



Nutrition Management Module

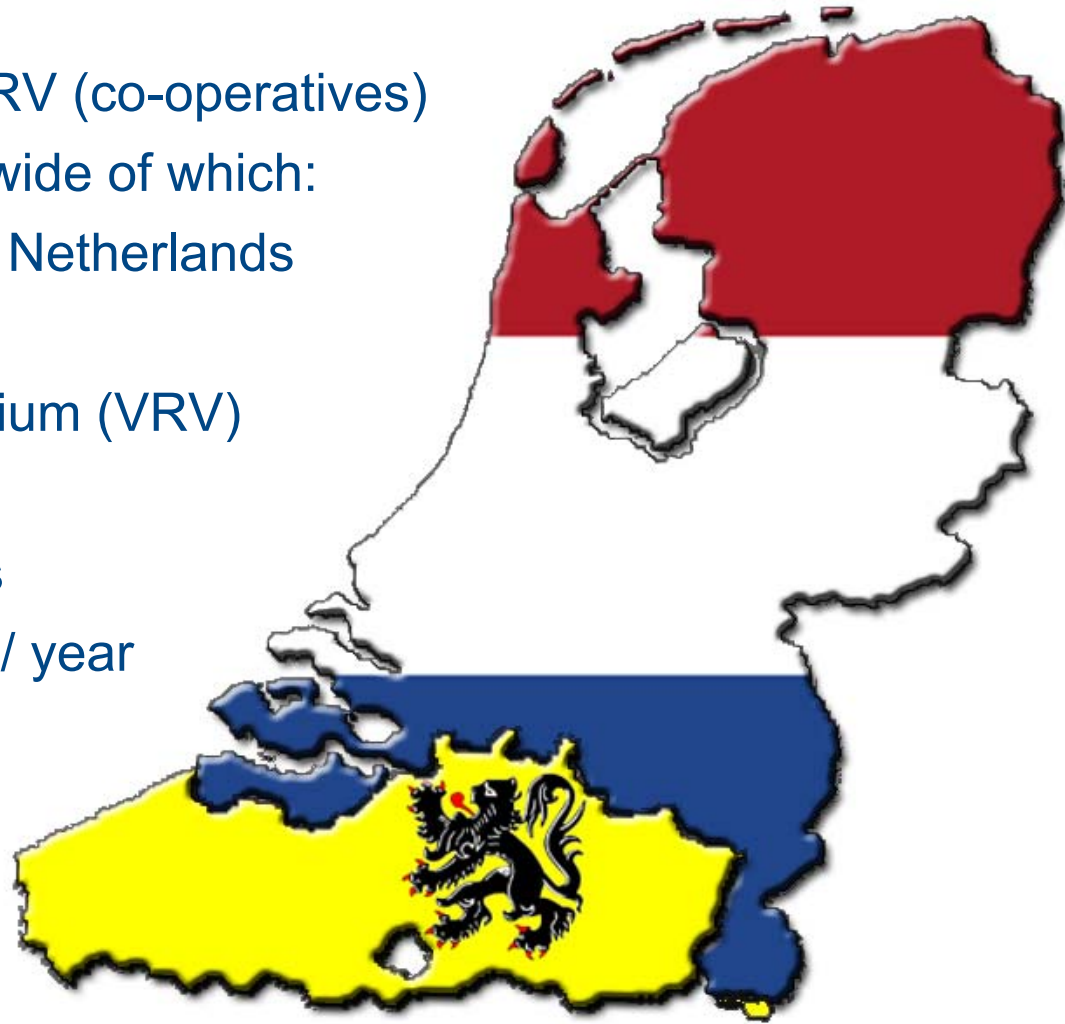
with new detection method for subclinical ketosis via milk recording

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ICAR: Development of Off-farm recording & analysis

General facts CRV 2012

- Owners: CR Delta and VRV (co-operatives)
- 50.000 customers world-wide of which:
 - 24.000 members in the Netherlands (CR Delta)
 - 8.000 members in Belgium (VRV)
 - customer
- 1.300 full time employees
- 154 million euro turnover / year



CRV global companies 2012



Looking after the interests of members and customers in the field of cattle improvement through:

- Genetic material:
 - breeding program and breeding products
 - sales of semen and embryos
 - offering genomic tested semen and sexed semen
- Management support and services:
 - Services (AI, Pregnancy diagnosis, **Milk recording**)
 - Central data storage and analysis (**Veemanager online** management program)
 - Herd management support

Milk recording in The Netherlands and Belgium

- milk recording samples 10,6 million in NL
- milk recording samples 1,3 million in Belgium
- 16000 farmers in NL, 93% of the market
- 2400 farmers in BE, 45% of the market
- **Veemanager:**
 - online management program, accessible everywhere
 - 9.500 users, around 50% of the market
 - modules for milk recording, animal health, fertility, registration, breeding, mineral management

Milk recording analysis in all samples

- fat percentage
- protein percentage
- cell count
- ureum
- lactose



- And had a wish to have a more accurate parameter then fat/protein ratio, to detect subclinical ketosis on herd level

What is ketosis?

■ Clinical Ketosis

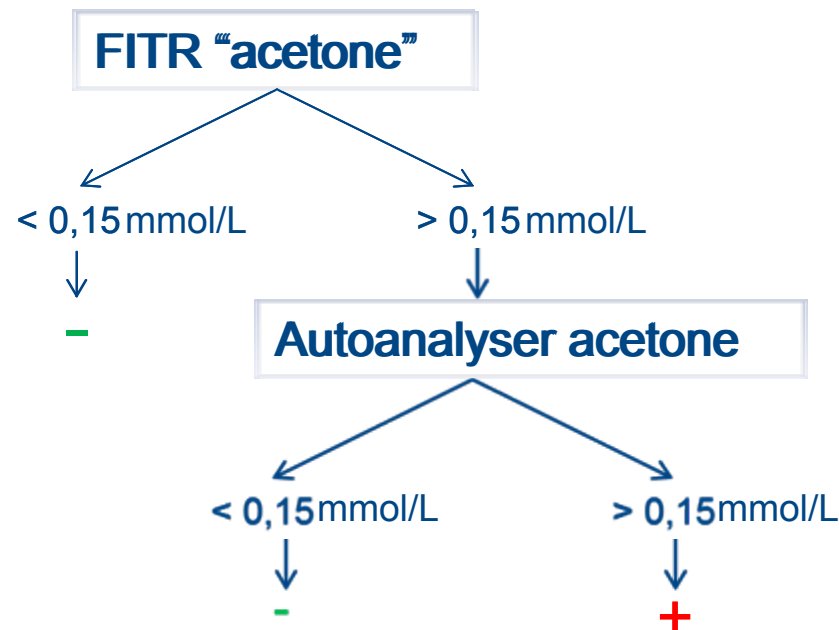
- clear symptoms
- decreased consumption of concentrate
- animal is slow
- neurological symptoms possible
- treatment: medical treatment on individual level

■ Subclinical Ketosis

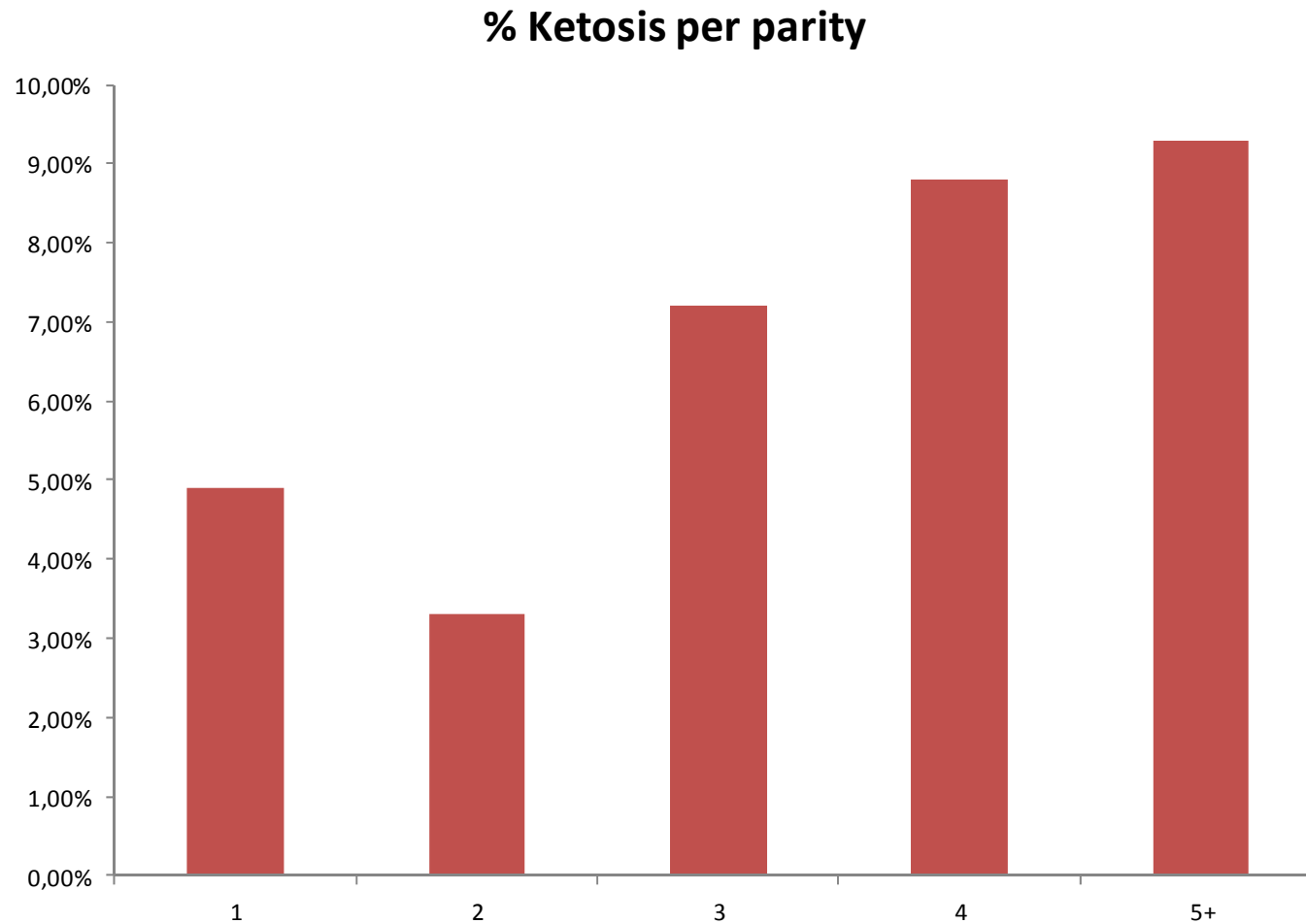
- metabolic disease (especially occurring in early lactation)
- an increase of ketone bodies in blood (ketosis)
- subclinical: few/no symptoms
- acetone and β -hydroxybutyrate are ketone bodies
- treatment: adjust diet and/or management on herd level

New method for detection of subclinical ketosis in milk

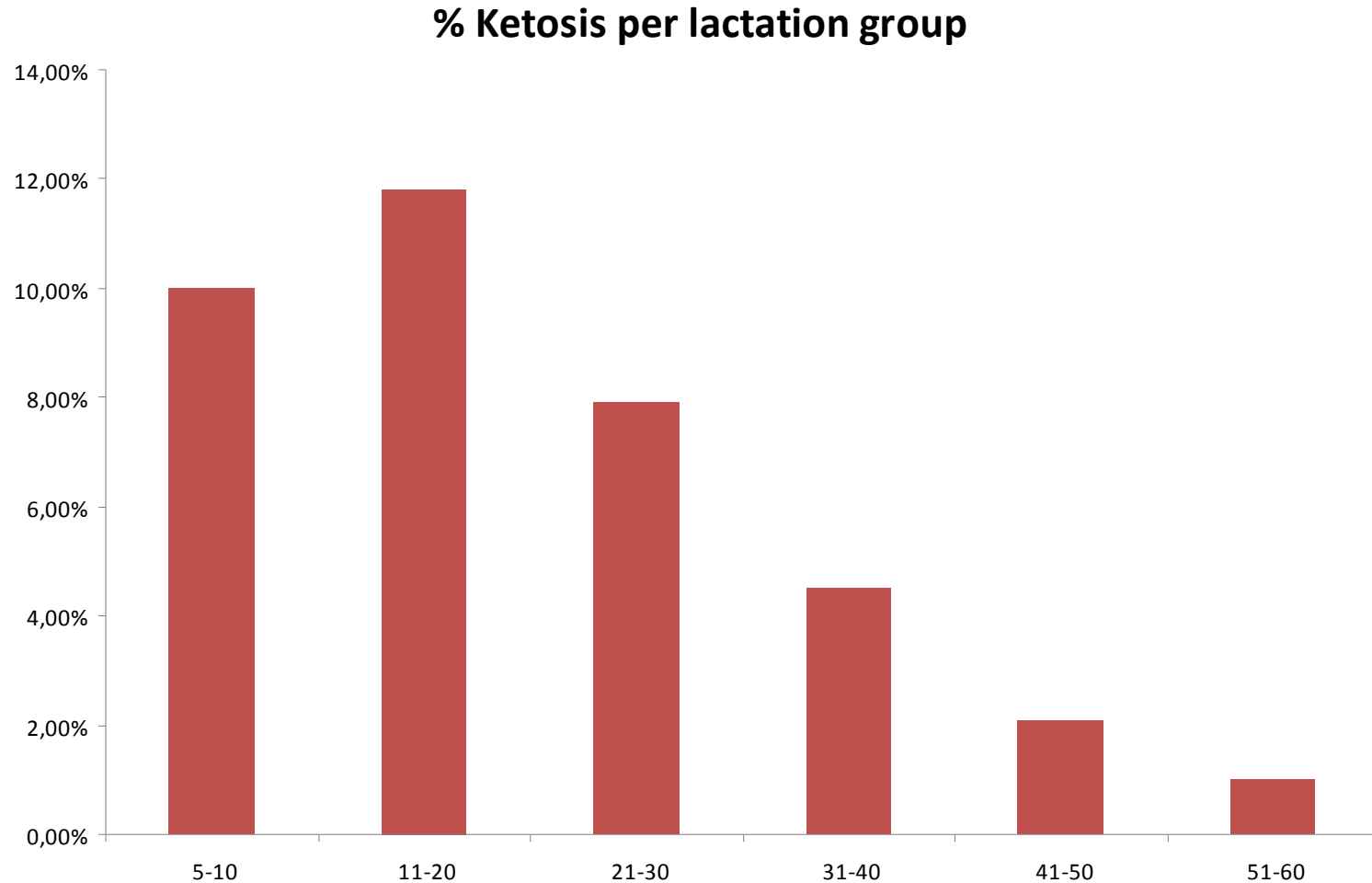
- A field trial was performed in collaboration with Utrecht University to develop a new method
- At this moment we detect ketosis in milk recording samples:



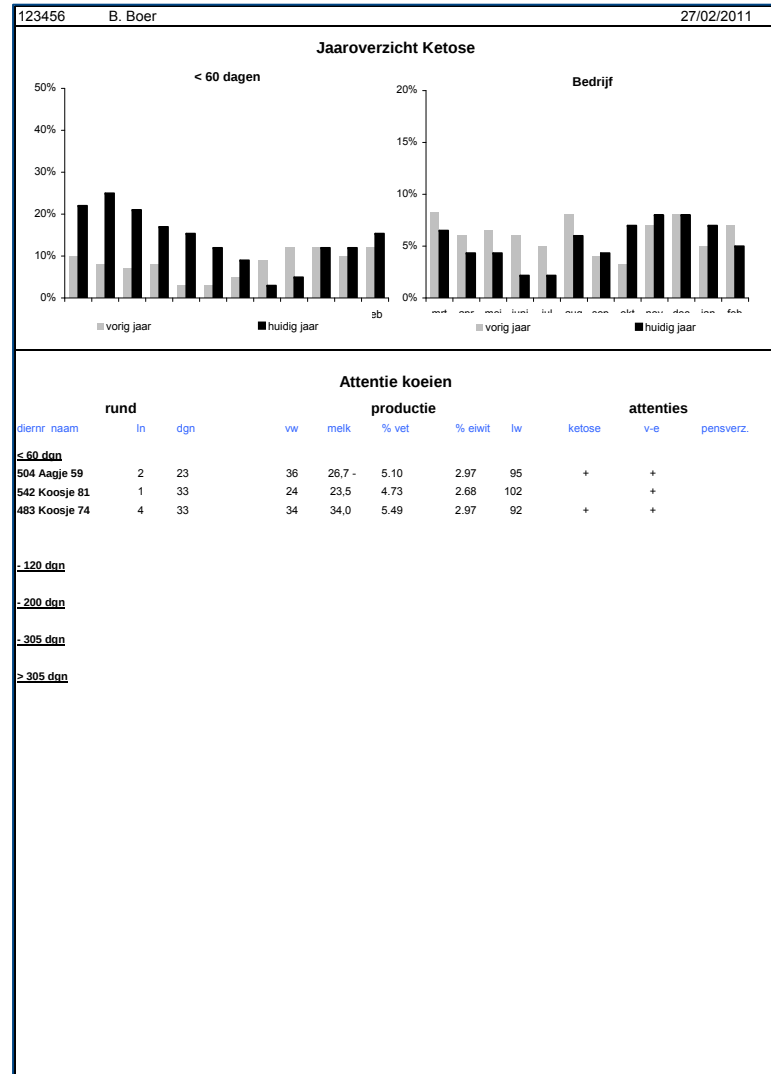
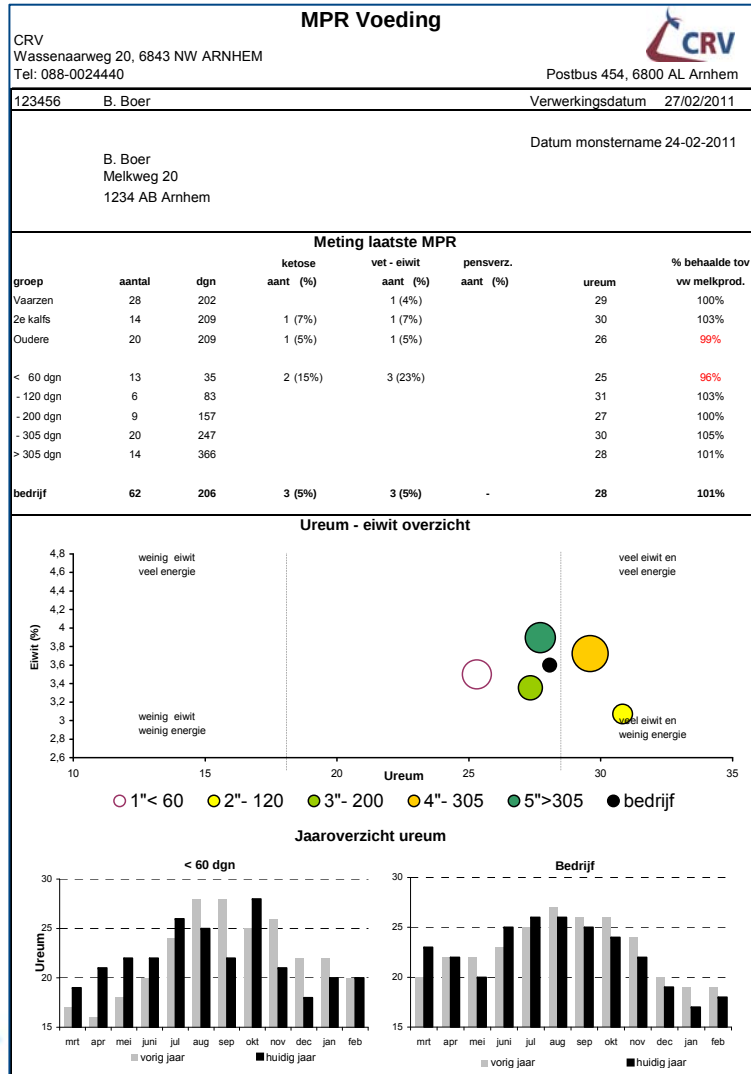
Results October-November 2011



Results October-November 2011



NEW: "Nutrition Management Module"



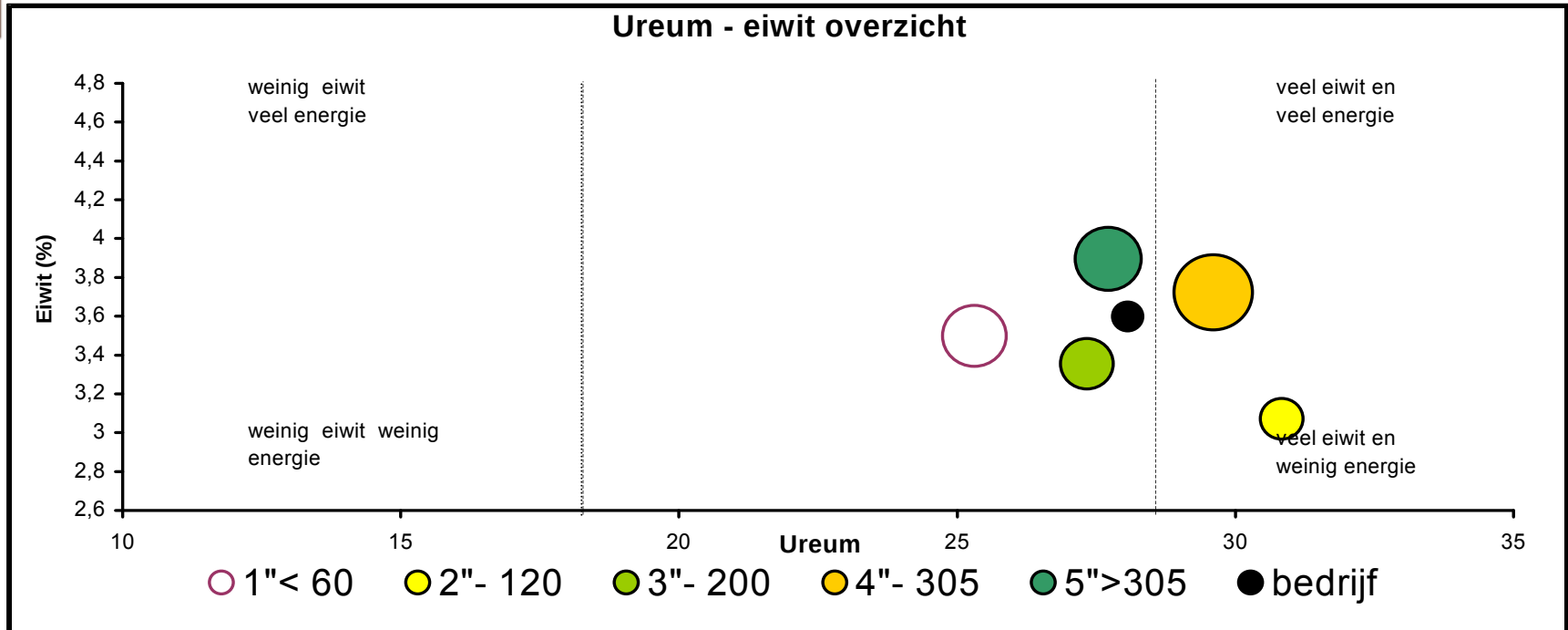
Milk recording results

Meting laatste MPR							
groep	aantal	dgn	ketose aant (%)	vet - eiwit aant (%)	pensverz. aant (%)	ureum	% behaalde tov vw melkprod.
Vaarzen	28	202		1 (4%)		29	100%
2e kalfs	14	209	1 (7%)	1 (7%)		30	103%
Oudere	20	209	1 (5%)	1 (5%)		26	99%
< 60 dgn	13	35	2 (15%)	3 (23%)		25	96%
- 120 dgn	6	83				31	103%
- 200 dgn	9	157				27	100%
- 305 dgn	20	247				30	105%
> 305 dgn	14	366				28	101%
bedrijf	62	206	3 (5%)	3 (5%)	-	28	101%

Last milk recording results:

- parity groups and lactation groups
- all nutrition related alerts combined

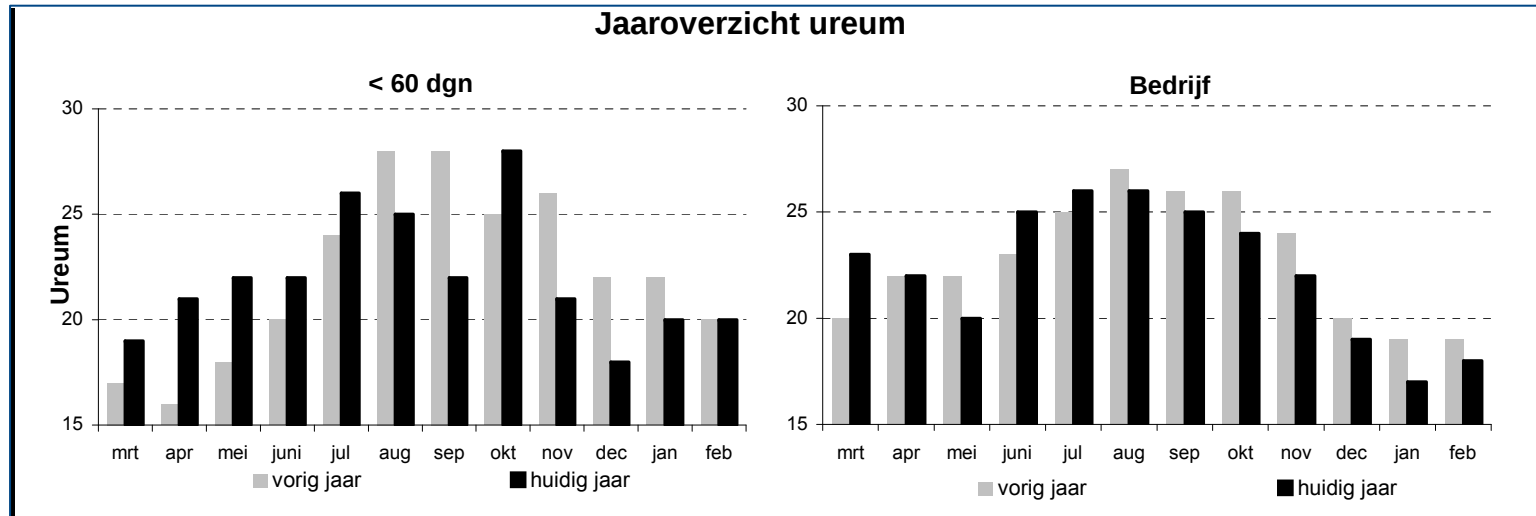
Milk recording results



Urea - protein overview

- lactation groups

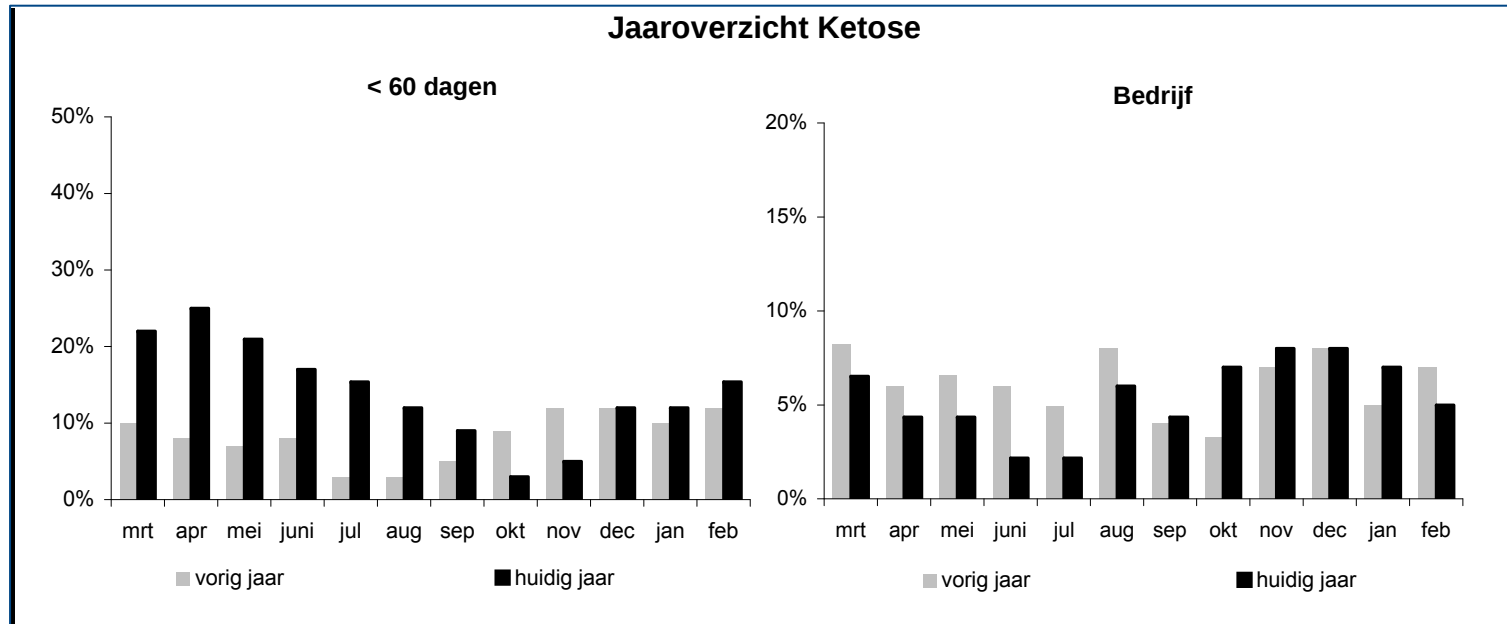
Milk recording results



Overview of last 2 years urea

- cows < 60 days lactation
- herd level

Milk recording results



Overview of last 2 years ketose

- cows < 60 days lactation
- herd level

Milk recording results

Attentie koeien										
rund			productie					attenties		
diernr naam	ln	dgn	vw	melk	%vet	%eiwit	lw	v-e	ketose	pensverz.
<u>< 60 dagen</u>										
504 Aagje 59	2	23	36	26,7 -	5.10	2.97	95	+	+	
542 Koosje 81	1	33	24	23,5	4.73	2.68	102	+		
483 Koosje 74	4	33	34	34,0	5.49	2.97	92	+	+	
<u>- 120 dagen</u>										
<u>- 200 dagen</u>										
<u>- 305 dagen</u>										
<u>> 305 dagen</u>										

- In an overview all animals with an alert for possible nutrition related problems

Benefits of “Nutrition Management Module” of CRV

Benefits for farmers:

- Overview of animals with nutrition related problems
 - decrease of economical losses by decreased milk production
 - increase of animal health

Benefits for advisors/veterinarians

- All milk recording information is available of all farmers performing milk recording
 - effect of changes in diet can be followed
 - link between farmer and nutrition advisor/veterinarian

Benefits for CRV:

- New information product on animal health
- In the future possible to develop a new breeding value “ketosis”



Future

- New method for detection of subclinical ketosis in milk

- A model is designed by using:
 - * FTIR “acetone” and “BHBZ” and fat and protein concentration
 - * cow characteristics; lactation days, parity
 - * environment; season
- A paper subscribing this method is accepted to Journal of Dairy Science by van der Drift et al. (Utrecht University)

