in the order shown, rinsing your mouth between samples with the water provided.
- Two samples are identical, one is different. Select the different one by placing an X in the box next to the code of the odd sample.
- If there is no difference apparent, you must guess.

133

742

878

- How easy did you find the decision?

Very Easy	Easy	OK	Difficult	Complete Guess
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- Please comment on the reasons for your choice:

Name: _____

