Feeding experiments for dairy cows

Aim

- Effect of:
    - roughage quality
    - concentrate composition and allowance
    - additives
- On:
    - feed intake and
    - milk production and composition
    - utilisation of nutrients

Execution

- Animals in free stall
- Individual feeding of basal diet and concentrate:
    - Calan gate system
- Basal diet:
    - ad libitum
    - grass silage, corn silage and supplements
- Concentrate separate according to scheme
- 2 times daily milking

Lay out

- 2 to 8 treatments
    - 12 to 16 animals per treatment
- 24 to 120 dairy cows
    - heifers and older animals
- Complete randomised block design
    - with or without pre-period
    - 6 to 24 weeks

Results

	Lactation stage			
	Begin		Mid	
	Mean	lsd[1]	Mean	lsd[1]
Intake (kg DM/d)				
Roughage	14.0	1.00	15.0	0.75
Concentrate	10.0	0.25	8.0	0.50
Total	24.0	1.00	23.0	1.00
Production				
Milk (kg/d)	42.0	1.5	33.0	1.0
Protein (g/d)	1350	50	1150	40
Fat (g/d)	1700	75	1450	60
Protein (%)	3.20	0.10	3.45	0.05
Fat (%)	4.10	0.20	4.50	0.15
Urea (mg/dl)	20	2.0	20	1,8

[1] lsd = least significant difference

Observations

- DM intake basal feed and concentrates
- Milk production and weight
- Milk composition
    - fat, protein, lactose, urea, SCC
    - fatty acids, acidity of milk fat, hormones
- Fecal excretion, activity and rumination
- Body condition score
- Blood parameters
    - NEFA, βHBA, glucose, hormones
- Health and fertility data