

IMM/Statistics **Case study** DTU
A study of frozen pea products


Aim: Investigate the quality of peas.

Design (Phase 1):

A full 4x2x2 factorial:

- 4 sizes (very small, small, medium, large)
- 2 sucrose levels (low, high)
- 2 colour levels (light, dark)

Chosen to span(represent) the variation of peas on the danish market based on prior knowledge about important properties in peas.




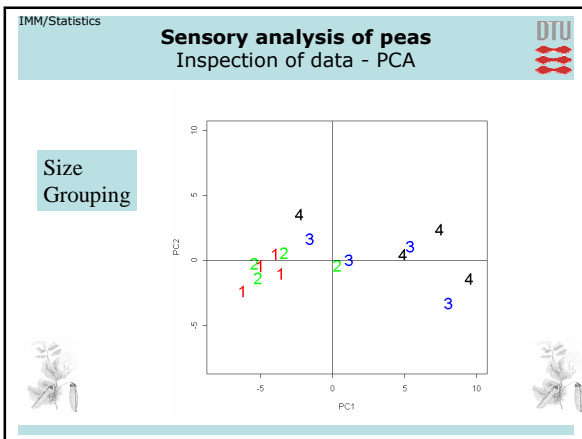
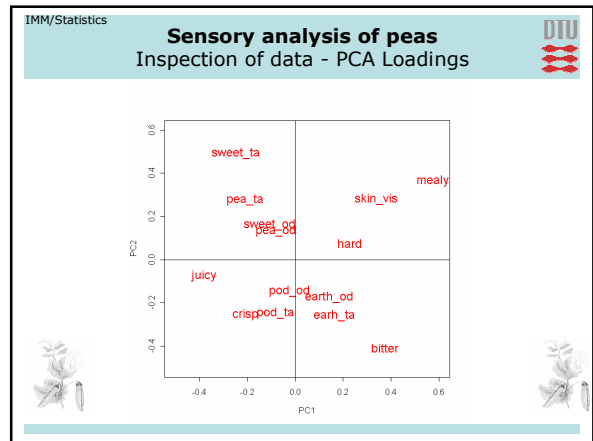
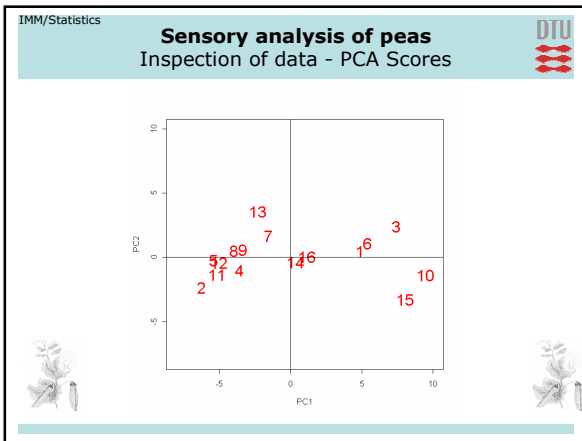


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Measurements:

- Near Infrared (NIR) Spectroscopy
- Chemical measurements
- Consumer survey
- Sensory profiling

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IMM/Statistics **Relating sensory profiles to other data** DTU

Regression situations

Product-by-Wavelength Chemical/Instrumental	Product-by-Attribute Sensory Average	Product-by-Consumer Consumer preferences
[]	(1) []	(2) []

(1) and (2) Multivariate calibration, multi-collinearity, biased regressions: PCR, PLS, Ridge, Generalized Ridge etc.

(2) Segmentation issue/clustering

Relating sensory profiles to consumer preference data



Poulsen, C.S., Brockhoff, P.B. and Erichsen (1997) Latent class
random coefficient principal component regression:

