Consumer perception and the role of science in the meat industry

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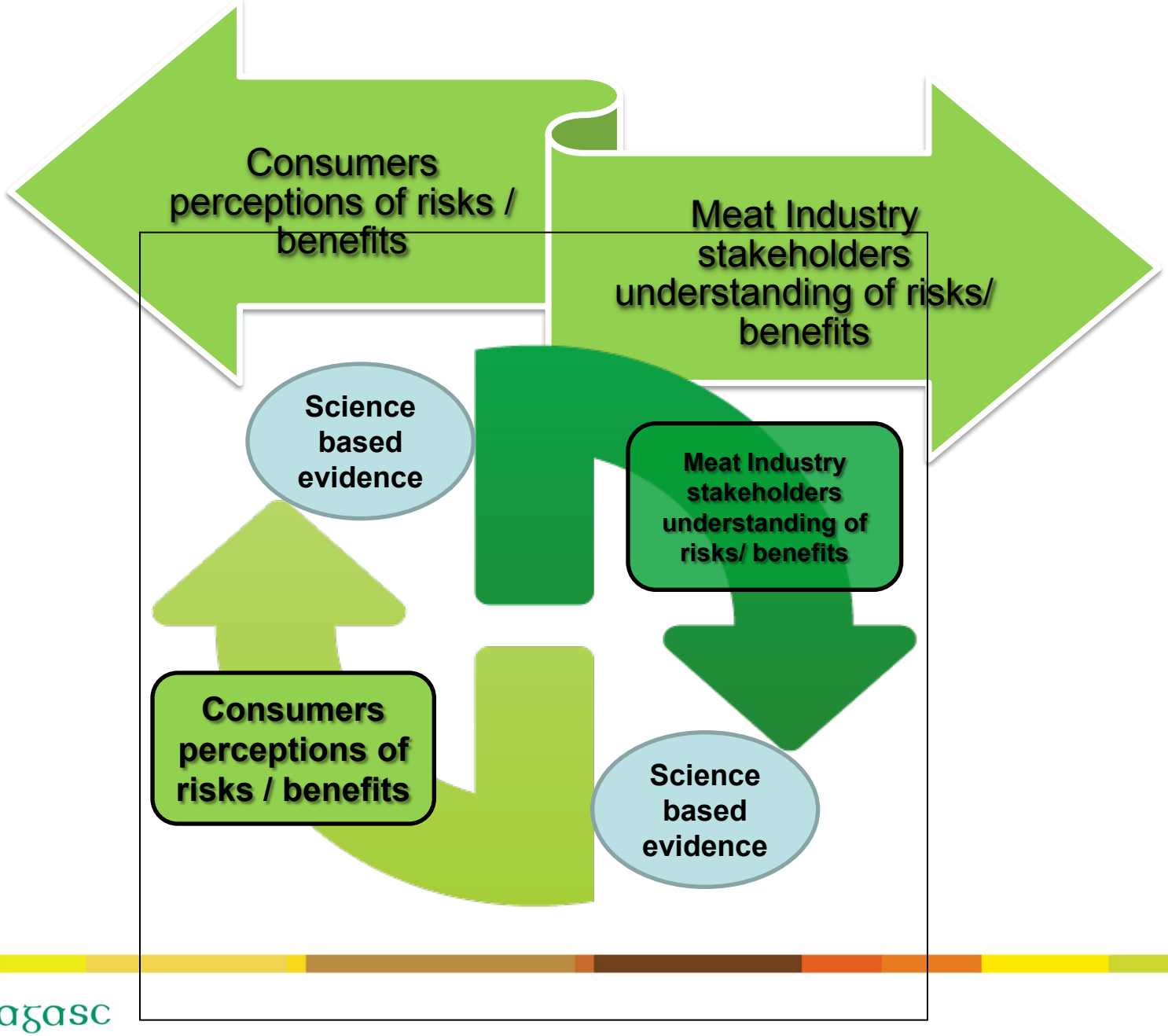
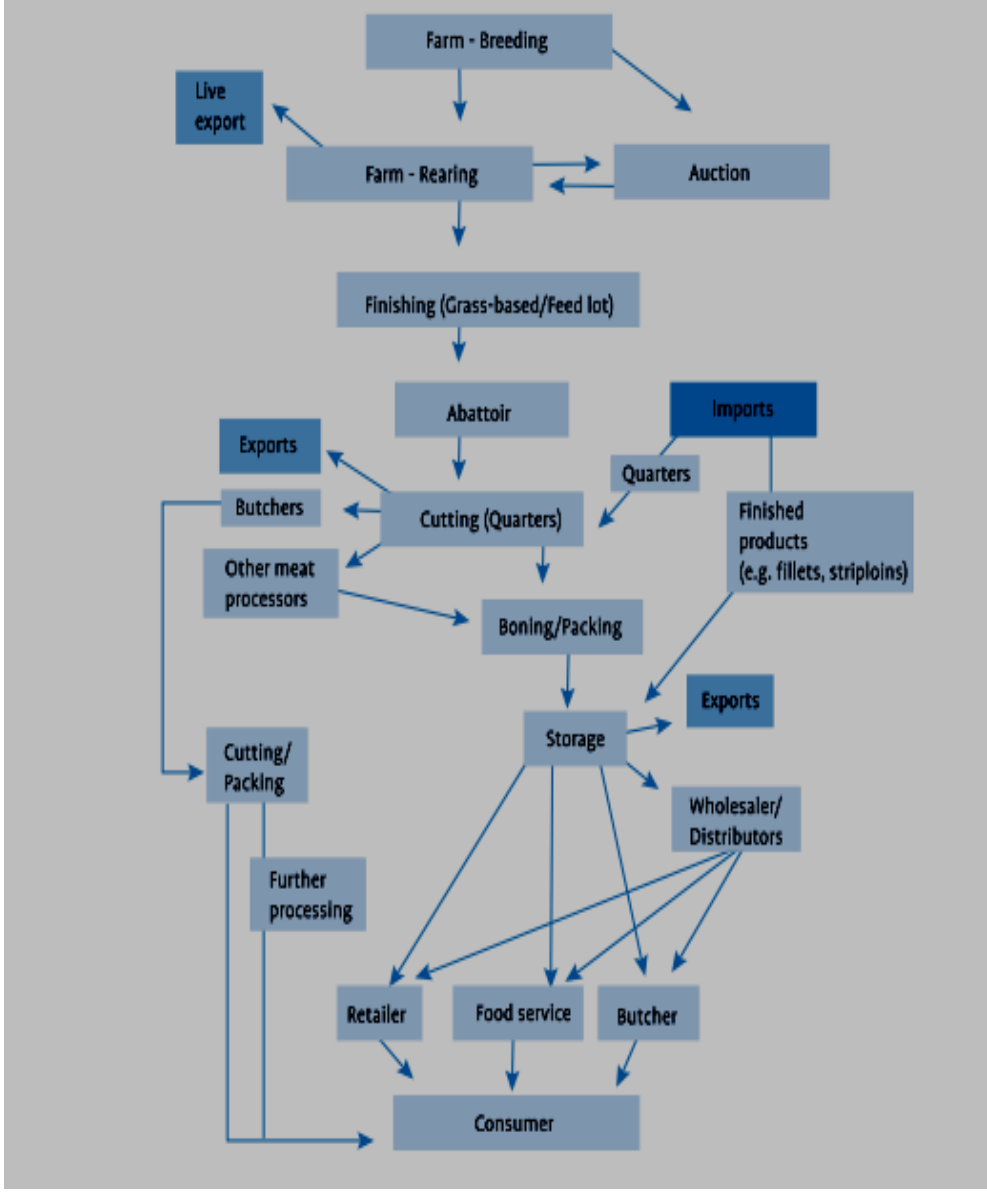
T R U S T ?


Consumers perceptions of risks / benefits
Meat Industry stakeholders understanding of risks/ benefits
Science based evidence
Meat Industry stakeholders understanding of risks/ benefits
Consumers perceptions of risks / benefits
Science based evidence

The Problem

- **Industry structure**- complex supply line
- **Nature of the beast** – cheap options, market forces
- **Consumers** are particularly vulnerable to problems with supply, because the vast majority of the public now depend on third party producers, processors and retailers – little communication with meat industry and much confused (emotional) information.
- **Education** needs of industry
- What is claimed is often not and / or can not be verified – where are the **scientists?**



Beef Industry Stakeholders

- Land owners
- Farmers
- Processors
- Manufacturers
- Retailers
- Consumers
- Government
- NGOs
- Agencies
- Scientists

Food is one of the core elements that underpins these positive shifts in lifestyle

Consumer lifestyle trends

Budgeting

Rethinking food budgets has become a helpful way for consumers to save money more generally

Connection

Food provides a connection between family members and between family and friends

Purpose

Food has given some consumers a new sense of purpose

Health

Food offers consumers more control over their health

Bord Bia
Irish Food Board

Meat Variability – still not acceptable

2.5 to 10kg shear force for sirloin

3.1-9.3kg for rump

Evidence is that 20% still unacceptable

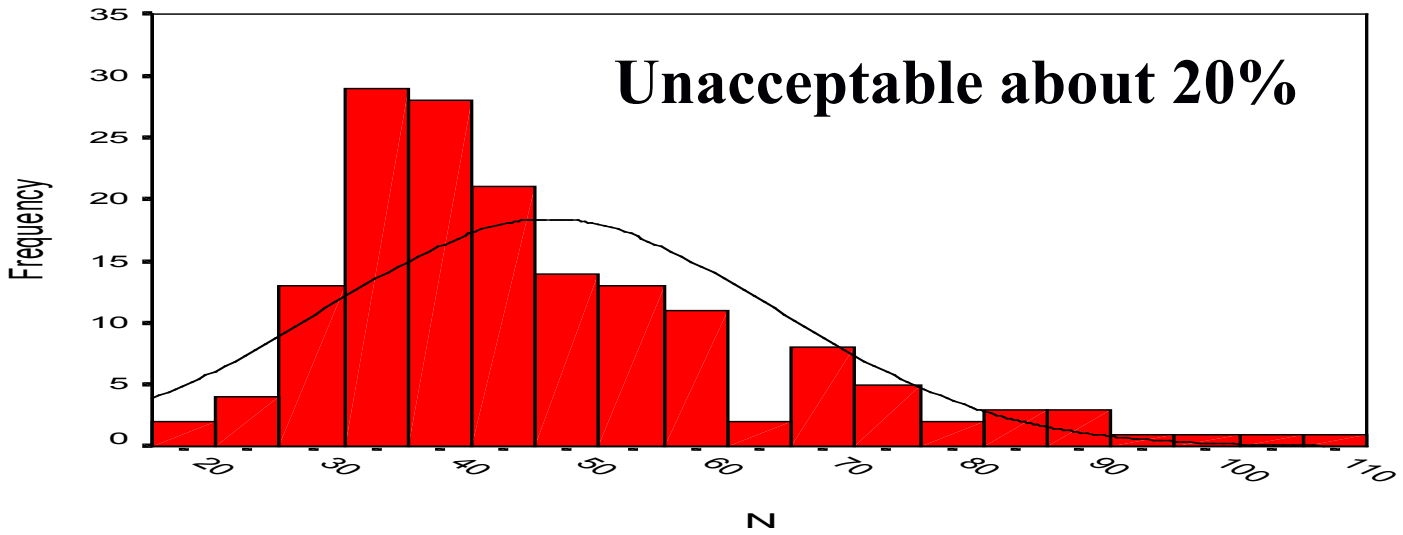
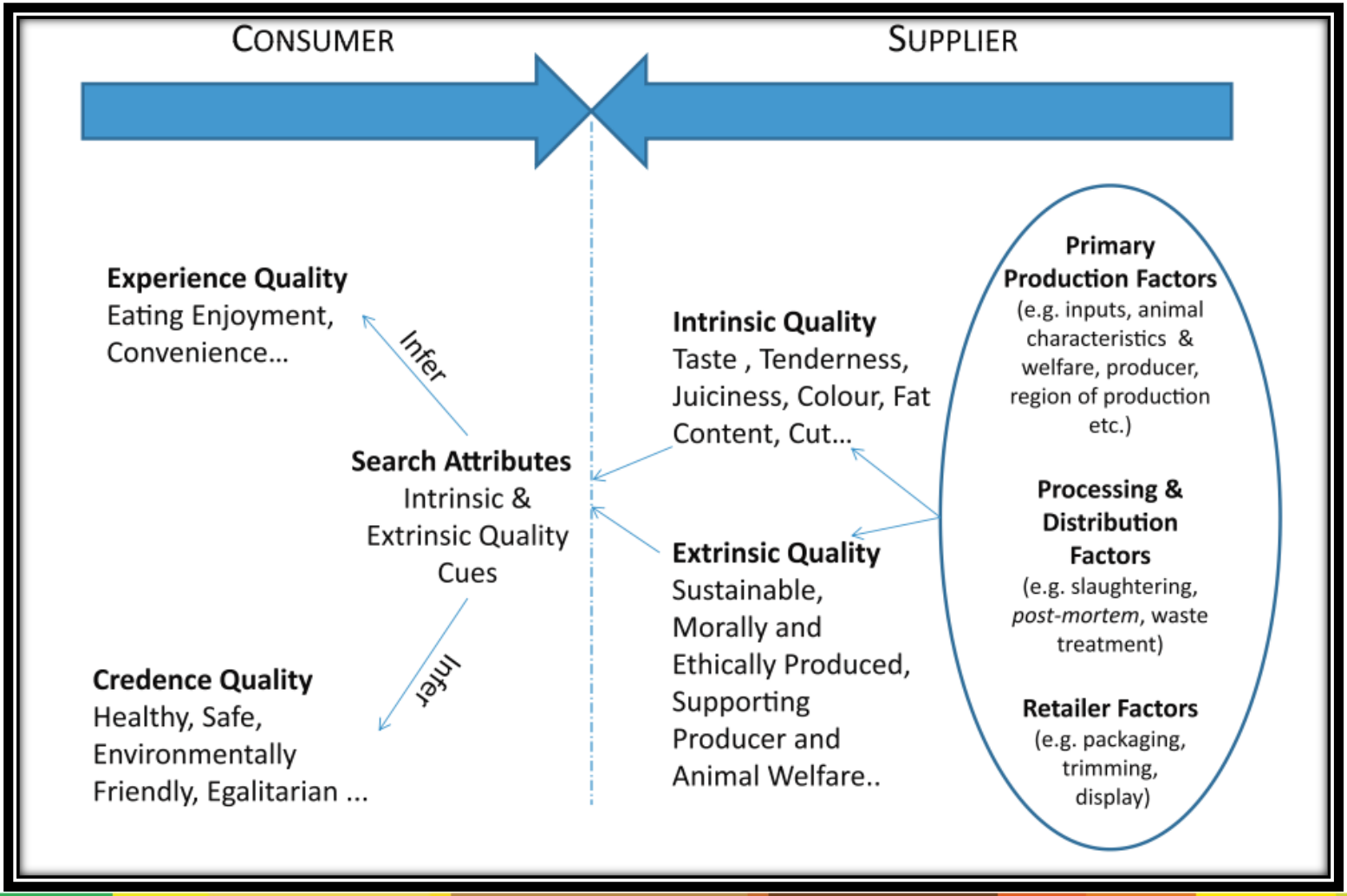


Table of quality cues

Point of sale
Meat colour
Packaged meat colour
Visible drip
Visible fat
Point of consumption
Tenderness
Flavour
Juiciness
Succulence
Background
Safety
Nutrition
Sustainability
Ethics

Quality Perceptions

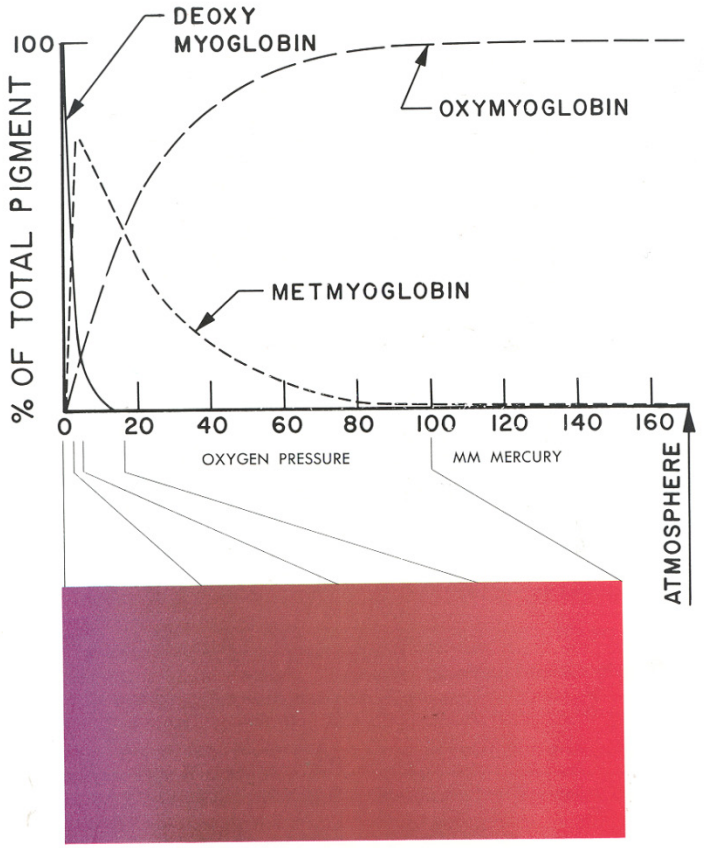


Purchase and consumption

- Point of purchase- expected quality judgement
- Point of consumption- experienced quality judgement
- Purchase based on both of above
- Consumers have difficulty in deciding
- Industry has difficulty in communicating appropriate data to allow confidence in choice
- Science has provided industry with answers to improving quality but not measuring it

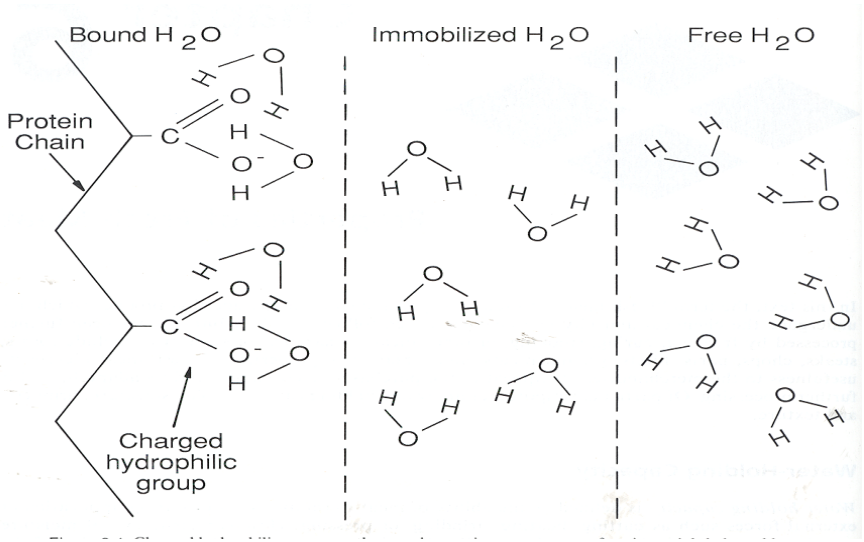
Meat Colour

- Major factor at point of sale but not generally linked to eating quality
- Consumers associate it with freshness
- Discoloured meat must be discounted, minced or discarded (up to 15% in US)
- Colour chemistry of fresh beef is well established
- Role of pH, temperature, fiber type, partial oxygen pressure animal age and others are widely reported



Visible Drip

- Factors include rigor temperature, membrane integrity, pH, cut surface area, packaging, temperature fluctuations.
- Materials include pattern bases, absorption pads and multi-absorbent at base beneath perforated floor



Visible Fat

- Intramuscular fat or marbling is market specific
- Associated with breed, age of animal, feed, growth rate
- Fat colour related to feed (white vs. yellow)
- Overall production specific
- Role in eating quality

Eating Quality

Point of consumption

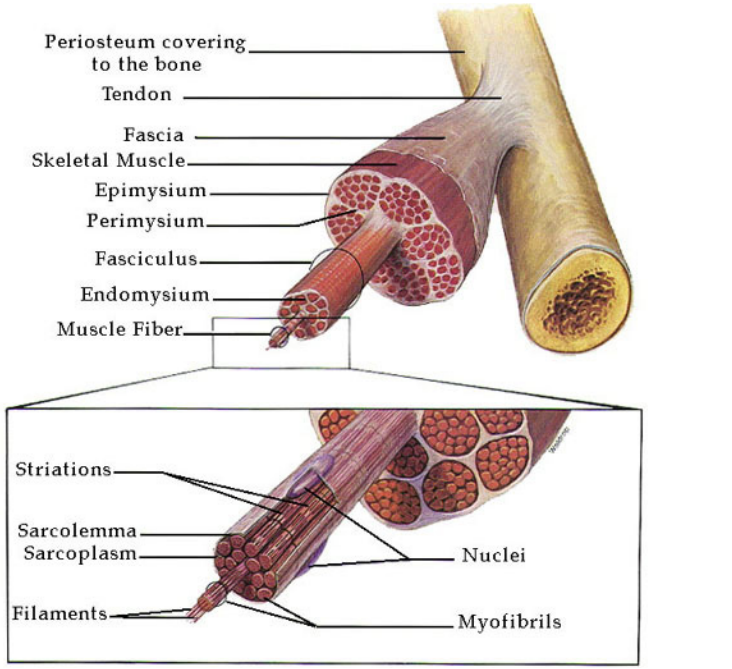
Tenderness

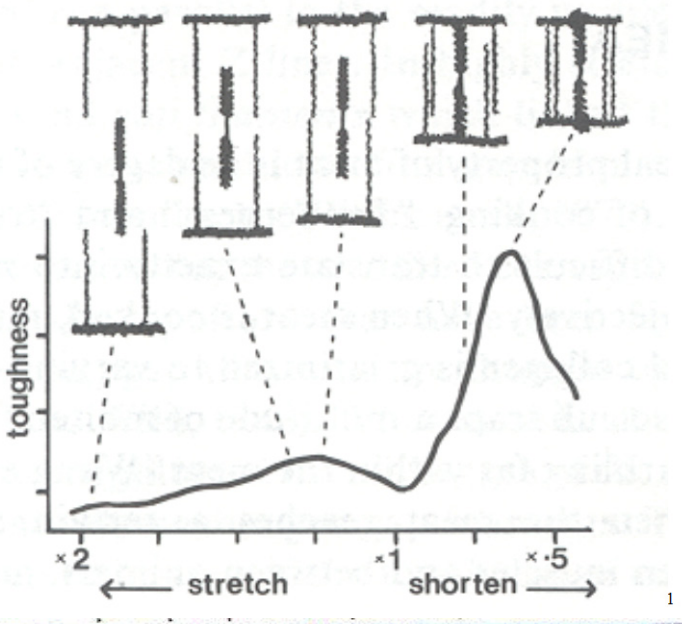
Flavour

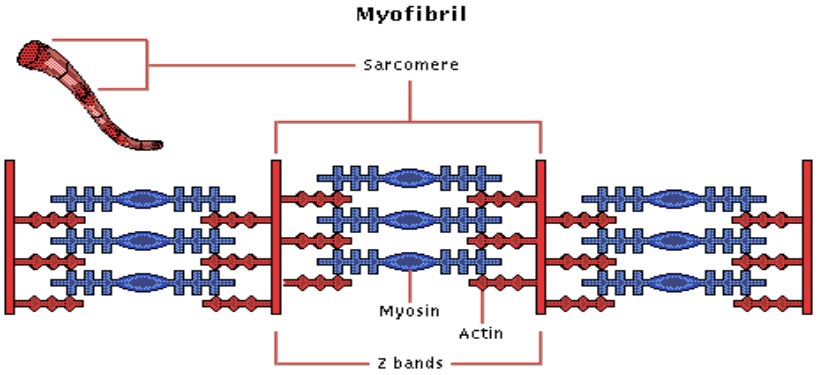
Juiciness

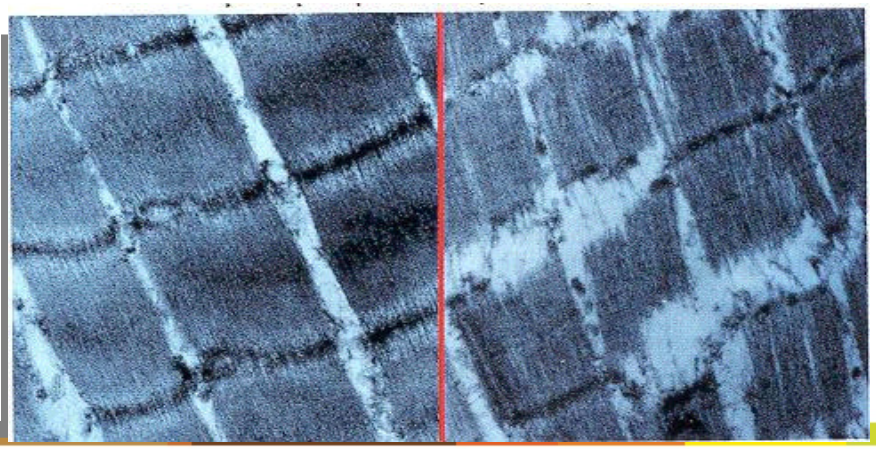
Succulence

Tenderness


Periosteum covering to the bone
Tendon
Fascia
Skeletal Muscle
Epimysium
Perimysium
Fasciculus
Endomysium
Muscle Fiber
Striations
Sarcolemma
Sarcoplasm
Nuclei
Filaments
Myofibrils


toughness
×2
stretch
×1
shorten
×.5


Myofibril
Sarcomere
Myosin
Actin
Z bands



On- line tenderness measurement- Holy Grail

- None
- Comp
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consi

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Chilling

- Control of temperature fall and pH
- 10/10 rule
- Hygiene considerations
- Chiller and carcass specific
- Drip loss versus eating quality

Hanging Methods

- Most effective method
- Up to 30% increase in sarcomere length
- Up to 20% increase in tenderness
- Chiller space, distortion, labour input

Background Cues

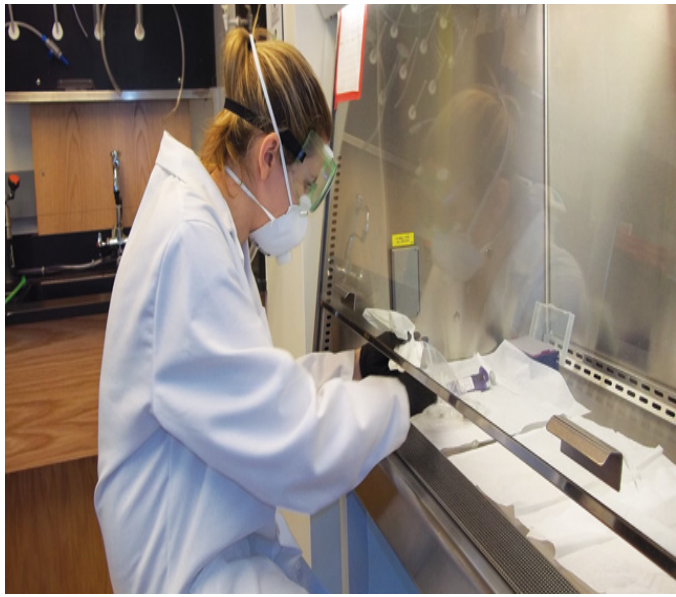
- Safety
- Nutrition
- Sustainability
- Ethics

Summary

- Consumer perceptions are complex and difficult to measure
- Industry must continually respond (eg MSA system)
- Expand PACCP to include safety, welfare, carbon miles, nutrition =QACCP
- Much scientific knowledge generated but not transferred to industry. Why? Where are the bottlenecks?

How do we increase the role of science in the meat industry? - Researcher

- Communicate in the appropriate format
- Don't compromise the science
- Identify real problems not hobby areas
- Network with companies and research centres at international level
- Increase entrepreneurial skills of researchers
- Engage with technology transfer experts
- Protect IP and ensure significant impact of research outputs



How do we increase the role of science in the meat industry? - Industry

- Develop a strategic partnership with the research world at senior management level
- Invest in higher scientific skills base and in research
- Networking of meat science research community on big issues
- Increase focus on innovation and added value
- Be a more proactive industry
- Articulate research needs and priorities
- Highly sensitive industry
- Less of a commodity driven culture

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SUSTAINABLE BEEF QUALITY FOR EUROPE

A Workshop for Industry & Scientists