

# Pasture Herbs & Health of Dairy Cows



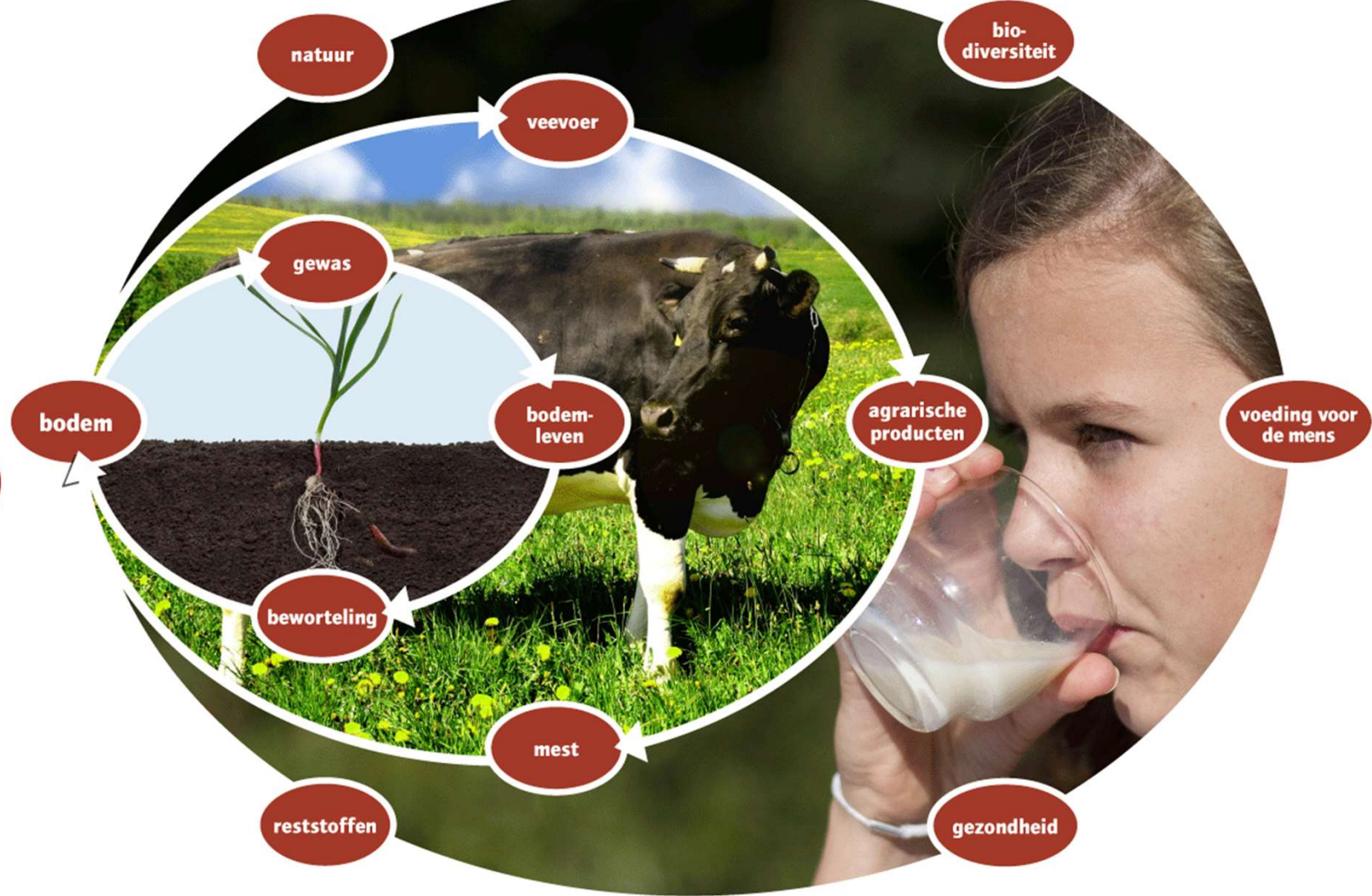
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# System Approach

# Concept Development



**LOUIS BOLK**  
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# Participatory Research

# Proactive Networks

# Herbal rich pastures?

## Four returning questions . . . . .

1. **What do you mean with ‘herbal rich pastures’?**
2. How do I keep herbs in my pastures?
3. How do herbs fit in my farming system?
4. Economically viable?



**Area specific vegetation (Alblasserwaard, ZH)**

source: Dick Kerkhof – NVW Vijfheerenlanden, 2017



Old grassland (Wiuwert, FR)

source: G.Iepema, 'Goud van Oud', 2014

drill-seeded pasture (Nieuwerkerk, Zeeland)

source: J.P.Wagenaar – 'vooruit met het kruid' 2014





re-sown, Herbal rich pasture (Nieuwerkerk, Zeeland)

Bron: J.P.Wagenaar – 'vooruit met het kruid' 2014



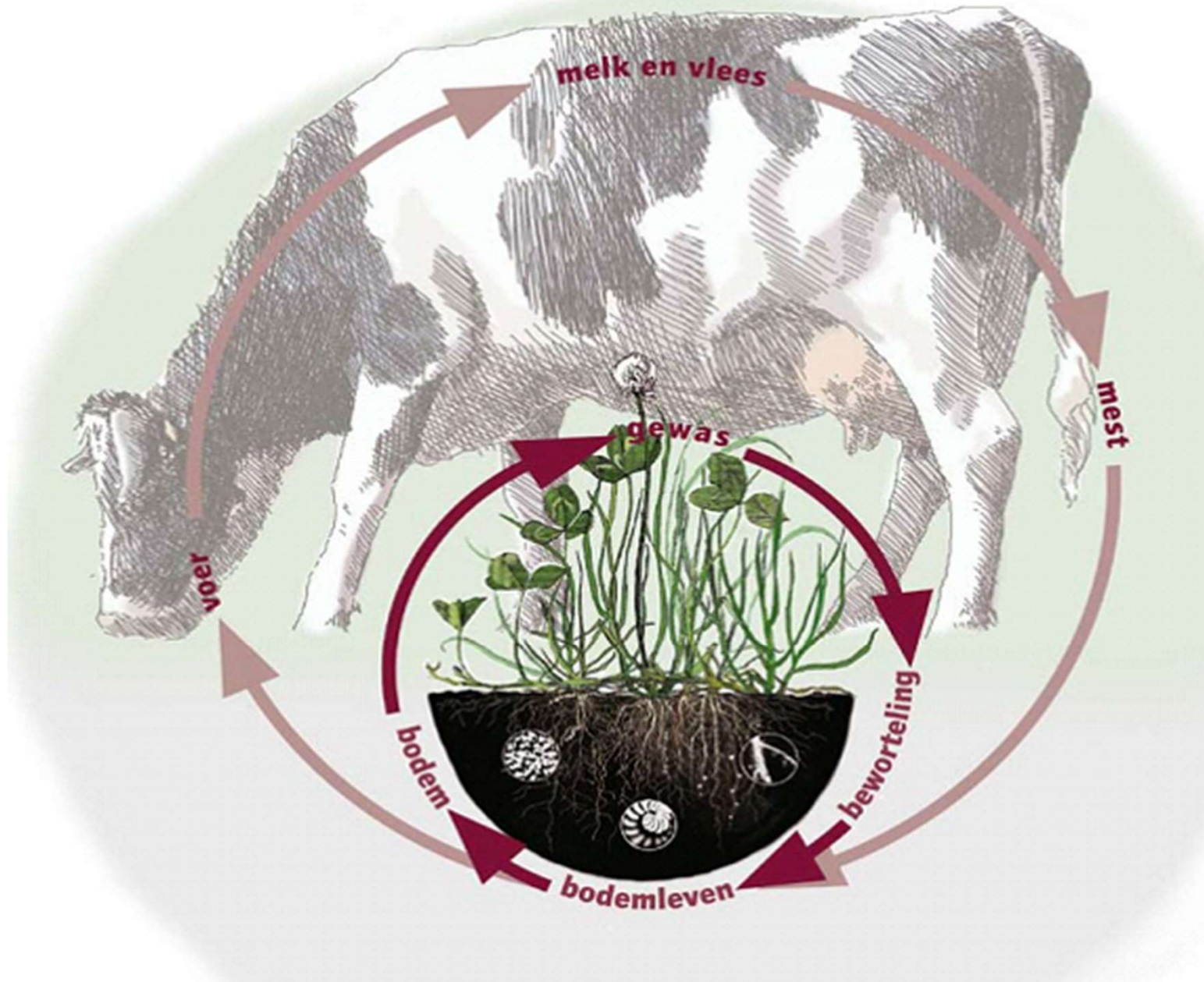
experimental pasture with plantain (VIC,Zegveld, ZH)



Bron: proef Zegveld, 2017

# Herbs & Health of Dairy Cows?

# 'The system'



# Herbs in dairy pastures:

- 9. Biodiversity +
- 10. Landscape +
- 11. IMAGE +

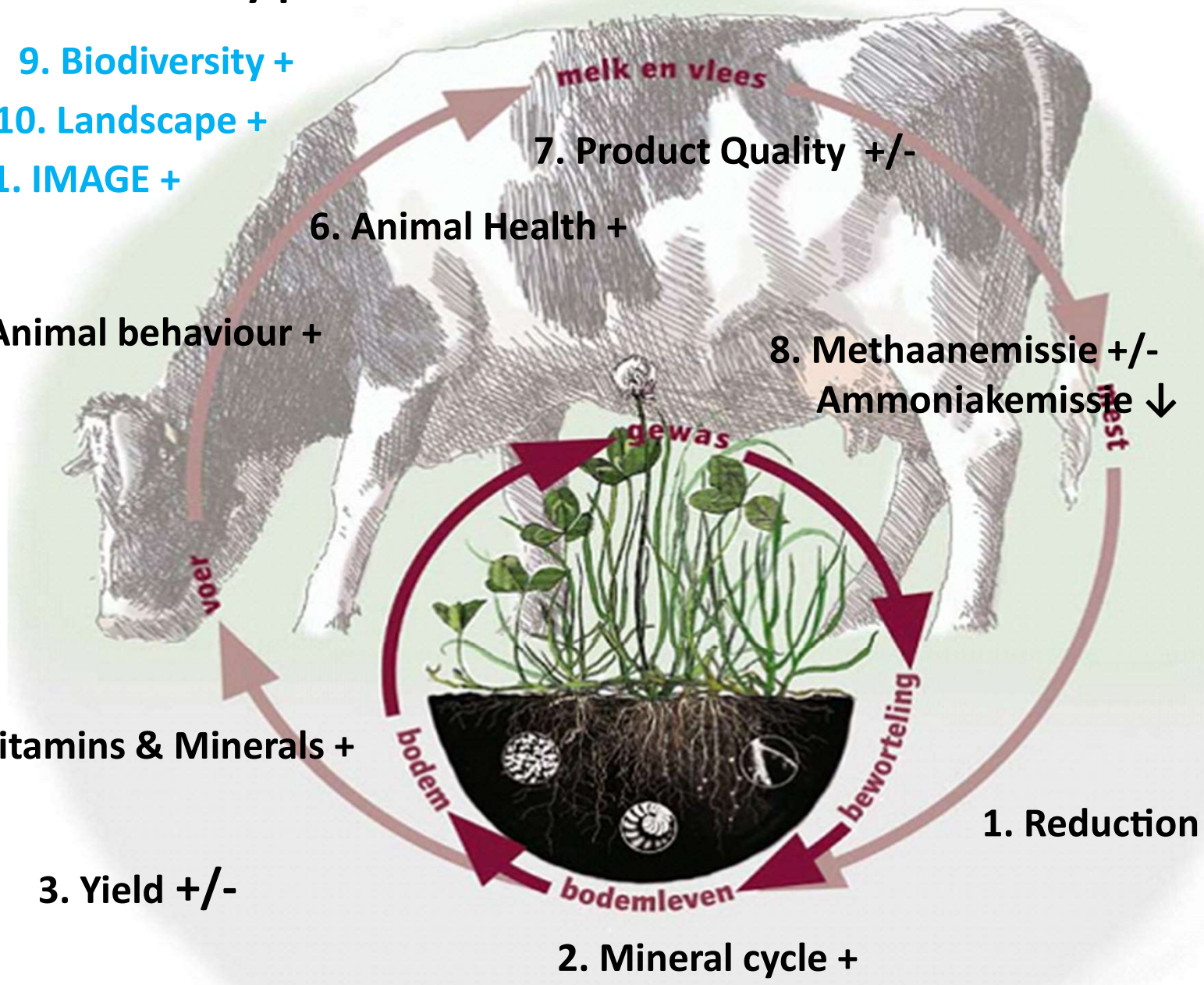
- 6. Animal Health +
- 5. Animal behaviour +
- 4. Vitamins & Minerals +
- 3. Yield +/-

7. Product Quality +/-

8. Methaanemissie +/-  
Ammoniakemissie ↓

1. Reduction OM ↓

2. Mineral cycle +  
Grazing pressure



## 4. Vitamins & Minerals

Tabel 1. Gemiddeld mineralengehalte van verschillende kruiden bemonsterd op Nederlandse en Vlaamse biologische melkveebedrijven (n=aantal monsters).

		natrium	kalium	magnesium	calcium	fosfor	mangaan	zink	ijzer	koper	kobalt	selen	zinkval	molybdeen
	n	Na	K	Mg	Ca	P	Mn	Zn	Fe	Cu	Co	Se	S	Mo
		g	g	g	g	g	mg	mg	mg	mg	µg	µg	g	mg
Gras	24	1,6	35	2,3	6	4,9	58	40	251	9	105	97	3,7	4,0
Witte klaver	22	1,4	32	3,4	13	3,7	45	39	156	10	97	98	2,5	3,4
Cichorei	28	<b>3,0</b>	48	3,1	14	5,2	50	<b>97</b>	173	<b>17</b>	119	<b>182</b>	<b>4,4</b>	2,4
Smalle weegbree	22	1,3	39	2,8	15	4,7	39	<b>61</b>	137	11	110	120	4,0	1,8
Duizendblad	20	0,5	<b>51</b>	2,8	11	5,5	57	45	289	<b>15</b>	146	106	2,5	2,4
Paardenbloem	8	1,3	<b>53</b>	2,9	11	5,1	34	<b>53</b>	<b>596</b>	13	239	<b>248</b>	<b>4,5</b>	2,7
Wilde peen	2	0,6	46	2,8	13	5,6	103	<b>77</b>	189	10	73	67	3,4	3,8
Norm koe (30 L CVB)		1,3	7,7	2,3	3,7	2,9	40	30	10	12	100	170	2,0	
Norm geit (4 L melk CVB)		1	7,9	1,4	3,2	3,7	40	24,4	9,4	11,5	100	130	2,0	

## 5. Animal preferences: tast, needs, intake +/-



Rye grass & white clover +	Index Goats
Control	100
Lucerne	142
Red clover	143
Rietzwenk	65
Chicory	83
Plantain	85

## 6. Antibiotic use

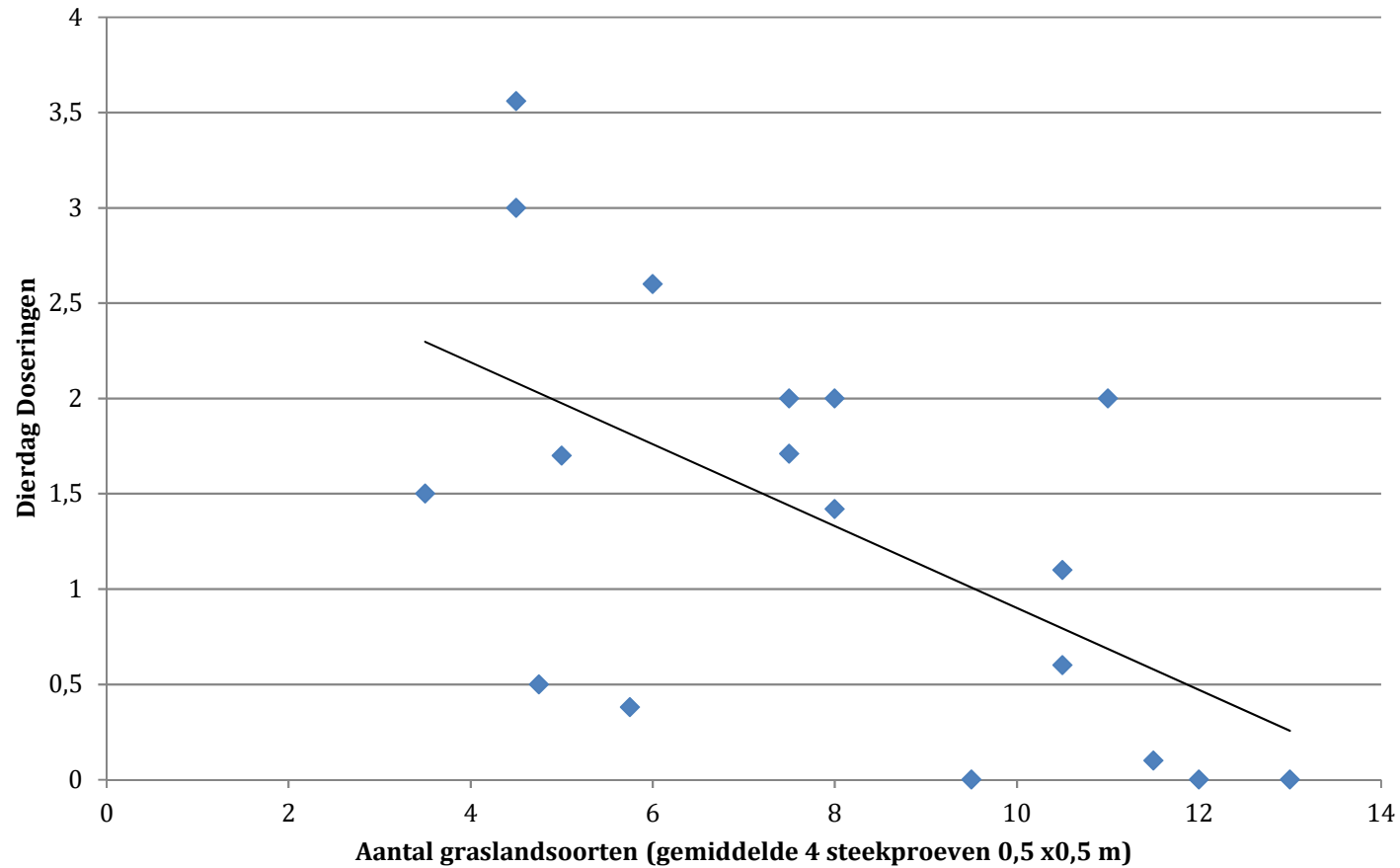
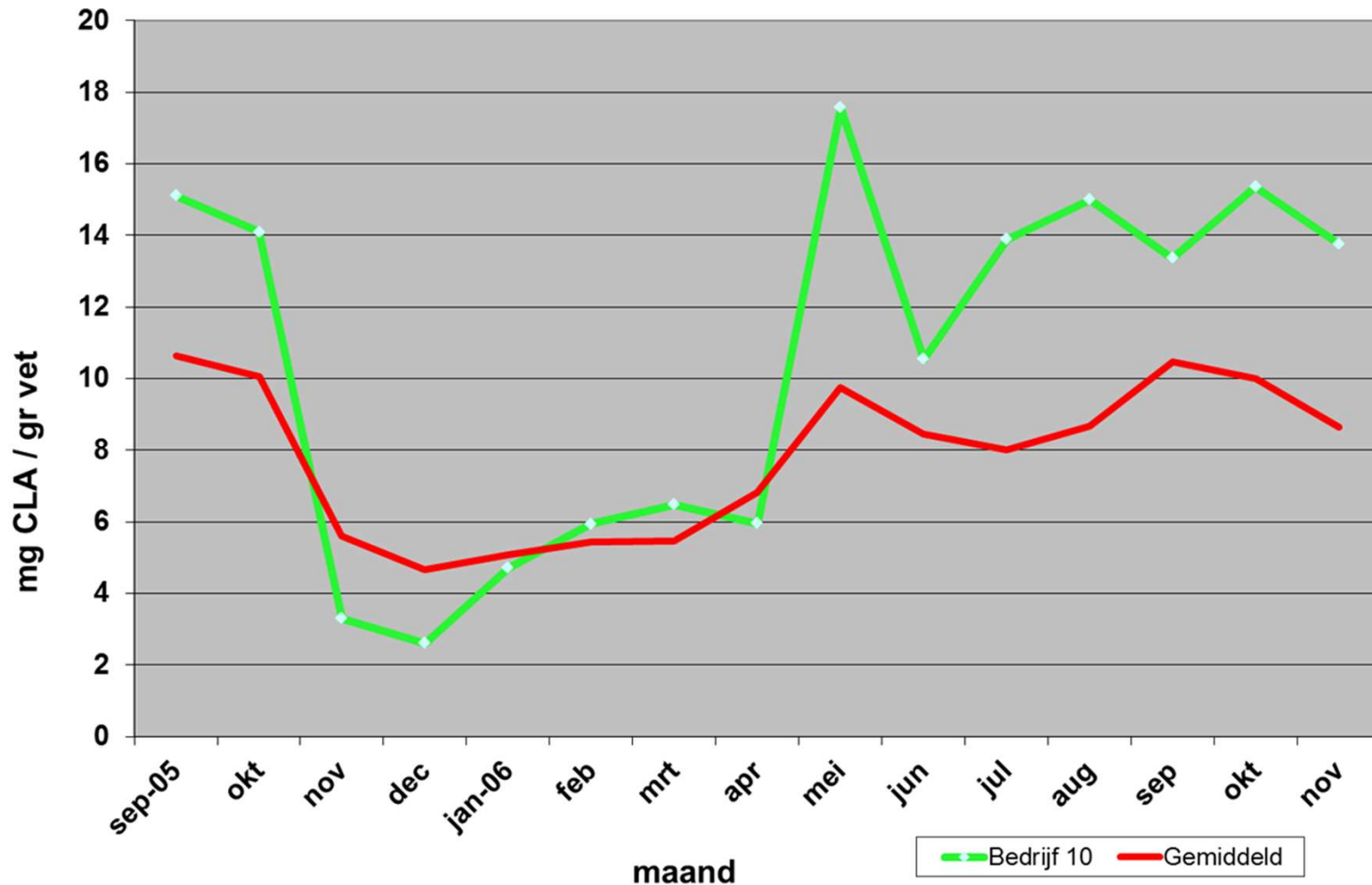


Figure 2.1.6.2: Correlation between total number of species and DDD antibiotics on 20 dairy farms in NL (Van Eekeren et al, 2015)

# 7. Product Quality

## Effect of herbs / grasses on fatty acid composition in milk



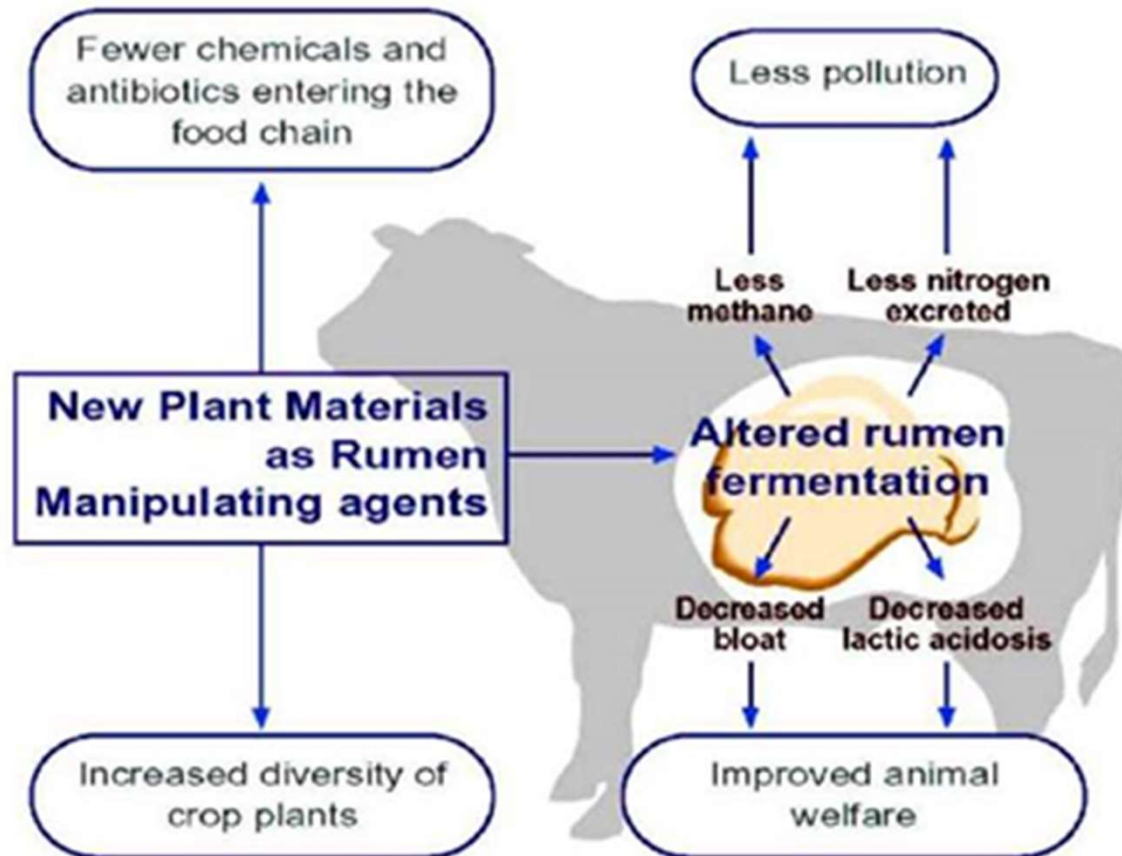
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In weideseizoen scoort Friese melkveehouder (groen) met kruidenrijk grasland, beter dan de 15 bedrijven die sturen op meer CLA en Omega3 vetzuren d.m.v. voeren olie, rode klover etc.



## 8. Methane emission



## 9. Diversity: bees & insects

Soort	jan	feb	mrt	april	mei	juni	juli	aug	sept	okt	nov	dec	Kwaliteit
<b>Akkerdistel</b>						5	5	5	5				N+S
Boerenwormkruid							3	3	3				n+s
Cichorei							3	3	3				n+s
Duizendblad						1	1	1	1				-
<b>Esparcette</b>					5	5							N+S
Fluitenkruid					2	2							-
Gewone Berenklaauw						3	3	3	3	3			n+s, P
Herderstasje			3	3	3	3	3	3	3	3	3	3	n+s, P
Kamille reukeloze						1	1	1	1				-
<b>Karwij</b>					5	5							N+S
Klaver rood					1	1	1	1	1	1			-
<b>Klaver wit</b>					5	5	5	5	5	5			N+S, P
Kruipende boterbloem			2	2	2								S
<b>Luzerne</b>						4	4	4	4				N+S
Madeliefje				1	1	1	1	1	1				-
<b>Paardenbloem</b>			5	5	5				5	5	5		N+S, 2P
<b>Pimpernel</b>							4	4					N+S
Rolklaver, gewone						3	3	3	3				n+s
<b>Smalle weegbree</b>					3	3	3	3	3				S, geen n!
<b>Vogelmuur</b>	3	3	3	3	3	3	3	3	3	3	3	3	n+s, P
Wilde peen						4	4	4	4				N+S

Continuous pollen availability (pollen, **S**) is important lifeline for insects  
 Nectar (**N**) fuel for flying, feed for larvae and winter supplies  
**P** period





Bron: J.P.Wagenaar – project 'Krachtige Kruiden', 19 juli 2018

# What's next with pasture herbs?

1. Herbs are a perfect tool to apply a system approach; soil oriented – low fertilizer – attractive production: **make it work!**
2. It is not a single 'advantage' which counts, but the accumulated benefits of all the 'advantages' which make the difference: **build up the case!**
3. With farmers embracing pasture herbs, the system approach might require a system change: **added value to be consolidated in the market**

# Thank you for your attention

[www.louisbolk.org](http://www.louisbolk.org)

