

Dosing n-alkanes:

New methods imposed by labour safety legislation

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Introduction

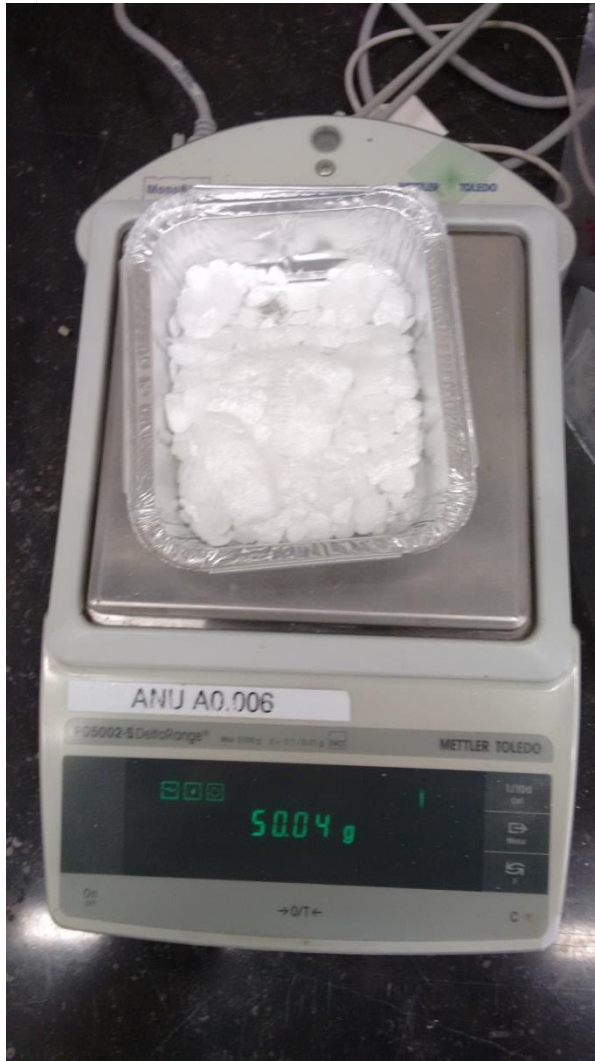
- Dosing n-alkanes in the Netherlands
- Mixing n-alkanes with concentrates
 - 800-1000 mg/kg
 - Feed portions of 500 gram concentrate each milking
- Paper bolus method
 - Daily dosing of a paper bolus
 - Considered as severe impact on the animal
 - Some cows regurgitated the paper bolus with rumination



Heating soybean meal at 80C



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 80C



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
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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"
 - Crumbeling of the cakes in mill
 - Inclusion in a compound feed



