Dosing n-alkanes:
New methods imposed by labour safety legislation

EGF, 4-8 september 2016, Trondheim Norway

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Introduction

- Dosing n-alkanes in the Netherlands
- Mixing n-alkanes with concentrates
  - 800-1000 mg/kg
  - Feed portions of 500 gram concentrate each milking
- Paper bolus method
  - Daily dosing of a paper bolus
  - Considered as severe impact on the animal
  - Some cows regurgitated the paper bolus with rumination
Heating soybean meal at 80°C
Dissolve n-alkane in heptane
Mixing the warm soybean meal with n-alkanes in a paddle mixer

50 g n-alkane mixed with 5 kg soybean meal
Heating soybean meal + n-alkanes at 80°C

After evaporating the heptane for 48 h
Include soybean/n-alkane in a feed
Feeding concentrates in milking parlour
Method is regarded as unsafe

- Processing large quantities heptane (20 L) and soybean meal (200 kg) is not possible in a laboratory
- So I did it in a barn
- Intervention of the labour safety and environmental department
- Stopped my work immediately
Method is regarded as unsafe

- Inhaling heptane can cause:
  - Brain damage
  - Lung Damage
- Emission to the environment
  - Is prohibited
  - Removal from the ventilation system
- Heptane: Fire and explosion danger
  - Electric equipment
  - Warm heptane -> evaporates
Alternative method

- No longer use of heptane
- Melting the alkanes
  - Top dressing 20 gram of n-alkane on 2 kg soybean meal
  - Heating in an oven for 72 h at 80 °C
  - Cooling down -> “Cakes”
  - Crumbelingu of the cakes in mill
  - Inclusion in a compound feed