SEVENTH FRAMEWORK PROGRAMME

Results 2015
Experimental farm–
Pilot farms

Aidan & Ann Power
Robotitc Farm
SME Farm IE

SME Farm DK
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Plan

- Nutritional grass values : from 2013-2015
- Use of the file « Grass observatory »
- Milk yield of pilot farms in 2015
- Influence of grazing on feeding costs
- Experimental farm: influence of milking permission and concentrate allocation

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Grass

Nutritional value

2015	2014
111	206
Samplings from end April till end September	Samplings from 11th April till 10th November
4 pilot farms Experimental farm	4 pilot farms Experimental farm

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Nutritional grass values from 2013 to 2015

		DM	CP	NDF	ADF	lignin	WSC
2015	Mean	20	197	465	243	31	143
	Min.	12	104	368	189	19	42
	Max	37	280	569	308	51	265
2014	Mean	19	205	452	240	28	141
	Min.	10,5	116	377	188	15	34
	Max.	29	323	574	300	47	262
2013	Mean	20	195	446	239	33	155
	Min.	10	84	362	188	21	84
	Max.	35	263	569	312	47	219

Values : g/kg DM; CP: crude protein; WSC: water soluble carbohydrates; NDF: neutral detergent fiber

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Nutritional grass values 2013 – 2015

		Digest.	VEM	DVE	OEB	FOM
2015	Mean	80,5	980	97	38	637
	Min.	62	789	62	-23	512
	Max.	93	1081	119	114	716
2014	Mean	83	996	100	43	641
	Min.	73	789	70	-44	502
	Max.	91	1096	118	156	702
2013	Mean	82	973	99	32	629
	Min.	62	813	58	-38	539
	Max.	90	1076	115	100	744

Values: g/kg DM; digestibility: %

DVE: darm verteerbaar eiwitf; OEB: Onbestendige Eiwit Balans

FOM: fermentescible organic matter

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Nutritional grass values: Farm by farm: 2014-2015

BE4

Values = g/kg DM

	Digest.	CP	WSC	NDF	VEM
2015	**81,3**	**197**	148	457	985
2014	83	205	143	455	985

Digest: digestibility (%); CP: crude protein; WSC: water soluble carbohydrates; NDF: neutral detergent fiber;

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Nutritional grass values: Farm by farm: 2014-2015

BE1

Values: g/kgDM

	Digest.	CP	WSC	NDF	VEM
2015	81	202	137	467	992
2014	84	214	144	449	1018
2013	85	206	164	425	1018

Digest: digestibility (%); CP: crude protein; WSC: water soluble carbohydrates; NDF: neutral detergent fiber;

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Nutritional grass values: Farm by farm: 2014-2015

BE2

Values: g/kgDM

	Digest.	MAT	sucres	NDF	VEM
2015	**82**	200	127	435	996
2014	84	208	145	446	1007
2013	83	181	180	450	997

Digest: digestibility (%); CP: crude protein; WSC: water soluble carbohydrates;
NDF: neutral detergent fiber;

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Nutritional grass values: Farm by farm: 2014-2015

BE3

Values: g/kg DM

	Digest.	MAT	sucres	NDF	VEM
2015	82	221	130	462	992
2014	85	228	133	445	1006
2013	81	212	139	449	958

Digest: digestibility (%); CP: crude protein; WSC: water soluble carbohydrates;
NDF: neutral detergent fiber;

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File « Grass Observatory »

Aims

- Evaluation of grass growth
- Evaluation of grass availability
- Decision support tool (cutting)

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File « Grass Observatory »

Start up:

- Repertory of parcels
- Measurement of parcels (GPS)
- Measurement of grass heights in all parcels every 10 days

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BE4

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Grass observatory

	Datum	Previous datum	Cows	Grass intake (kg MS/VL/j)	Grazing height (cm)		Days				Growth time (jours)	Growth (kg DM/ha/d)		
	14-07-15	2-7	72	9	5		27	of grass available			12	33		
		Area				Measured Height	Events	Useable Height	Grass cover	Available stock	Previous Height	Growth	Considered	Growth (DM/Ha/d)
	Parcels	Surface	Mesure initiale	Mesure finale	Nombre de mesures	Hauteur mes.	Evénements	Haut. utile	Densité	Stock dispo.	Haut. Préc.	Pousse	Prise en cpte	Pousse
N°	Name	(Ha)				(cm)	de la semaine	(cm)	(kg MS/cm/ha)	(kg MS)	(cm)	(cm)	0:non, 1:oui	(kg MS/ha/j)
1	PN 1	2,6064				7,8		2,8	230	1.679	9,3	-1,5	0	0,0
2	PN2	0,5				7,1		2,1	230	246	6,4	0,7	1	14,2
3	PN3	0,9				7,6		2,6	230	546	6,4	1,2	1	23,8
4	PN 4	3,13				9,9		4,9	230	3.542	6,6	3,3	1	63,6
5	PN5	1,3				8,1		3,1	180	714	7,7	0,4	1	5,3
6	Kirschvink 1	4,459				8,4		3,4	180	2.761	7,2	1,2	1	18,6
7	Kirschvink 2	3,719				9,1		4,1	180	2.751	10,1	-0,9	0	0,0
8	Lanterman F	0,5				7,5		2,5	180	225	7,1	0,4	1	6,0
9	Lanterman dvt Ruisseau	1,16				7,8		2,8	230	734	7,2	0,6	1	10,5
10	Lanterman derr Ruisseau	1,52				11,5		6,5	230	2.272	7,1	4,4	1	84,3
11	Parking 1	1,40				7,8		2,8	230	902	6,4	1,5	1	27,8
12	Kleinen 1	2,22				6,6	cut	1,6	230	827	10,1	-3,5	0	0,0
13	derrière ruisseau	0,80				8,2		3,2	230	587	7,0	1,2	1	22,8
14	Kleinen 2					8,5		3,5						
15														
16														
17														
18														
19														
20														
21														
22														
23														
24														
25														
26														
27														
28														
29														
	Total area	24,21 Ha								17.786				
	Area taken into account	15,67 Ha												

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BE4

Production parameters

Season	Month	MY (kg/cow/d)	DIM	Concentrates (kg/cow/d)	Milkings /cow/d
Winter	January	23,5	210	3,20	2,4
	February	24,0	196	3,30	2,5
	March	22,9	208	3,10	2,5
Mean		**23,5**	**205**	**3,18**	**2,5**
Summer	May	21,0	210	2,88	2,3
	June	20,7	219	2,61	2,3
	July	20,9	214	2,60	2,3
	August	22,7	223	3,14	2,3
Mean		**21,4**	**218**	**2,78**	**2,3**

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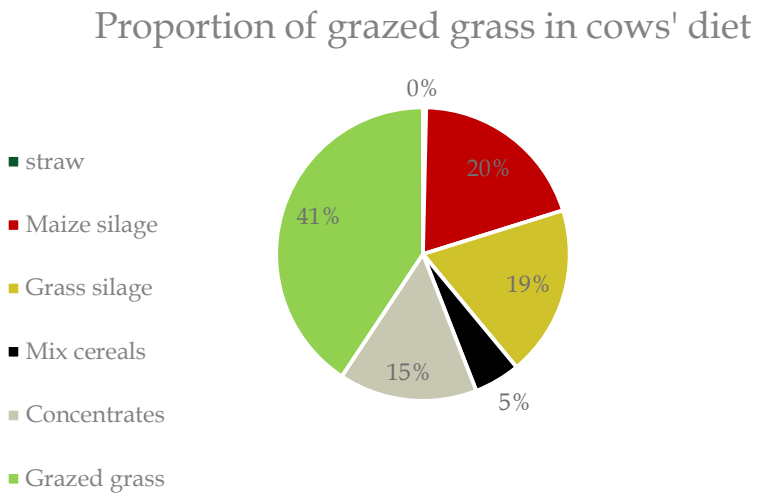
BE4: proportion of grazed grass in cows diet

July 2015



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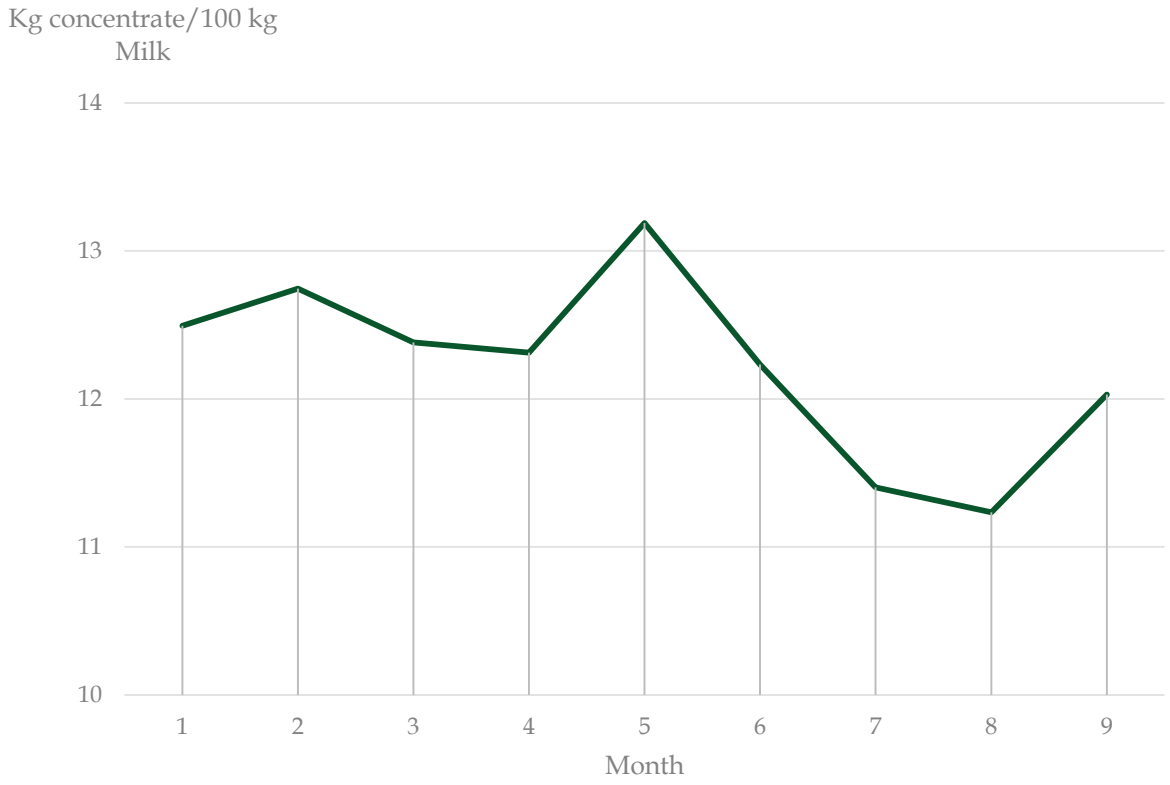
BE4: Use of concentrates



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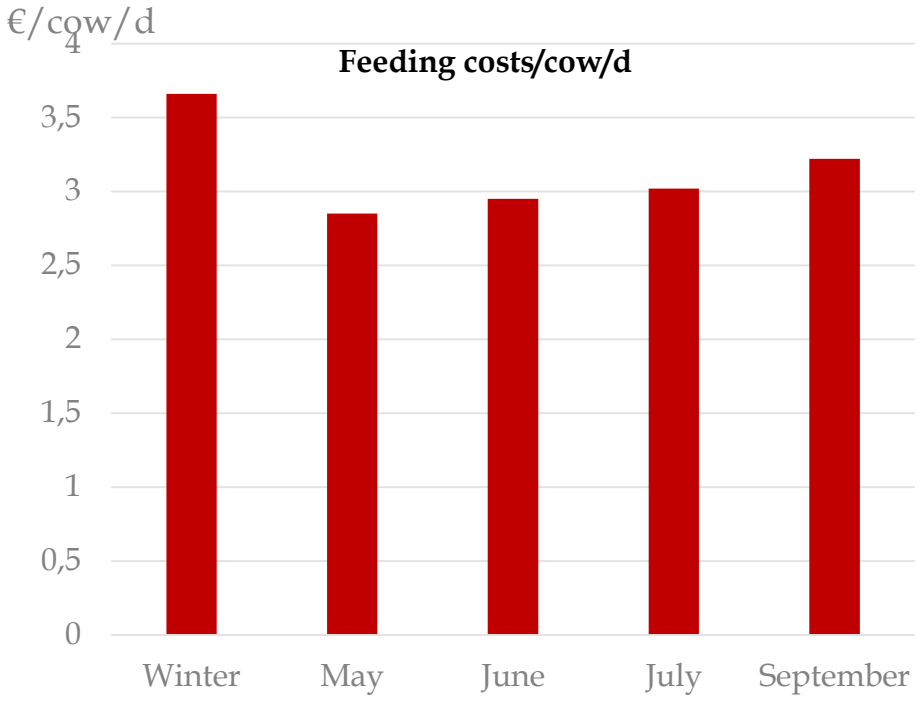
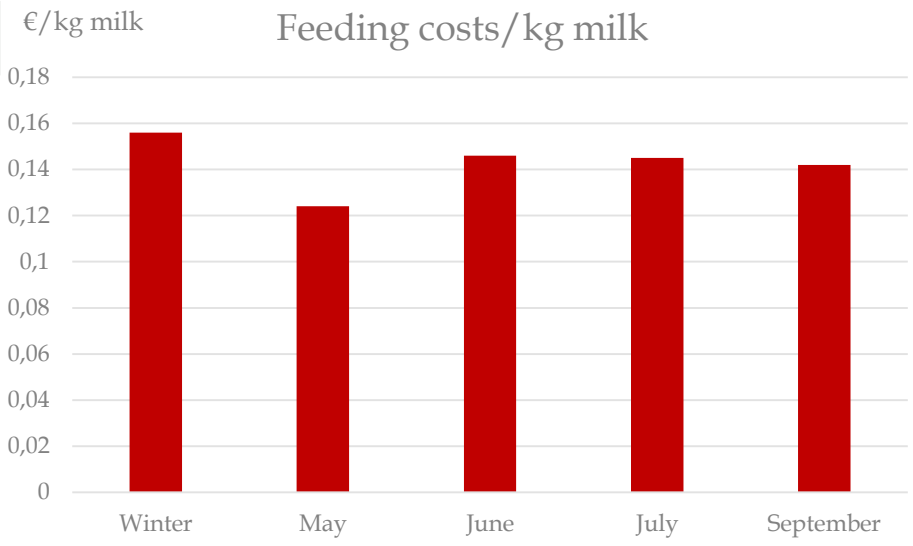
Feeding costs BE4

Feeding cost/cow/d	
Winter	3,66 €
May	2,85 €
June	2,96 €
July	3,02 €
September	3,32 €



Feeding costs BE4

Feeding costs/kg milk	
Winter	0,156 €/kg
May	0,124 €/kg
June	0,147 €/kg
July	0,145 €/kg
September	0,142 €/kg



BE2:
Milk yield parameters

Season	Month	MY (kg/cow/d)	DIM	Concentrates (kg/cow/d)	Milkings /cow/d
Winter	January	26,8	217	3,44	2,6
	February	26,4	216	3,51	2,7
	March	27,0	196	3,56	2,6
Mean		**26,7**	**209**	**3,50**	**2,6**
Summer	May	29,4	207	3,80	2,4
	June	26,6	215	3,42	2,5
	July	25,4	229	3,15	2,4
	August	25,9	239	3,17	2,5
	September	26,7	223	3,28	2,5
Mean		**26,8**	**221**	**3,37**	**2,5**

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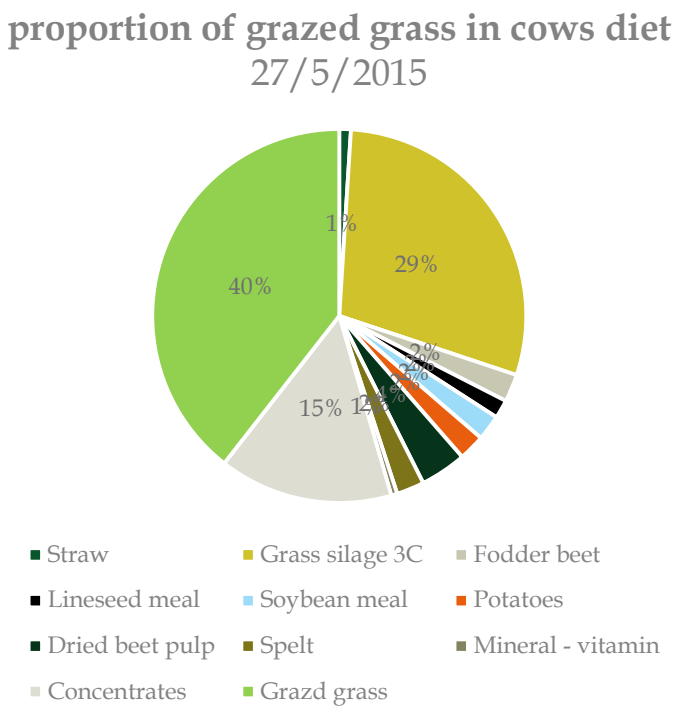
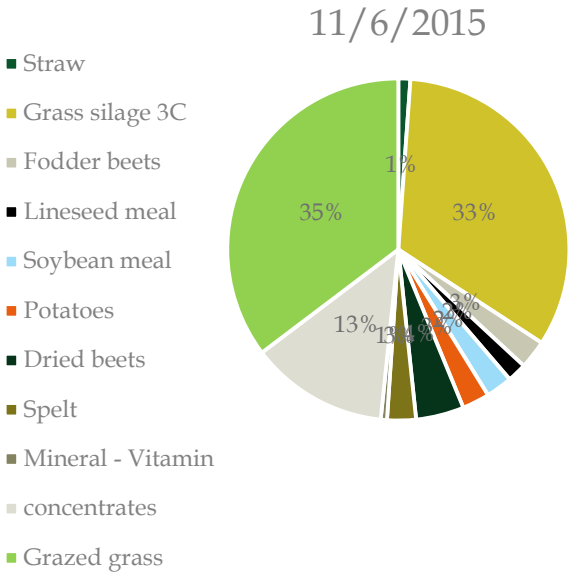
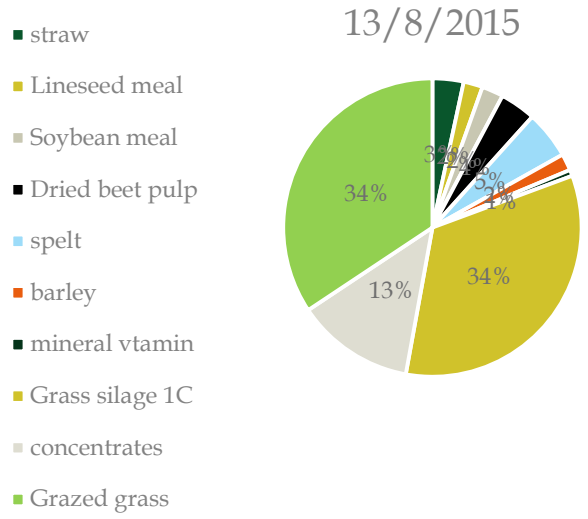
BE2







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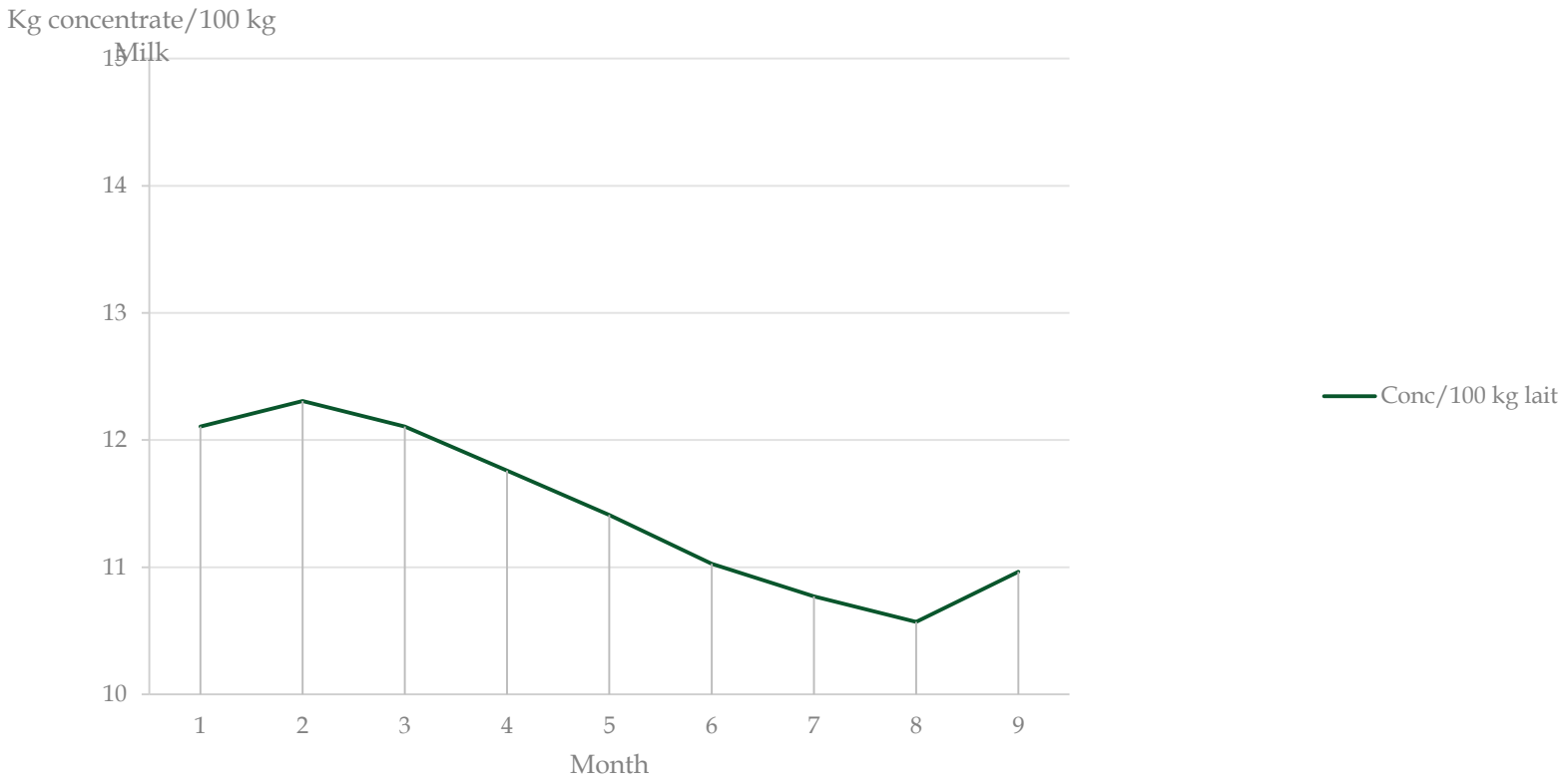
BE2

Milk yield parameters



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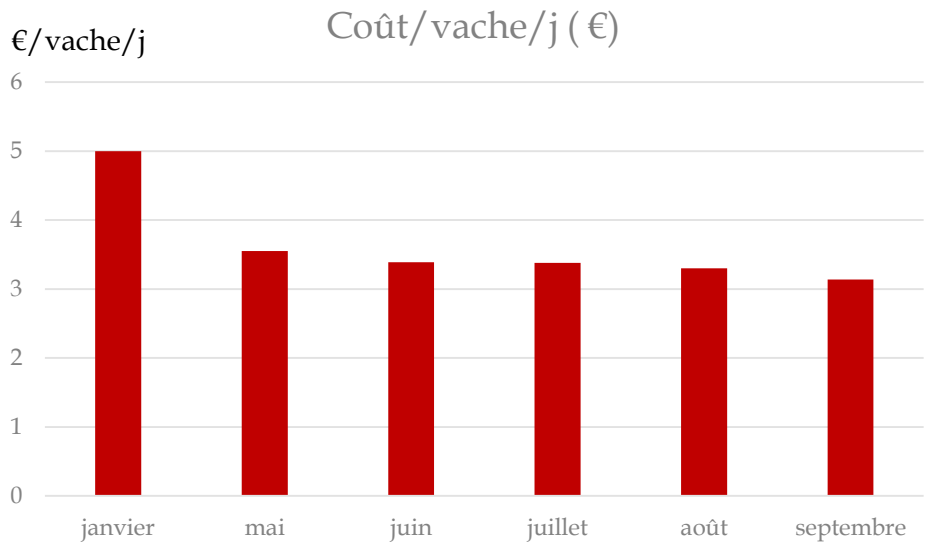
Feeding costs BE2

Coût alimentaire /vache/j	
Hiver	5,00 €
6 Mai	3,55 €
27 Mai	3,39 €
10 Juin	3,38 €
13 Août	3,30 €
9 Septembre	3,14 €



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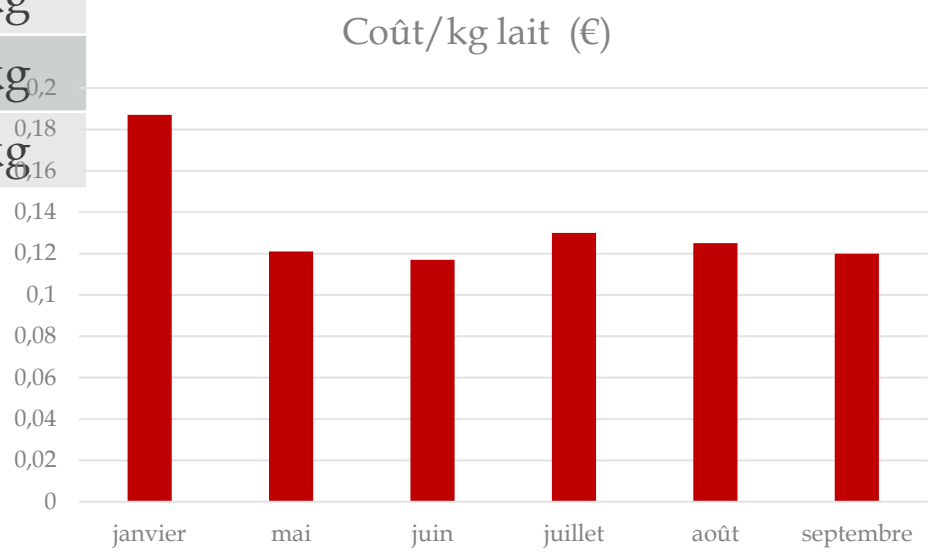
Feeding costs BE2

Coût alimentaire/kg lait	
Hiver	0,187 €/kg
11/5	0,121 €/kg
27/5	0,117 €/kg
10/6	0,130 €/kg
13/8	0,125 €/kg
9/9	0,120 €/kg



BE1

Milk yield parameters

Season	Month	MY (kg/cow/d)	DIM	Concentrates (kg/cow/d)	Milkings /cow/d
Winter	January	30,3	202	4,29	2,6
	February	31,1	177	4,42	2,8
	March	29,5	191	4,20	2,6
Mean		**30,3**	**190**	**4,29**	**2,7**
Summer	May	28,3	203	4,02	2,5
	June	28,7	201	3,81	2,4
	July	28,4	209	3,37	2,4
	August	28,2	217	3,18	2,4
	September	27,3	207	3,03	2,3
Mean		**28,0**	**207**	**3,53**	**2,4**

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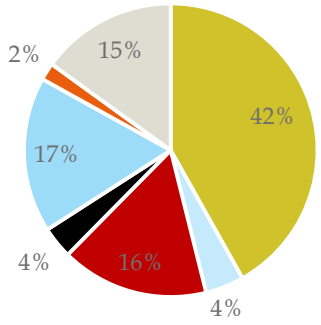
BE1

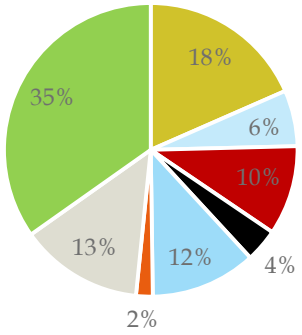
Winter diet



Grass silage 2C | Brewers | Maize silage | Hay | cereals mix | Mineral- Vitamin | Concentrates

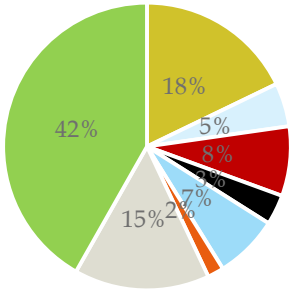
Proportion of grazed grass July 2015

Grass silage
Brewers
Maize silage
Hay
Cereal mix
Mineral- Vitamin
Concentrates
Grazed grass



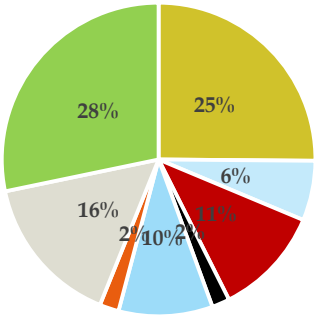
Proportion of grazed grass June 2015

Grass silage
Brewers
Maize silage
Hay
Cereal mix
Mineral-vitamin
concentrates
Grazed grass

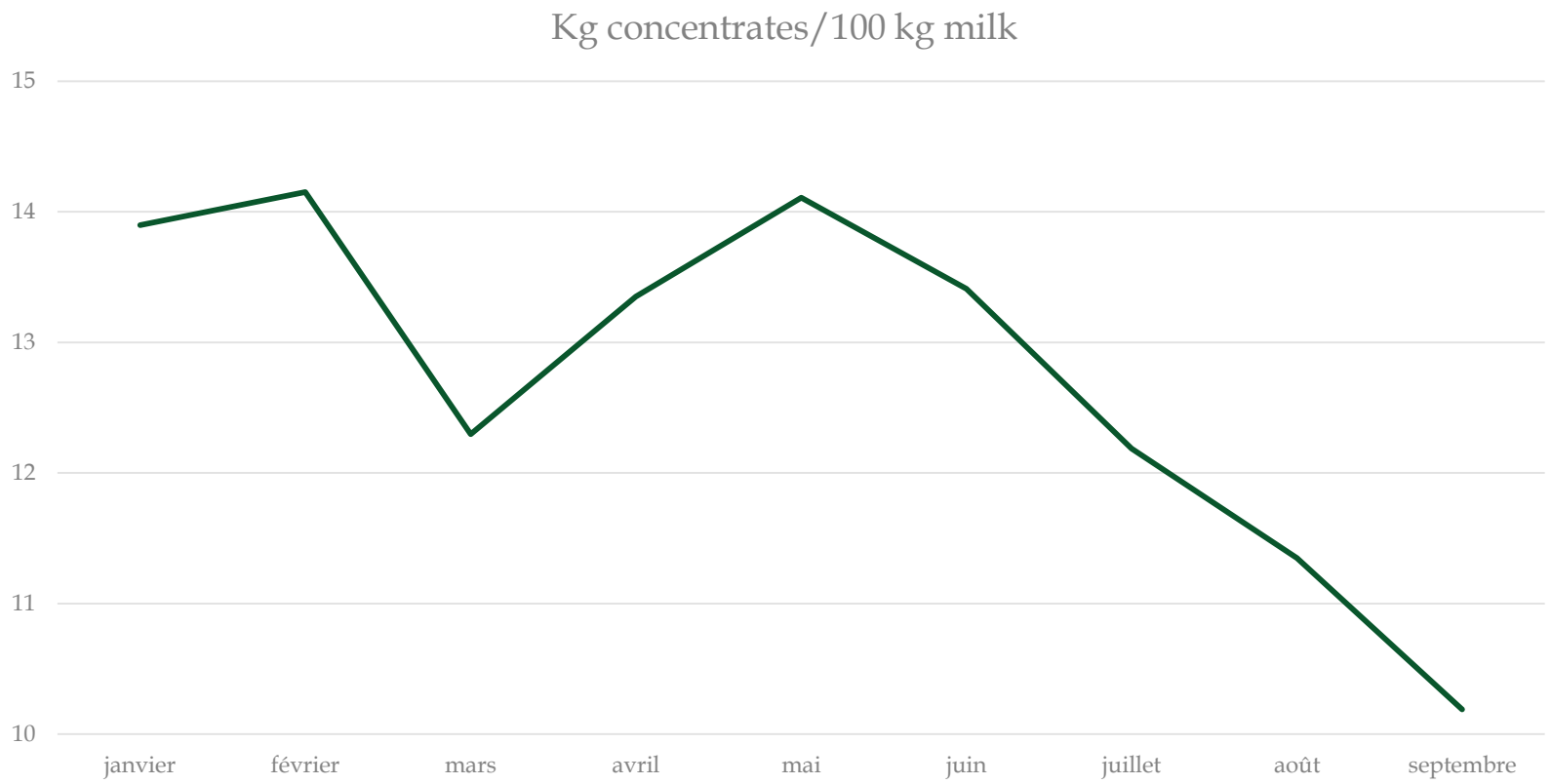


Proportion of grazed grass August 2015

Grass silage
Brewers
Maize silage
Hay
Cereal mix
Mineral-vitamin
concentrates
Grazed grass



BE1
Milk yield parameters



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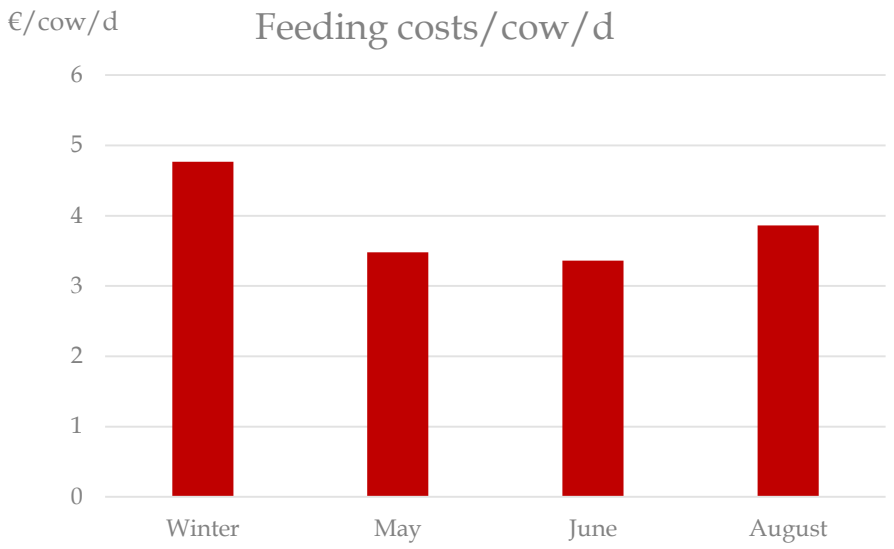
Feeding costs BE1

Feeding costs/cow/d	
Winter	4,77 €
May	3,48 €
June	3,36 €
August	3,86 €



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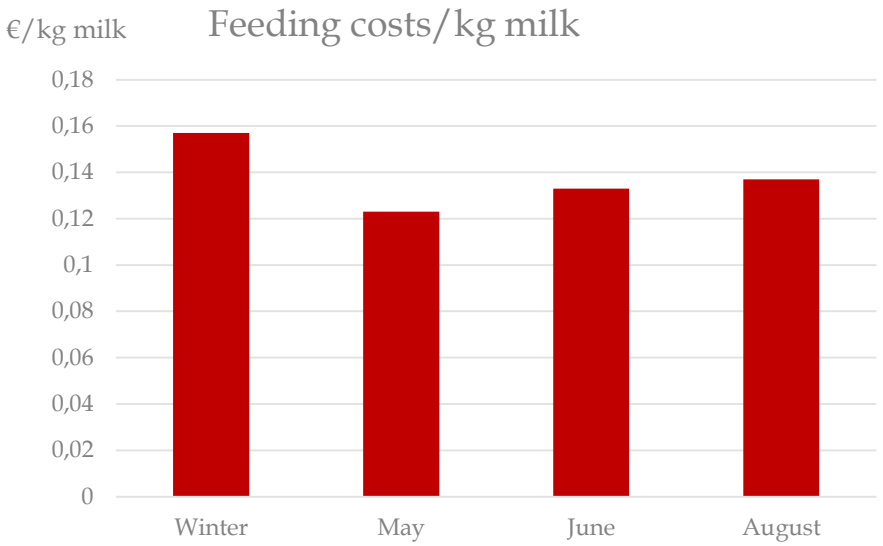
Feeding costs BE1

Feeding costs /kg milk	
Winter	0,157 €/kg
May	0,123 €/kg
June	0,133 €/kg
August	0,137 €/kg



BE3

Milk yield parameters

Season	Month	MY (kg/cow/d)	DIM	Concentrates (kg/vc/j)	Milkings /cow/d
Winter	January	24,6	182	5,42	2,8
	February	25,3	193	5,25	2,8
	March	24,6	205	4,35	2,8
Mean		**24,8**	**193**	**5,0**	**2,8**
Summer	May	24,9	234	4,0	2,2
	June	23,7	229	3,9	2,2
	July	24,3	213	4,4	2,6
	August	23,5	211	4,0	2,5
	September	23,2	194	4,0	2,3
Mean		**23,8**	**216**	**4,0**	**2,3**

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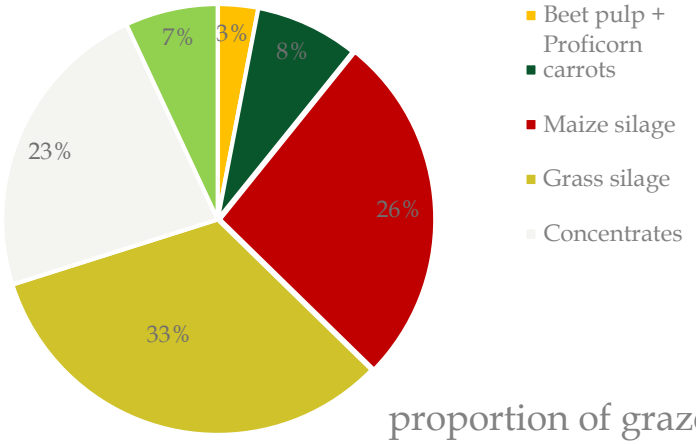
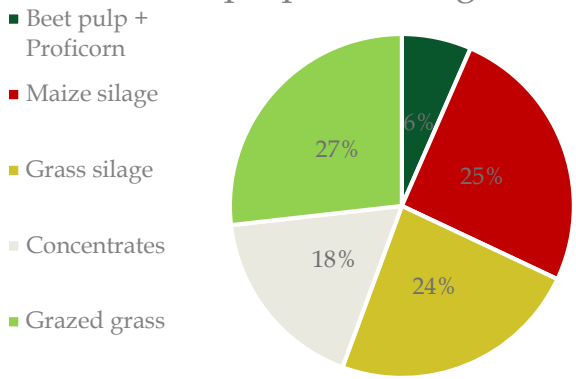
BE3

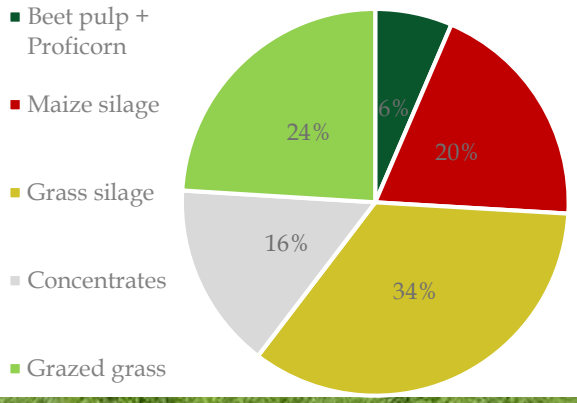
proportion of grazed grass 22/4/2015



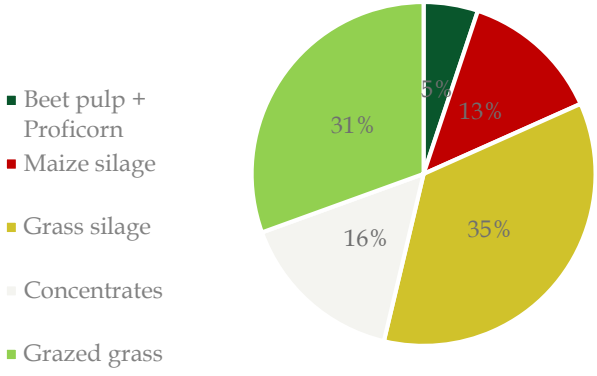
proportion of grazed grass 30/7/2015



proportion of grazed grass June 2015



proportion of grazed grass August 2015



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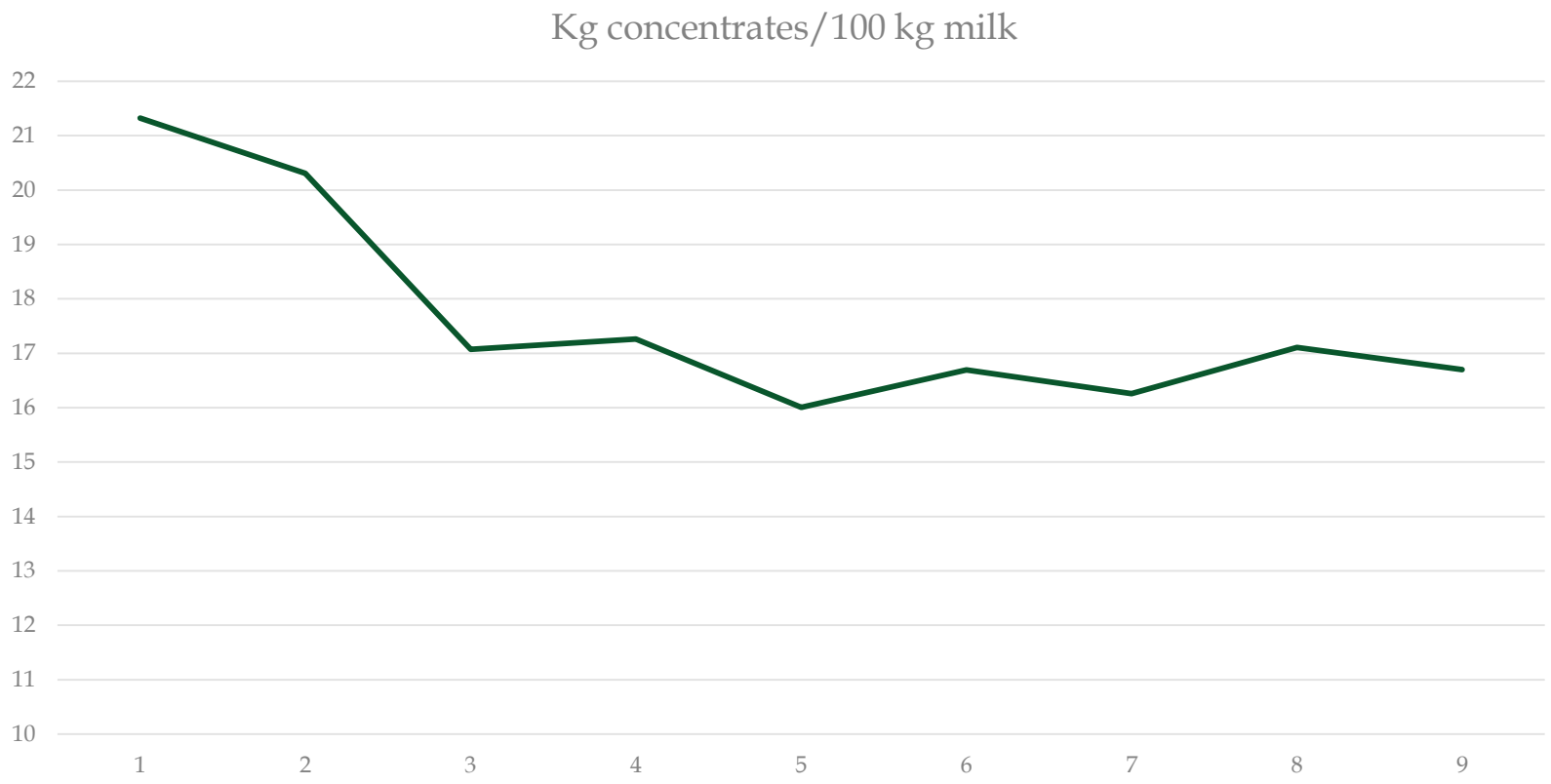
BE3

Milk yield parameters



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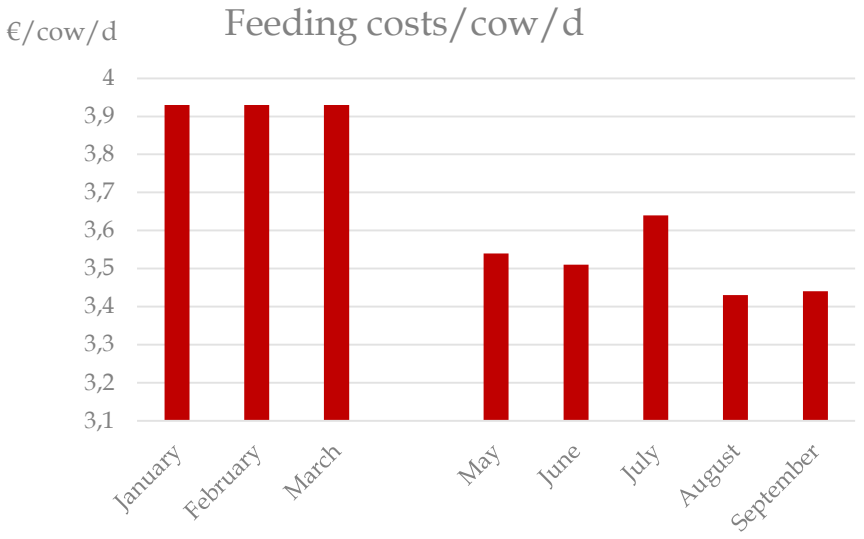
Feeding costs BE3

Feeding costs/cow/d	
Winter	3,93 €
May	3,54 €
June	3,51 €
July	3,64 €
August	3,43 €
September	3,44 €



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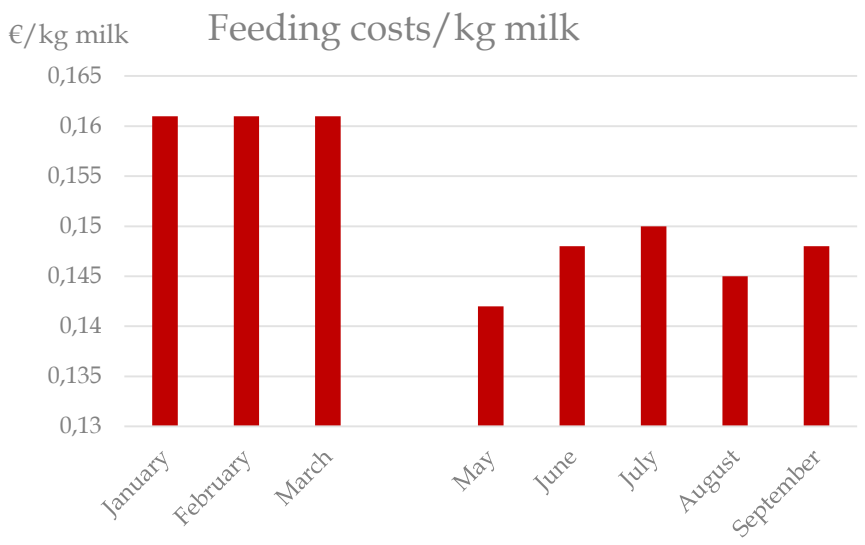
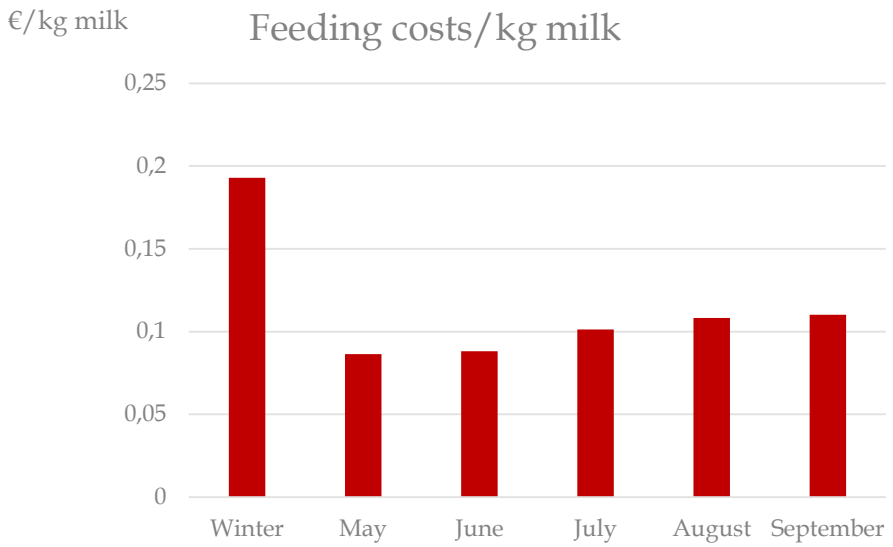
Feeding costs BE3

Feeding costs/kg milk	
Winter	0,161 €/kg
May	0,142 €/kg
June	0, 148 €/kg
July	0,150 €/kg
September	0,148 €/kg



Feeding costs Experimental farm

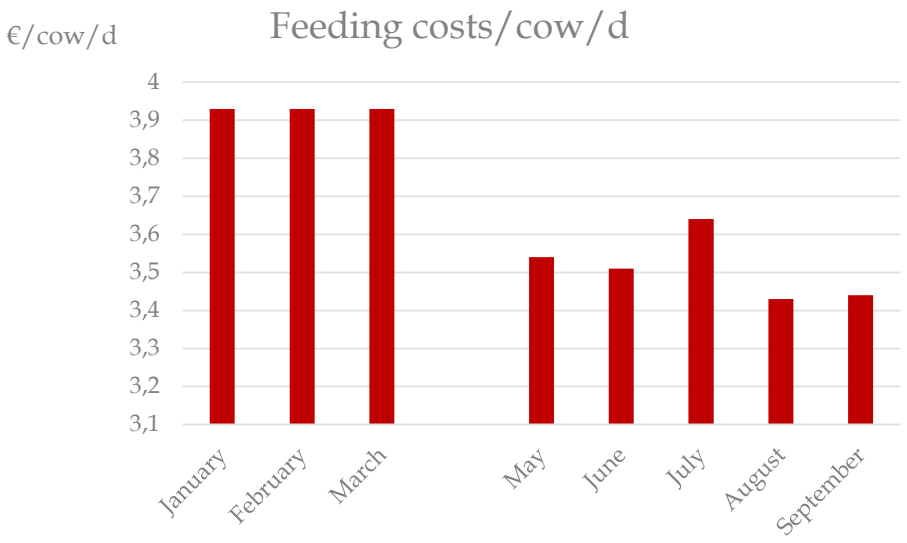
Feeding costs/kg milk	
Winter	0,193 €/kg
May	0,086 €/kg
June	0,088 €/kg
July	0,101 €/kg
August	0,108 €/kg
September	0,110 €/kg



During the grazing season, ingested grass = 90% of cows' diet

Feeding costs Experimental Farm

Feeding costs/cow/d	
Winter	5,66 €
May	1,85 €
June	1,77 €
July	1,81 €
August	1,80 €
September	1,78 €



During the grazing season, ingested grass = 90% of cows' diet

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Experimentale farm
Grazing season 2015

4 groups

- High concentrate level– milking permission :4 h
- High concentrate level– milking permission >6 h
- Low concentrate level– milking permission :4 h
- Low concentrate level– milking permission >6 h

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Concentrate allocation pattern

LC*	
0 - 15 kg	1 kg
15-25 kg	2 kg
25-35 kg	2.5 kg
35-50 kg	2.5 kg

HC*	
0-18 kg	3.5 kg
18-25 kg	4 kg
25 – 35 kg	4 kg
> 35 kg	4 kg

LC: low concentrate – HC: high concentrate

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Results

	HC - 4 h	HC– 6 h	LC – 4h	LC - 6h
Nb cows	11	12	15	12
DIM (d)	193 ± 15	211 ± 15	182 ± 26	215 ± 22
Milkings (/cow/d)	2,3 ± 0,3	2,3 ± 0,3	2,3 ± 0,3	2,0 ± 0,2
Refusals (/cow/d)	1,0 ± 0,8	2,1 ± 1,3	1,3 ± 0,9	1,1 ± 0,7
MY (kg/cow/d)	19,3 ± 2,7	19,3 ± 2,3	17,7 ± 2,8	16,4 ± 1,9
Concentrates	3,5 ± 0,3	3,4 ± 0,2	1,9 ± 0,2	1,8 ± 0,3

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Thank you for your attention