

Cooking

Definition

application of **heat**, from a **heat source** to the **food**, to transform it from **raw to cooked**, improving its **digestibility** and **organoleptic** properties

heat transfer

movement between molecules (vibration)

types

- conduction
- convection
- radiation

Aroma vs Smell

Smell: chemical compound through nose

Aroma: chemical compound through retronasal route

Food Chemistry

Water: everywhere

Fat: FA → taste. Smoke point → acrolein (toxic)

Gluten → fluffiness and elasticity

Carbs: sweet taste, base and structure. Maillard reaction 140°C and caramelisation 170°C

Proteins: Maillard reaction (browning) → acrylamide (toxic)

Osmosis and diffusion

Osmosis: water flow from **hypotonic** to **hypertonic** through a semi-permeable **membrane**

Diffusion: 2 solutions with different concentrations **equalise** on contact. **NO membrane** (milk and cocoa powder)

animal vs plant cell: vacuoles, chloroplasts, internal pressure

meat

doneness

well done: ↑water loss, hard to chew, ↓juicy

rare: hard to chew, dangerous (m.o.)

medium rare: the best, ↑digestibility, ↓nutrient loss

colour

white fibres

sudden and rapid movement

glycogen

red fibres

slow and persistent movement

fat

Myoglobin

- unoxygenated → purple
- oxygenated → red
- oxidised → brown
- with NO → pink
- with CO → pink









