

# Healthier Meat Products For the Future

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# Importance of the Project:

- Animal proteins are an important contributor to human health.
- However, overconsumption of meat has increased in modern society raising human health concerns as well as environmental.

Can we expect consumers to change their current meat consumption behaviour?

- We need to create attractive alternatives in order to achieve this.
- Attracting consumers to meat alternatives and increasing consumer acceptance of such products is key to success.

# How do we achieve this?

- Reducing meat intake by developing 'Hybrid Meat Products'.
  - Partial replacement of meat in meat products by healthier sources of proteins – e.g. Plant proteins.
- For such products to be successful in their purpose, careful, strategic product development is required.
- Specifically a **consumer orientated approach**.

## What we did:

- Hybrid Sausages (30% Meat) and Burgers (37% Meat) were developed.
  - Formulations achieved using plant proteins, starches, hydrocolloids...
  - Sensory testing was used to drive formulation.
- Consumer testing was conducted:
  - Hybrid formulation were tested in comparison to commercial meat and meat free products – Burger 77% Meat, Sausage 61% Meat.
  - Consumer acceptance data generated.
  - Check-all-that-apply (CATA) analysis determined sensory attributes.
  - 94 consumers

# The Products:



# The Process:

## Sausages

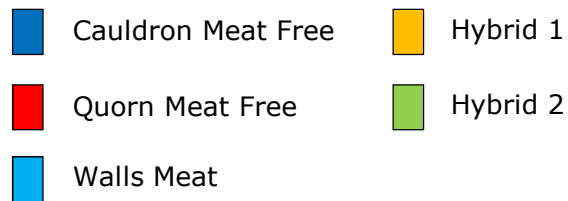
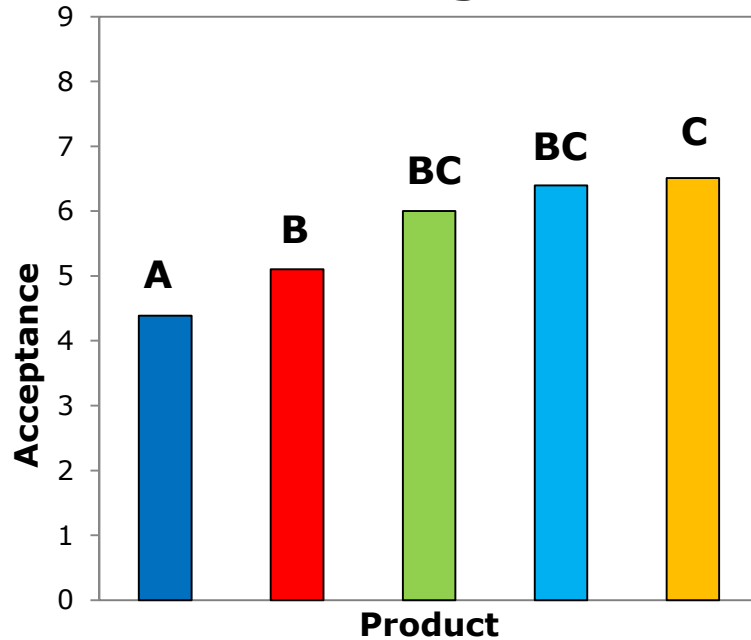


## Burgers



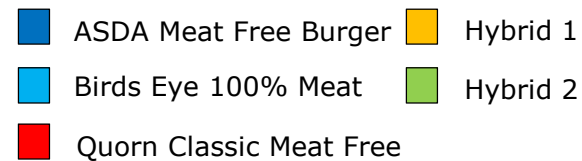
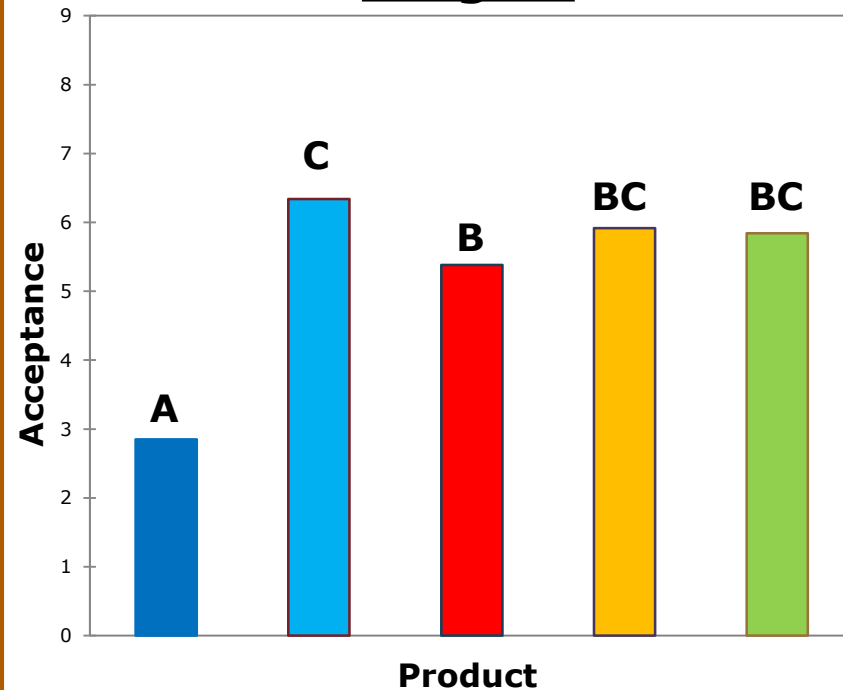
# Were the New Products Accepted?

## Sausages



Yes!!

## Burgers



ANOVA One-factor Analysis of Variance

Significant differences according to Tukey's HSD

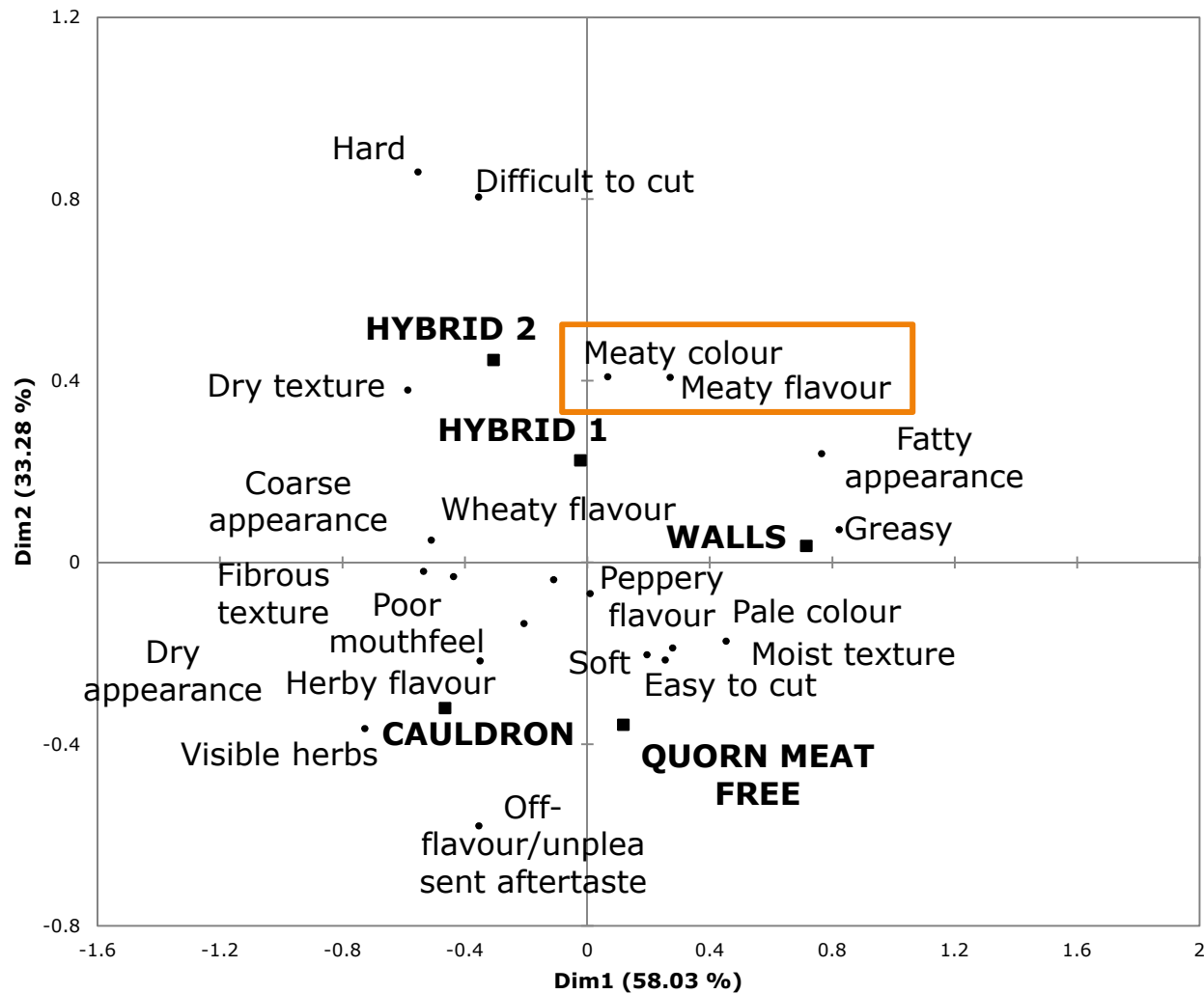
# What Else Did Consumer Testing Tells us?

Other method capabilities:

- The sensory attributes of the hybrid products.
- The sensory attributes in meat products that consumers like and don't like.
- Areas for further formulation optimisation.
- Consumer demographics of acceptance.

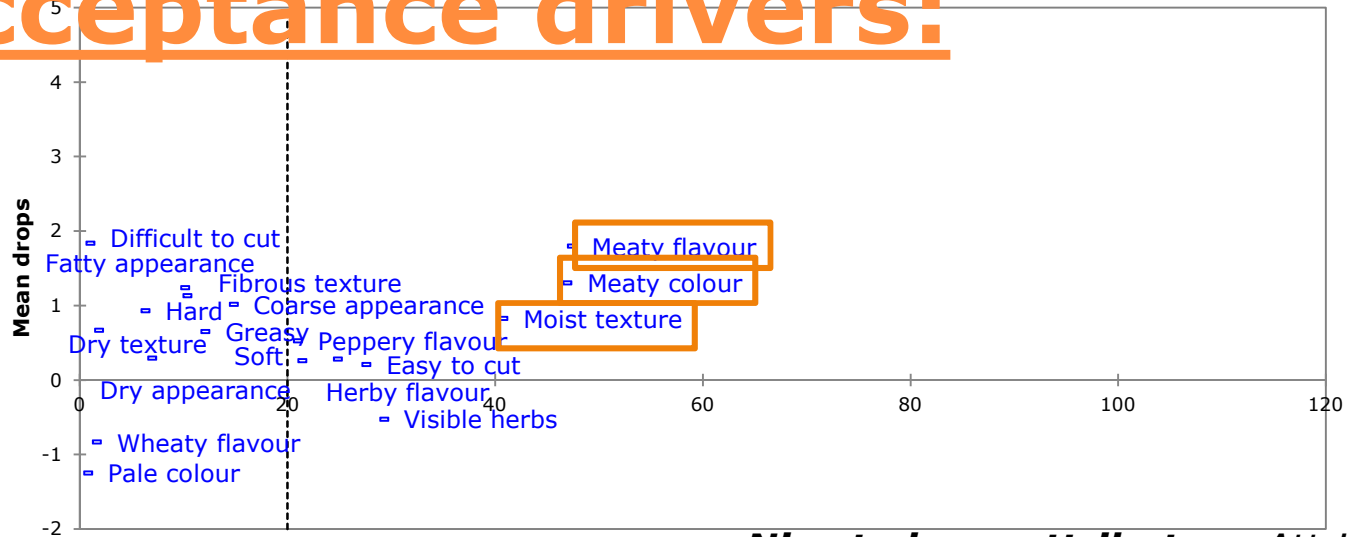


# Hybrid Sausages : Sensory Attributes

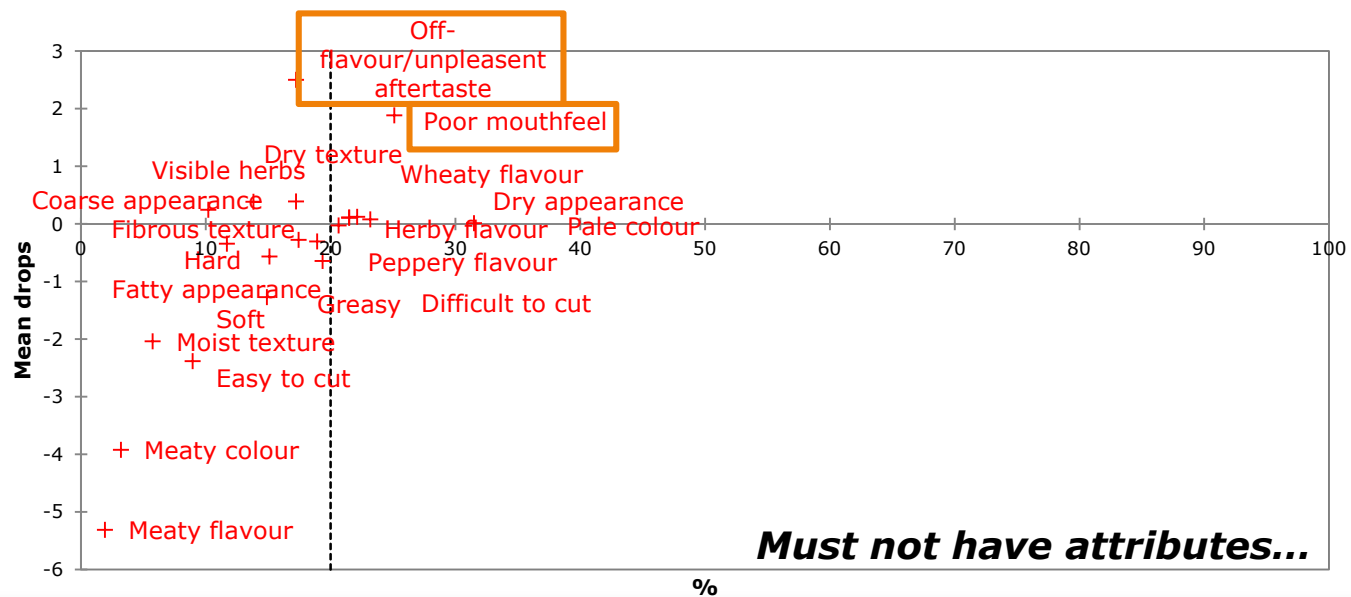


**Correspondence Analysis**

# Acceptance drivers:



% **Nice to have attributes...** Attributes that drive consumer acceptability



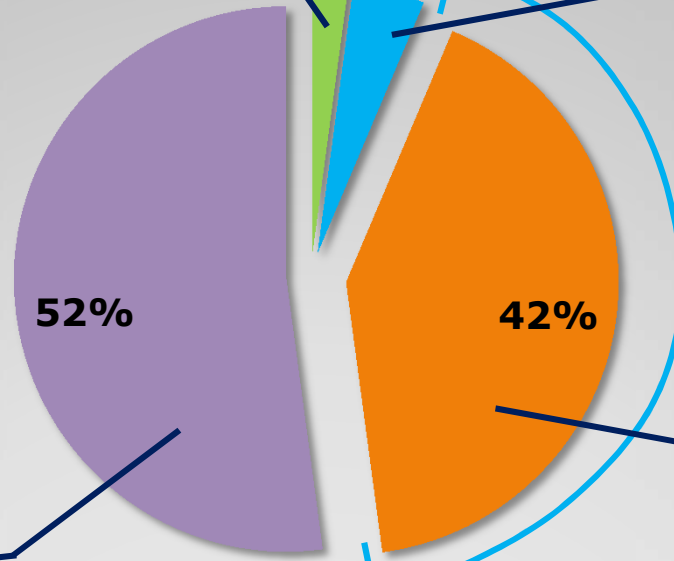
% **Must not have attributes...**

**Consumer responses when asked about their meat consumption behaviour:**

**Most commonly eat meat substitutes but also eat meat occasionally.**

**Eat both equal amounts of meat substitutes and meat.**

2% 4%



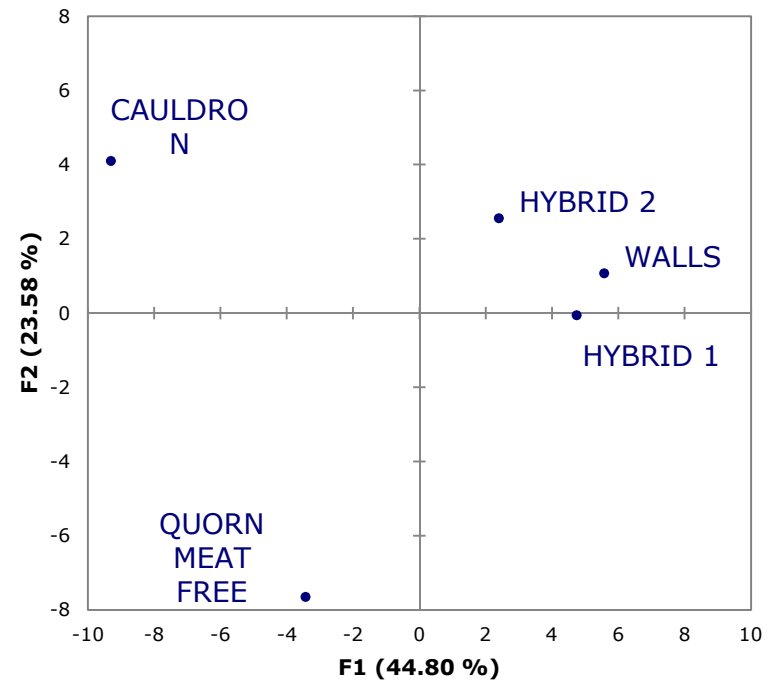
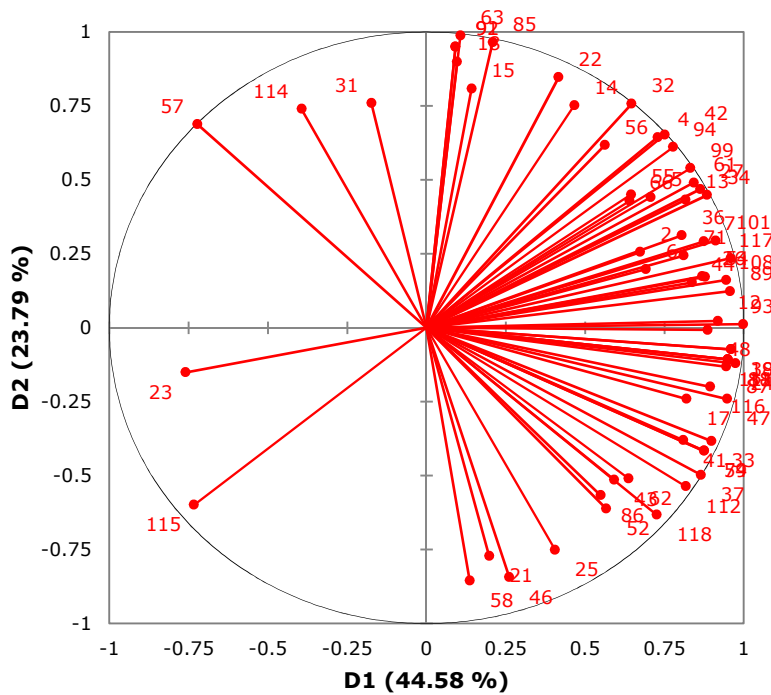
*Flexitarians*

**Only eat meat products and do not eat meat substitutes.**

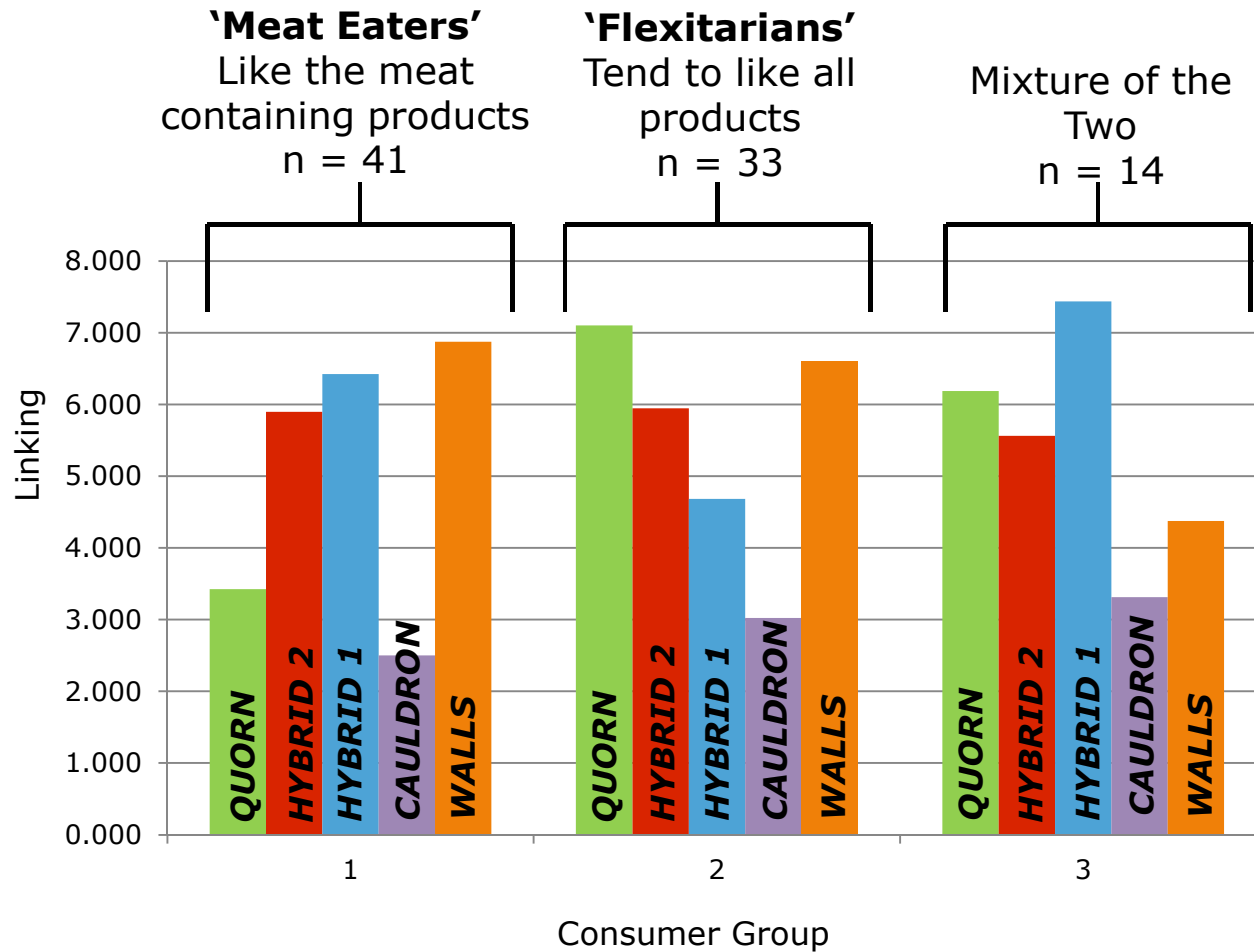
**Most commonly eat meat products but sometimes eat meat substitutes.**

# Consumer Preferences:

## Internal Preference Mapping



# Were Hybrid Products liked by Our Target Consumers:



**Cluster Analysis**

# In Conclusion

- Acceptance data identified that the hybrid concept was well liked by meat eating consumers.
- Formulations created effectively replicated the sensory attributes of meat - shared similar sensory attributes to meat.
- CATA questioning gave use the capability to drive effective future product formulation.

**Thank you.**

**Any Questions?**