



# Do visual date marking cues affect consumers' interpretation and choices to use or discard food?

## Background

About one third of all food produced globally is wasted. A large part of food waste is generated by consumers. Previous studies have shown that many consumers do not know the difference between the use-by and best-before expiry date. It has been estimated that 10% of household food waste is due to this confusion. Supporting a better understanding and use of expiry date information is a key aspect of the Dutch strategy to tackle food waste. This consumer research explored whether additional (visual) information on product packages can facilitate consumer understanding of expiry dates and thereby reduce food waste.

## Aim

The aim of this study was to investigate the effect of date marking related visual cues on consumers' interpretation and their self-reported behaviour on either using or discarding foods.

## Methods

An online survey was conducted among a representative sample of 1506 Dutch respondents. The first part of the survey consisted of a between-subject choice experiment, where the effect of adding a front of pack visual cue was investigated. Based on photos, respondents had to choose whether they would eat, look-smell-taste or discard several products. Four use-by cues and four best-before cues were tested, as well as a text-only condition. The subsequent part of the survey investigated consumer's perceptions and their interpretation of the different visual cues.

## Conclusion

The majority of respondents showed similar choices with and without cue in the online choice experiment, but for a small group, the cue affected their choice behaviour in the desired direction. So, adding additional date marking related information to product packages can help consumers in making correct decisions on either using or discarding food products. Especially, for best-before products, this could potentially lead to less food waste for a small proportion of consumers. Additional research is required to investigate further how different text options with or without visual cues affect consumers' choice behaviour in real-life.

## Results

- *For best-before products, respondents were somewhat less likely to discard in the presence of a (visual) cue, showing that adding a (visual) cue may help in food waste reduction.*
- *For use-by products, the (visual) cue triggered respondents to eat (instead of look-smell-taste) on the expiry date. Past the expiry date, the (visual) cue triggered to discard use-by products instead of look-taste-smell.*
- *The choice patterns were similar for all five cues, suggesting that the effect of the four visual cues was similar as the text-only cue in relation to consumer choices to use, look-smell-taste or discard.*
- *When respondents compared the visual cues directly, their scores showed consistent differences between the four cues.*
- *When consumers want to know the shelf-life of a product, the majority indicated to look at the expiry date in combination with: a) their own senses (76%) or b) the type of product (65%).*

## Recommendations for visual cue use in practice

- ❖ Icons that accompany a best-before date should depict clear symbols for the three senses look, smell and taste to trigger these actions.
- ❖ Icons that accompany a use-by date should depict a clear stop sign.
- ❖ Based on consumer preferences in our study, the text accompanying the use-by date should be short, clear and in line with the stop association: 'Do not use after date'.
- ❖ The most preferred text options for best-before date marking contained both the aspect of 'often (still) good after expiry date' and the action 'look, smell, taste'.
- ❖ The size of the symbols and text should be large enough to find, see and read them easily, in order to prevent frustration and low usage of the information.
- ❖ The majority of consumers indicated to habitually look at the expiry date and additionally use their own (implicit) knowledge to evaluate the shelf-life of a product. Only 30% indicated to look at other information on the package. This advocates for the positioning of icons or symbols next to the expiry date on a package, in order to be noticed by the majority of consumers.

## Policy perspective

This study builds upon the Dutch coalition of sector organizations and knowledge institutes initiated by the Dutch government on a better understanding and use of expiry date information [[Green Deal Over de datum?](#)]. It closely links to the public information campaign "Food Waste Free [#verspillings-vrij]" of the Foundation Food Waste Free United. Furthermore the findings of this research need to be seen against the backdrop of EU policy developments on date marking and potential implications of implementing (additional) visual cues in practice. By the end of 2022, a proposal for new EU legislation will be developed that addresses the use of date marking and possible changes in terminology or other options for date marking. Furthermore, during consultation sessions, it became clear that changing date marking information on product packaging requires a careful approach. Issues such as format, location, the use of colour and possible (cultural) different interpretations of icons between countries need to be taken into consideration.

## Practical example of visual cue used in this research

Available in Dutch only since the study was executed in The Netherlands.



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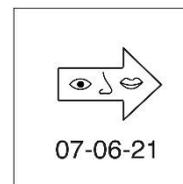
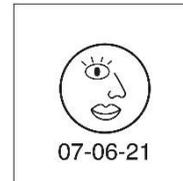
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## Best before

- The two icons with eyes, nose and mouth were best evaluated: face and arrow
- Most preferred text option: 'Often still good after the expiry date. Look, smell and taste'



## Use-by

- The two icons with clear stop association were best evaluated: hand and stop-cross
- Most preferred text option: 'Do not use after date'

