

# Consumer Response to a New Pigmented Mandarin Variety: Anticipating Reactions for a Successful Market Introduction



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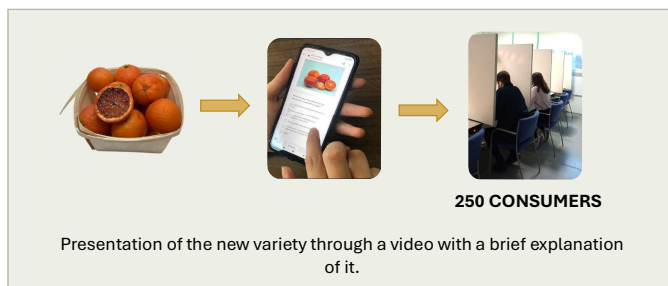
## INTRODUCTION

Mandarin production has increased in recent years due to their appealing flavor and the establishment of breeding programs that have produced seedless, easy-to-peel varieties. Currently, breeding programmes are focused on obtaining pigmented mandarins through crosses with blood oranges, which are rich in anthocyanins, compounds with antioxidant properties beneficial to health. However, the introduction of new foods requires prior knowledge of potential consumer responses, especially when products present characteristics that differ from what is commonly expected.

## OBJETIVE

This study aimed to evaluate consumer responses to the visual presentation of a new pigmented mandarin variety through a presentation video featuring a brief description of the origin of this new variety, its nutritional properties, and its health benefits.

## MATERIAL AND METHODS



### QUESTIONNAIRE:

#### WORD ASSOCIATION

(Write the first three words that came to your mind)

	Negative	Neutral	Positive
1 <sup>st</sup> Word:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 <sup>nd</sup> Word:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 <sup>rd</sup> Word:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### LIKERT (1-7)

How important is each trait for you?

The red colour of the rind

*I do not value it at all*        *I value it a lot*

The red colour of the segments

*I do not value it at all*        *I value it a lot*

That it has been obtained in Valencia, Spain

*I do not value it at all*        *I value it a lot*

Its high content in antioxidants

*I do not value it at all*        *I value it a lot*

#### BIPOLAR SCALES

(Value each of these traits)

	1	2	3	4	5	6	7	
Artificial								Natural
Boring								Stimulating
Poor in nutrients								Nutritive
Not safe to eat								Safe to eat
Very tasty								Poor taste
Harmful to health								Beneficial to health
For everyday use								For special/festive days
Unique								Current
Low quality								High quality
Does not respect the environment								Environmentally friendly
Traditional								Modern
Expensive								Cheap
Without additives								With additives

## RESULTS

### WORD ASSOCIATION

Participants mainly associated the fruit with positive terms related to health such as "antioxidant," and "healthy," and sensory properties such as "sweet," and "juicy," which were mentioned by up to 20% of the participants. Additionally, the frequent mention of terms such as "red" and "blood orange-like" emphasizes the importance of its distinctive pigmentation as a key differentiating attribute.



Figure 1. Word cloud

### LIKERT SCALES (1-7)

The 7-point Likert scales showed that, although all attributes were positively valued by consumers, "Antioxidant capacity" was the most valued attribute, reflecting strong consumer interest in the health and functional benefits of the product. "Valencia origin" was the second most valued attribute, suggesting that geographical origin is perceived as a sign of differentiation. Meanwhile, visual attributes such as "flesh color" and "peel color" received slightly lower scores.

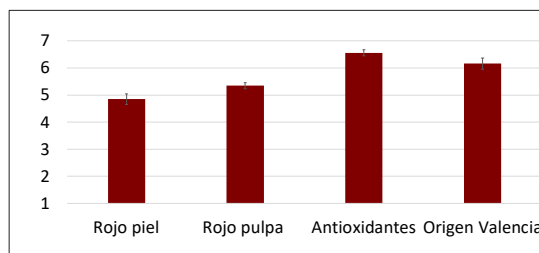


Figure 2. Mean consumer importance scores for different attributes of the new pigmented variety (7-point Likert scale). Error bars represent the LSD interval (p-value  $\leq 0.05$ ).

### BIPOLAR SCALES

The most positive aspects associated with this mandarin were "safe", "healthy", "nutritious", and "high quality", with scores between 6 and 7 on the bipolar scales. The remaining attributes, such as "natural" and "environmentally friendly", were rated between 5 and 6. The main limitation perceived by consumers was the expectation that it would be an "expensive product."

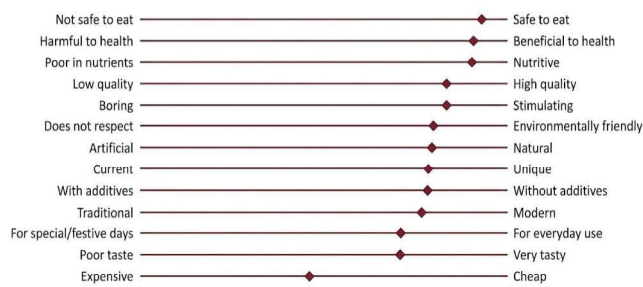


Figure 3. Consumer perception for different attributes of the new pigmented variety (7-point bipolar scale).

## CONCLUSION

Overall, the results indicate a highly positive consumer perception of the new mandarin variety, mainly linked to its health-promoting properties, which appear to be especially important for consumers. In addition, even without tasting the fruit, consumers expected good quality associated with favorable sensory properties. The variety was also perceived as safe, and the fact that it was developed in Valencia was highly valued. The main potential barrier identified was that consumers anticipated the new variety to be a high-priced product. These findings provide valuable insights for the successful market introduction of these new mandarin varieties, enabling the promotion of the attributes most relevant to consumers while anticipating and addressing potential barriers to acceptance.