Incorporation of lipophilic bioactives into extruded foods via emulsions

**Lipophilic bioactives** (e.g. carotenoids and phytosterols)

→ **Potential health benefits** (reduced risk for cancer, coronary heart diseases, prostatitis, macular degeneration, cataracts…)

→ **stabilized and encapsulated** in emulsion droplets

→ **meet consumer requirements** by incorporating them in a product of interesting texture: *extruded cereals*

**Problems in process design:**
- emulsification combinable with extrusion process?
- thermal and mechanical stresses on (a) emulsion droplets and (b) bioactives

Parameters influencing the stability of bioactives and product quality attributes

- Emulsifiers
- Screw speed
- Feed rate
- Screw geometry
- Die geometry
- Water content
- Lipid content

Extruder: Coperion W&P ZSK 26 Mc