

Theme 6: Calving, Young Stock Management

FROM WEANING TO FIRST CALVING (PREGNANCY) (Level 2)

Topic	Training & information Content
6.1	Selection of bulls, use of sexed semen, feeding management of dry cows
6.2.1	The calving process
6.2.2	Use of equipment around calving
6.2.3	Care of cow and calf after calving
6.2.4	Colostrum management
6.3	Milk (replacer) feeding schedule
6.4	From birth to weaning
6.5	From weaning to pregnancy
6.6	Disease and health management
6.7	Handling of calves after difficult birth
6.8	Young stock rearing info and Key Performance Indicators



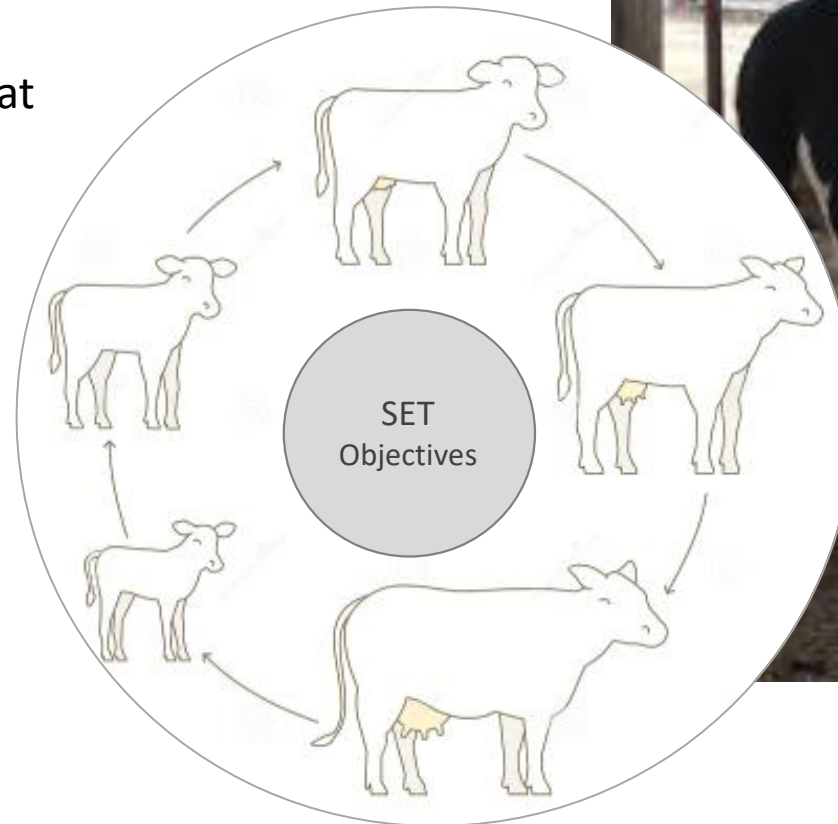
1. You will learn about (learning objectives):

- Management from calf /heifer from weaning till first calving.
- The importance of feeding a young animal according to their needs.
- How to prepare a pregnant heifer during the period before calving.



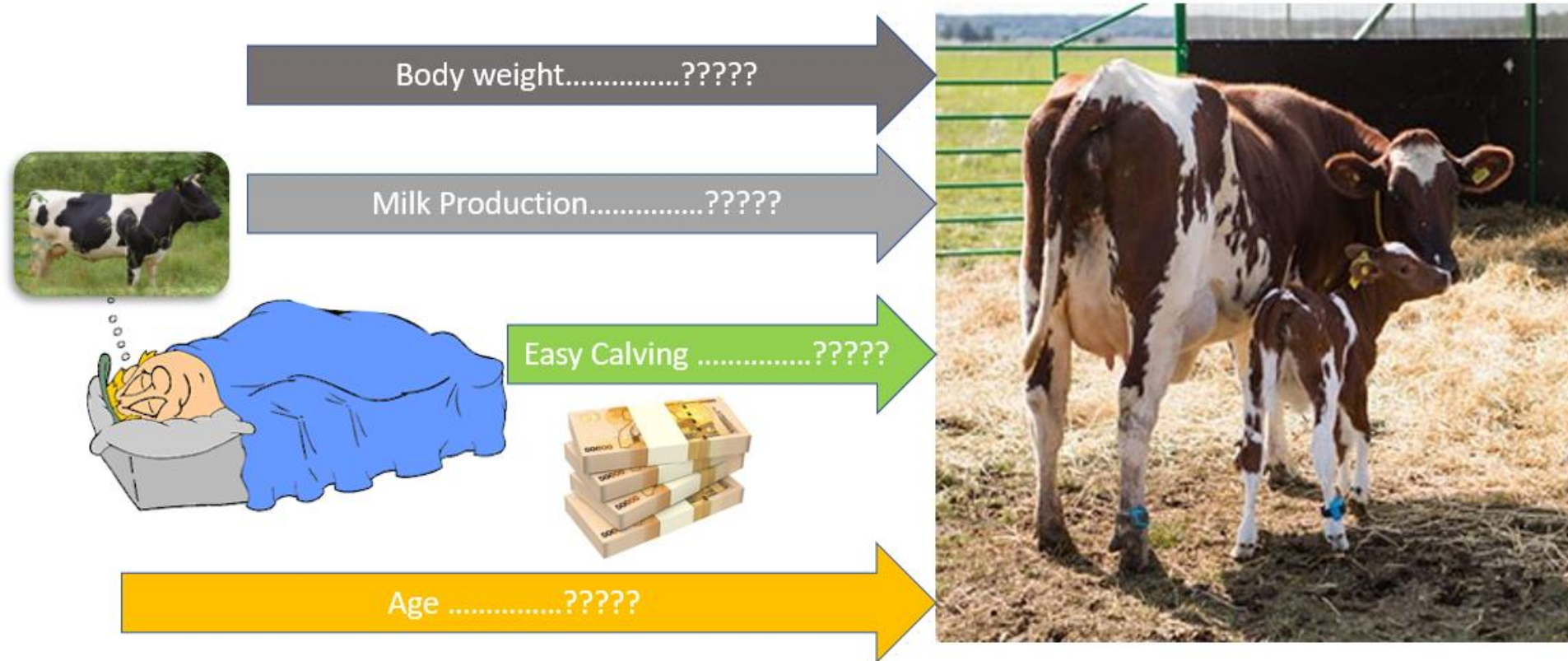
2. Background

- Your weaned calf soon will become a milking cow.
- It is important that 'the newly calved heifer' is in good shape to start her new job as a future milking cow. All these preparations must take place before calving.
- As a farmer, you must decide what you expect from calves/heifers; setting objectives are crucial for future successes.



3. Setting Objectives

- There are a number of objectives/factors to be worried about when managing calves/heifers from weaning to first calving i.e. body weight, age etc.



3.1 Setting objectives Cont'd...

Objectives

1. What's the body weight you are aiming for after your heifer has calved?
2. At what age do you want your heifer to calve down for the first time?
3. What can you do to make sure that the chance for parturition difficulties will be as low as possible?
4. What is the amount of milk you expect from your first calving heifer?

Take into consideration:

- Objectives are farm bounded.
- Objectives are supposed to be SMART.



3.2 Objectives should be SMART

- Set SMART objectives. SMART stands for:

Specific

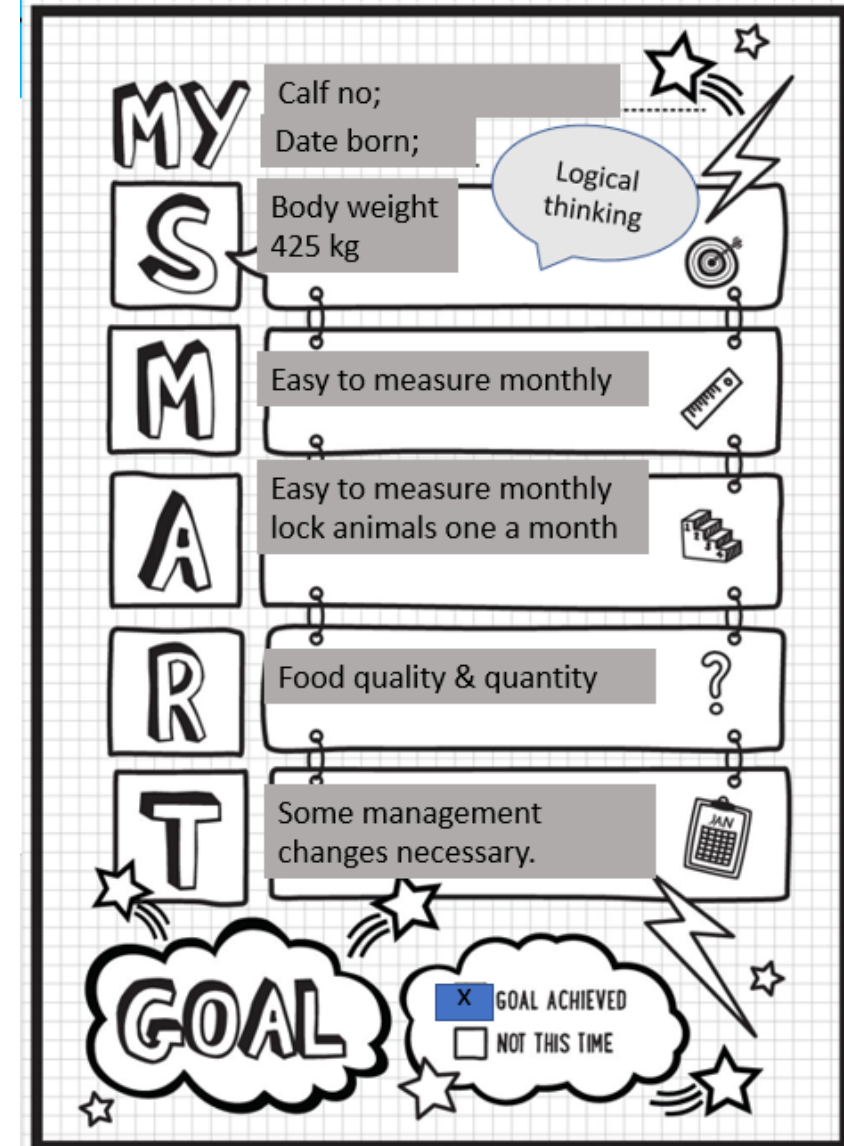
Measurable

Achievable

Relevant

Time bound

Note: If the food quality and food quantity is not according what is necessary for the desired growth rate, the objective is not SMART.

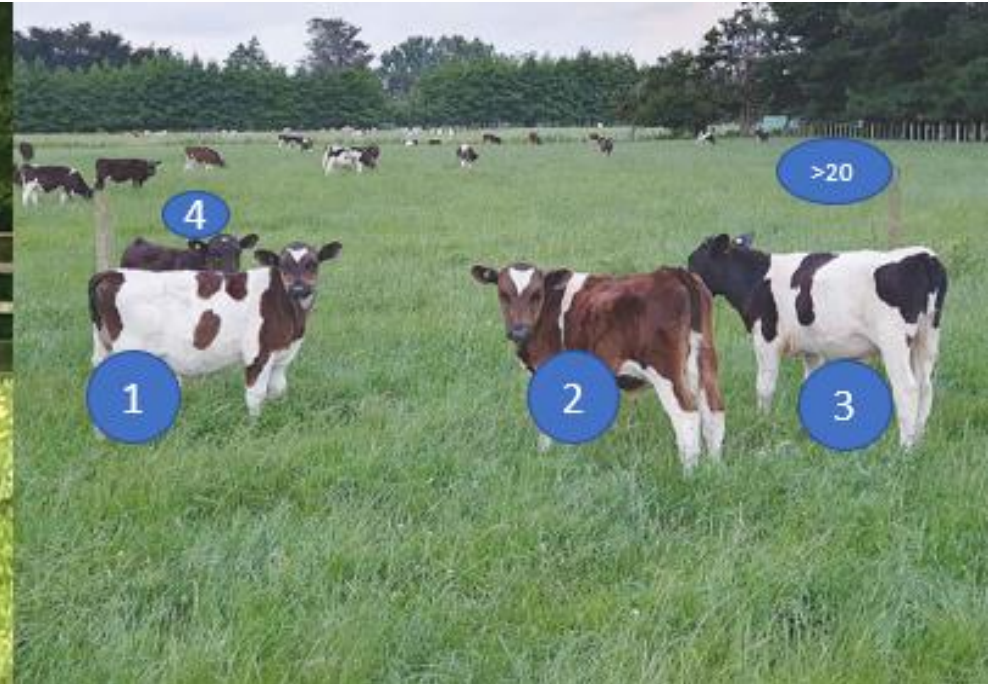


4. Rearing calves post-weaning



After weaning

- Small group: 3-4 calves.
- Small area: for continuation of growth.
- Recognizable places where they can eat and drink, similar as before weaning.

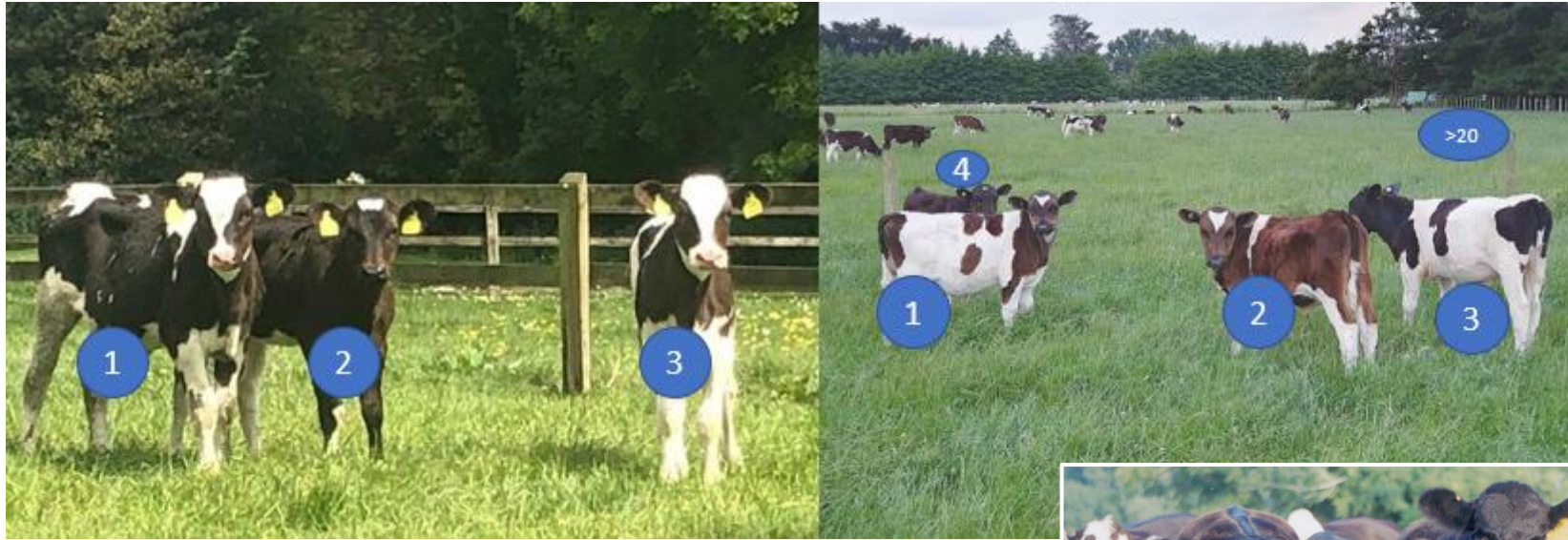


After weaning

- Group size is too big: > 20 calves.
- New food, new environment, new herd mates.
- Losing energy and growth because of long walking distances.



4.1 Rearing calves post-weaning Cont'd...



From weaning to first calving:

- Keep the calves in small groups to avoid stress and to optimize growth rate.
- Grazing in big paddocks means lots of energy get lost, reduces growth rates.
- Competition (at water troughs) is one of the reasons why growth rates lag.
- In the first few months after weaning, 'zero grazing' is the best way to optimize growth.



5. Growth/weight gain in calves

AGE:	January 0	February 1	March 3	April 4	May 5	June 6	July 7	August 8	September 9	October 10	November 11	December 12
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- Monitor calf's growth rate regularly.

Objective: Daily weight gain of 700 grams per day (gr/day)

Tape measuring



Weight:	32 kg	41 kg	57 kg	85 kg	115 kg	137 kg	160 kg	180 kg	200 kg	245kg	265 kg	290 kg
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5.1 Growth/weight gain in calves Cont'd...

- The table alongside will be a 'reliable' guide to assist the farmer in managing the growth rates of the calves and heifers.

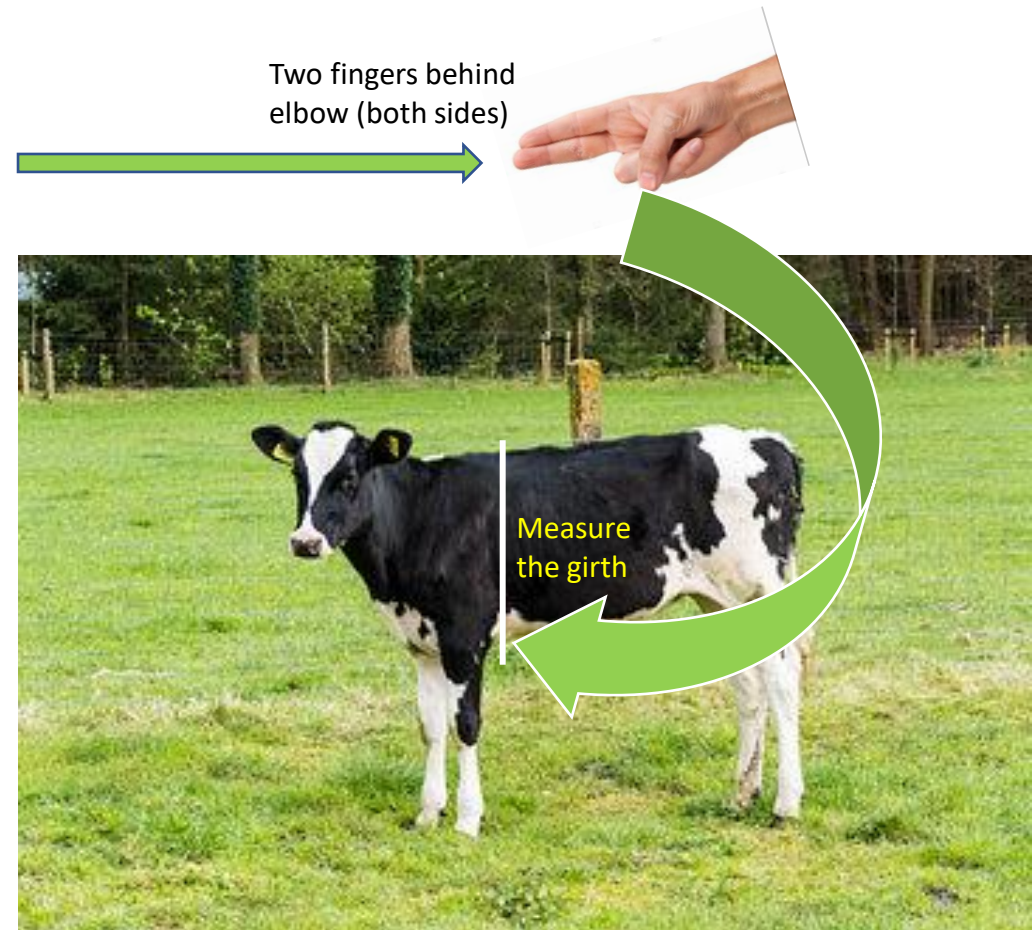
Examples:

98 cm = 85 kgs
 128 cm = 180 kgs
 151 cm = 290 kgs
 186 cm = 500 kgs

Cm's	Kg's	Cm's	Kg's	Cm's	Kg's	Cm's	Kg's
75	41	108	114	142	236	176	435
76	42	109	117	143	240	177	440
77	44	110	120	144	245	178	445
78	46	111	123	145	250	179	452
79	48	112	126	146	255	180	460
80	49	113	129	147	260	181	467
81	51	114	132	148	268	182	474
82	53	115	135	149	276	183	480
83	54	116	139	150	283	184	487
84	56	117	142	151	290	185	493
85	58	118	145	152	295	186	500
86	60	119	148	153	300	187	508
87	62	120	151	154	305	188	516
88	64	121	154	155	310	189	523
89	66	122	158	156	315	190	530
90	68	123	162	157	320	191	538
91	70	124	166	158	325	192	546
92	72	125	170	159	330	193	554
93	74	126	173	160	335	194	562
94	77	127	176	161	340	195	570
95	79	128	179	162	345	196	578
96	81	129	183	163	350	197	586
97	84	130	187	164	357	198	594
98	86	131	191	165	364	199	600
99	88	132	195	166	370	200	608
100	91	133	198	167	377	201	616
101	93	134	202	168	384	202	624
102	96	135	208	169	390	203	632
103	99	136	212	170	397	204	640
		137	216	171	404	205	645
104	102	138	220	172	410	206	650
105	104	139	224	173	417	208	654
106	107	140	228	174	424	209	657
107	110	141	232	175	430	210	660

5.2 Growth/weight gain in calves Cont'd...

- If tape measuring is done correctly, the reliability is high.
- Under normal conditions keep the tape two fingers behind elbow (both sides) and don't pull (hard), just measure the girth only.
- When the calf is skinny (low BCS), the measurement must be tightened .
- When the calf is 'fat,' the measurement can be looser.
- Always use the same person to do the measurements.



6. Growth/weight gain in heifers

January 13	February 14	March 15	April 16	May 17	June 18	July 19	August 20	September 21	October 22	November 23	December 24
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- Monitor heifer's growth rate regularly.

Objective: Daily weight gain of 670 grams per day (gr/day)

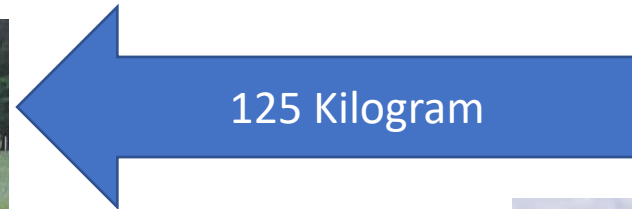
Tape measuring



300 kg	310 kg	320 kg	340 kg	360 kg	380 kg	400 kg	425 kg	445 kg	470kg	490 kg	510 kg
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7. Feed/ration calculation

- Feeding/ration calculation is a continuous process with consequences.
- Every age group needs a different ration to accomplish objectives.



Maximum



12,5 Kilo



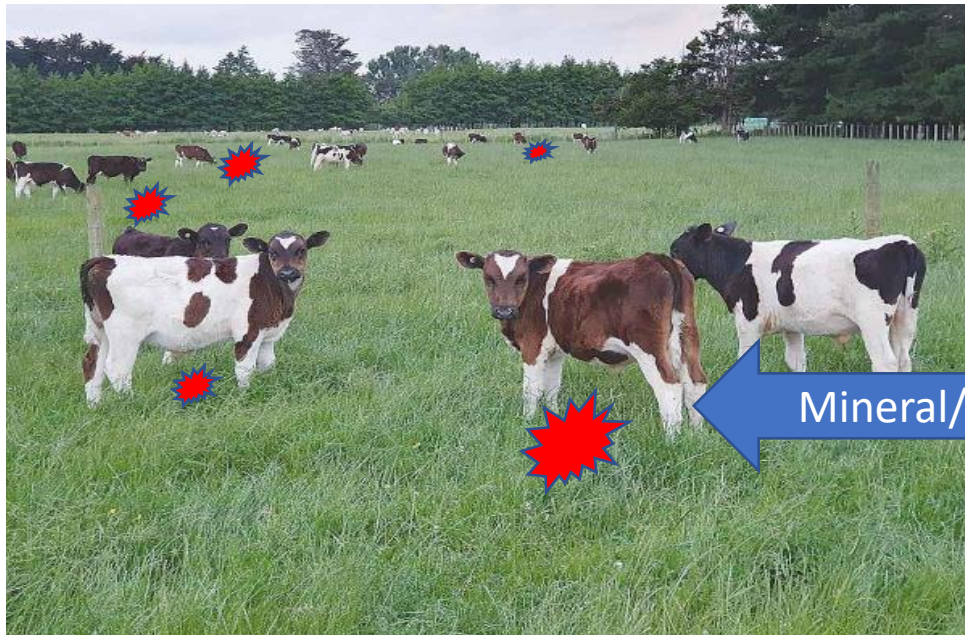
8. Minimum Energy requirements for young calves and heifers

- Desirable growth rates can only be accomplished with high quality roughage. If not available, some concentrates are advised.
- Also, in most pastures there is a shortage of vitamins and trace minerals; either a mineral supplement or some concentrates can solve this problem.

body weight	Kg TDN/day.								
	Average daily gain								
kg's	0,2	0,3	0,4	0,5	0,6	0,7	0,8	0,9	1,0
50	0,98	1,07	1,17	1,26	1,36	1,46	1,55	1,65	1,74
75	1,25	1,37	1,49	1,61	1,73	1,86	1,98	2,10	2,22
100	1,48	1,62	1,77	1,92	2,06	2,21	2,35	2,50	2,64
150	1,89	2,07	2,26	2,44	2,63	2,81	3,00	3,18	3,37
200	2,24	2,46	2,68	2,90	3,12	3,34	3,56	3,78	4,00
250	2,56	2,81	3,07	3,32	3,57	3,82	4,07	4,32	4,58
300	2,86	3,14	3,42	3,70	3,98	4,26	4,54	4,83	5,11
350	3,14	3,45	3,75	4,06	4,37	4,68	4,99	5,29	5,60
400	3,40	3,73	4,07	4,40	4,73	5,07	5,40	5,73	6,07
450	3,65	4,01	4,36	4,72	5,08	5,44	5,90	6,15	6,51
500	3,88	4,27	4,65	5,03	5,41	5,79	6,17	6,55	6,94
550	4,11	4,52	4,92	5,33	5,73	6,13	6,54	6,94	7,35
600	4,33	4,76	5,19	5,61	6,04	6,46	6,89	7,31	7,74

8.1 Minimum Energy requirements for young calves and heifers Cont'd...

- Shortage of vitamins and trace minerals in pastures can be solved by supplementing the animals with mineral supplements or some concentrates.



125 Kilogram

Mineral/Vitamin deficiencies



Red stars are a 'reliable' indication of copper shortage.

8.2 Minimum Energy requirements for young calves and heifers Cont'd...



Table: Nutrient recommendations of diet for Calf and Heifer on dry matter basis.

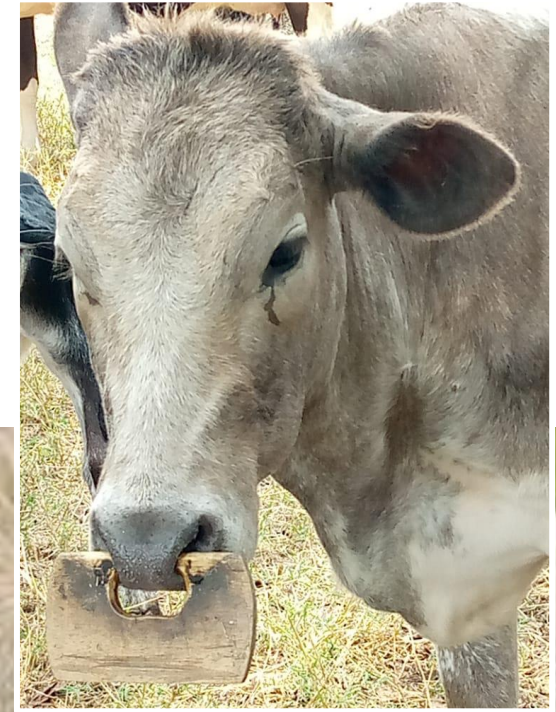
Item	Age in months		
	3-6 months	6-12 months	12-24 months
Body weight	200	300	400
DM intake/kg	5	7,2	11,4
ME Mcal/kg	2,05	2,27	1,80
TDN % of DM	67	65	65
Crude Protein %	16	14	12
Met Protein	7,7	7,0	5,3
ADF %	20	22	23
NDF %	30	32	33
Ether extract %	2	2	2
Calcium %	0,41	0,41	0,37
Posphorus %	0,28	0,23	0,18
Magnesium %	0,11	0,11	0,08
Chloride %	0,11	0,12	0,10
Sodium %	0,08	0,08	0,07
Potassium %	0,47	0,48	0,26
Sulphur %	0,20	0,20	0,20
Vitamine A, IU	24000	24000	36000
Vitamine D,IU	6000	9000	13500
Vitamine E, IU	240	240	240
Cobalt, ppm	0,11	0,11	0,11
Cupper,ppm	10	10	9
Iodine,ppm	0,27	0,30	0,30
Iron,ppm	43	31	13
Manganese, ppm	22	20	14
Selenium,ppm	0,30	0,30	0,30
Zinc,ppm	32	27	18

Source; adapted from feeding the dairy herd Guide Mike Hutjens 2008 NRC 2001and NRC 1989

9. Suckling vice in heifers

This:

- Is a deviant behaviour.
- Causes mastitis.
- -/- (reduces) milk production.

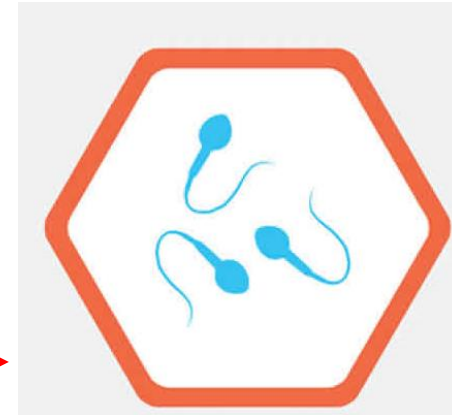


Watch video:

<https://www.youtube.com/watch?v=bo03cqGK58M>

10. Twins: Freemartins

- Sometimes “heifers” come in heat, but cannot become pregnant.



- Not suitable for AI.
- In case of natural mating, there are very low conception rates.

CULL!



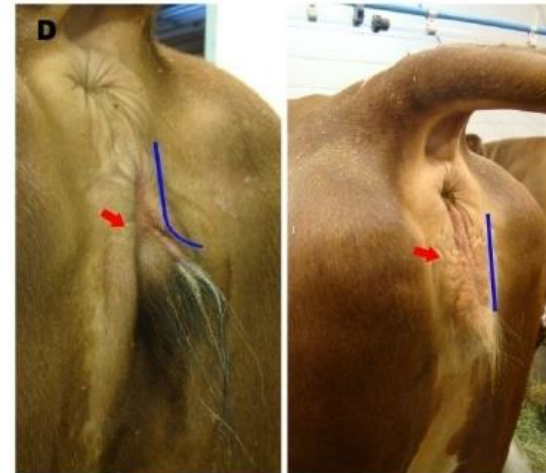
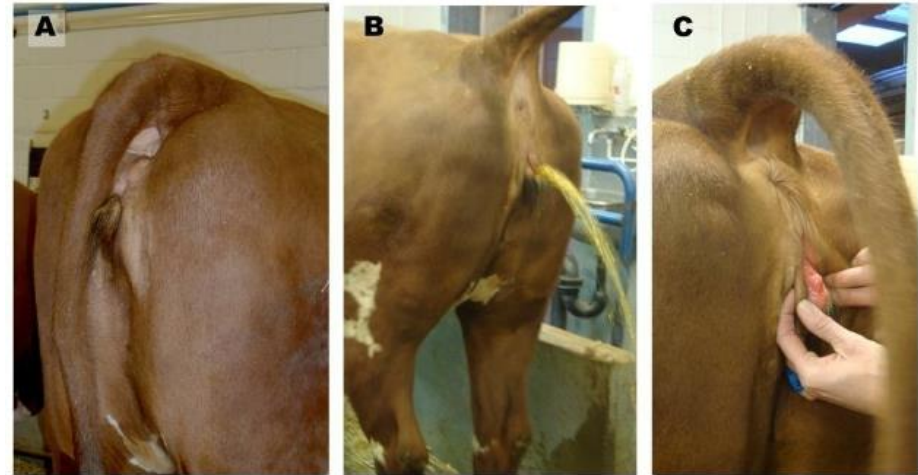
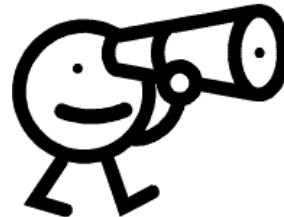
10.1 Twins: Freemartins Cont'd...



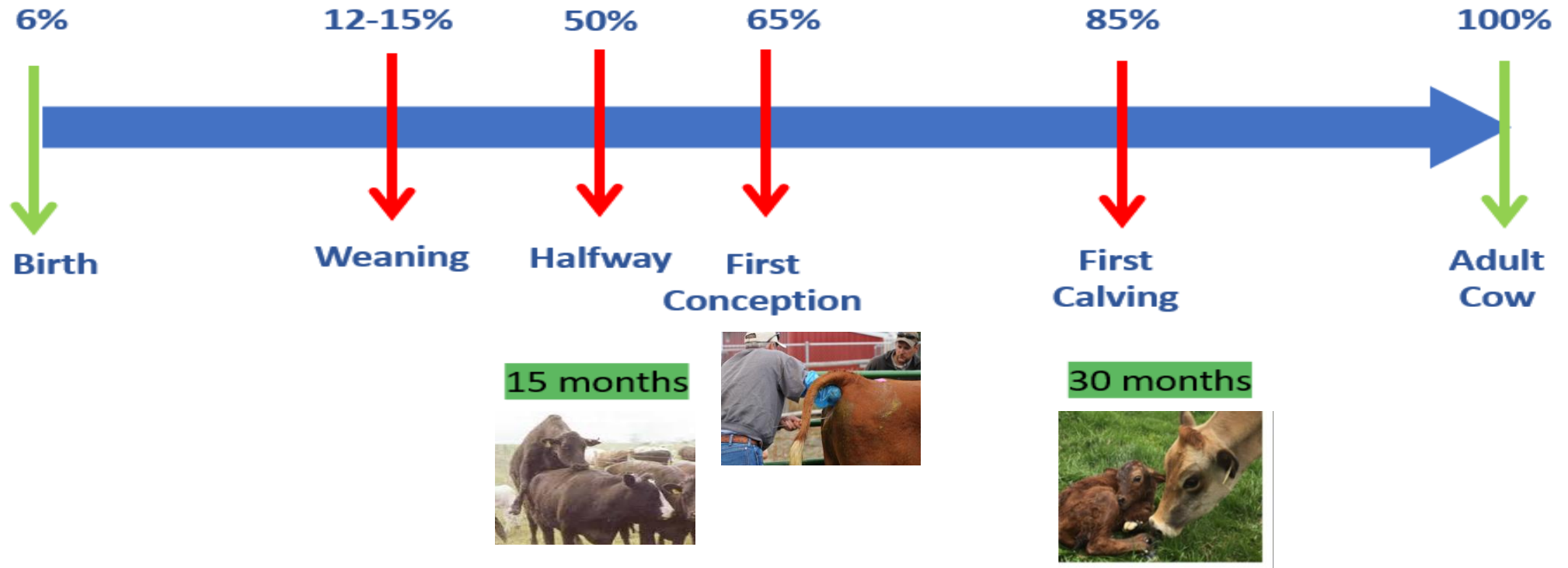
Freemartins

Bull calves have poor fertility/infertile.

Heifer calves: 98 % deviant reproductive tract.
Thickened clitoris (see pictures alongside).

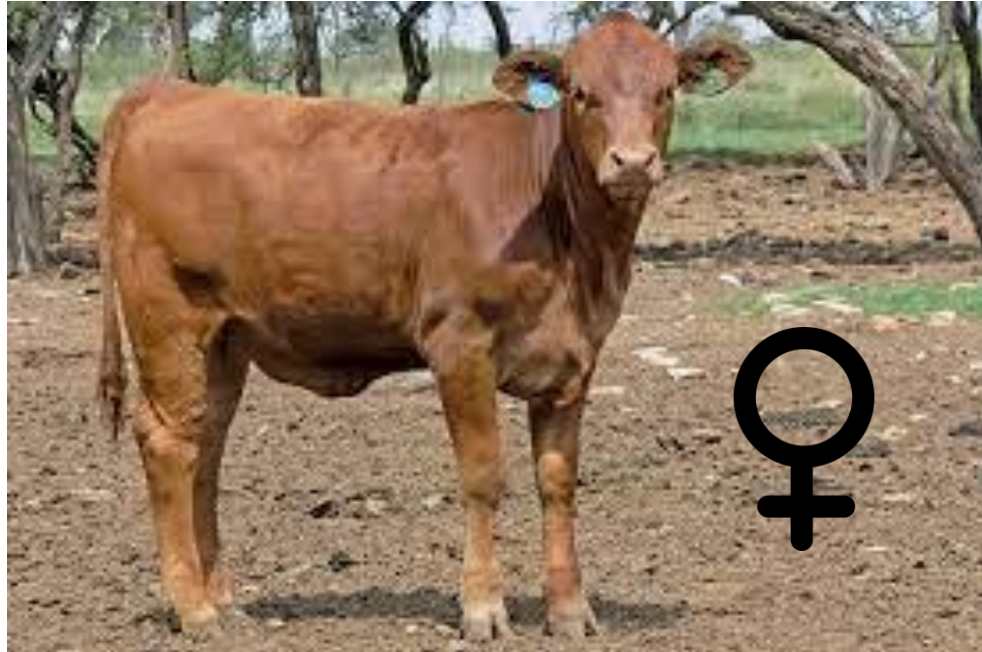


11. Pathway: Growth from mating to first calving



12. Bull selection for natural mating or Artificial Insemination (AI)

Mating



Bull Selection

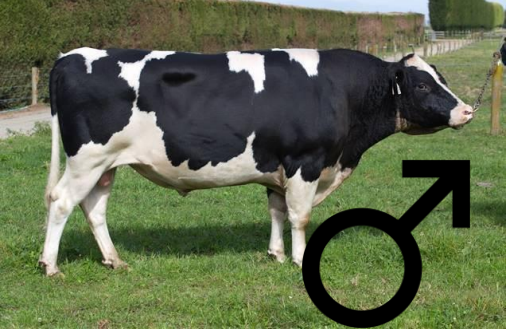


525HO00091 MALKI

04/2021	CDCB SUMMARY MACE			NM\$ +76
Milk	-184	92%R	Fluid Merit \$	+58
Fat	-3	+0.01%	Cheese Merit \$	+84
Protein	-1	+0.02%	Grazing Merit \$	+62
SCS	2.94	90%R	Gestation Len. +0 Fert. Index +0.6	
PL	+2.0	90%R	Livability +2.4 Mastitis +0.5	
DPR	+0.8	89%R	EFI 5.0% gEFI 5.4%	
HCR	-0.1			
CCR	-1.8		10343 Dtrs 2632 Herds 0% US	

04/2021	CALVING SUMMARY			SCE 2.4 %
Sire Calving Ease	2.4%	88%R	25885 Obs	
Daughter Calving Ease	3.0%	78%R	2 Obs	
Sire Stillbirth	6.3%	70%R	37408 Obs	
Daughter Stillbirth	6.1%	78%R	2 Obs	

04/2021	HA TYPE SUMMARY			TPI +2019
PTAT	-0.69	90%R	UDC+0.00 FLC+1.14 BSC-0.14 2532 D / 781 H	
Stature	-1.69	Short		
Strength	-0.44	Frail		
Body Depth	-1.12	Shallow		
Dairy Form	-1.59	Tight		
Rump Angle	-1.19	High Pins		
Thurl Width	-0.56	Narrow		
Rear Legs-Side	-0.70	Posty		
Rear Legs-Rear	+1.05	Straight		
Foot Angle	-0.96	Low		
Feet & Legs Score	+0.74	High		
F. Udder Attachment	-0.25	Loose		
Rear Udder Height	-0.23	Low		
Rear Udder Width	-0.49	Narrow		
Udder Cleft	-0.40	Weak		
Udder Depth	-0.29	Deep		
Front Teat Placement	-1.45	Wide		
Rear Teat P. Rear	+0.19	Close		
Teat Length	+0.22	Long		



12.1 Bull selection for natural mating or Artificial Insemination (AI) Cont'd...



525HO00091 MALKI

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The very first selection criteria for an AI bull is Sire Calving Ease. Always make sure that the chosen AI bull gives either lighter calves or easy births with relative short gestation periods (< 280 days).

In case of natural mating, it is important that the gestation period of the chosen bull is (far) below the average (< 280 days).

Also beware that the gestation period of the heifer will have some impact on her calving ease. Both bull and heifer are 50% each, responsible for what will happen (easy caving - yes/no).

14. Pregnant cow

- Pregnancy check confirms pregnancy.



Maximum



62,5 Kilo



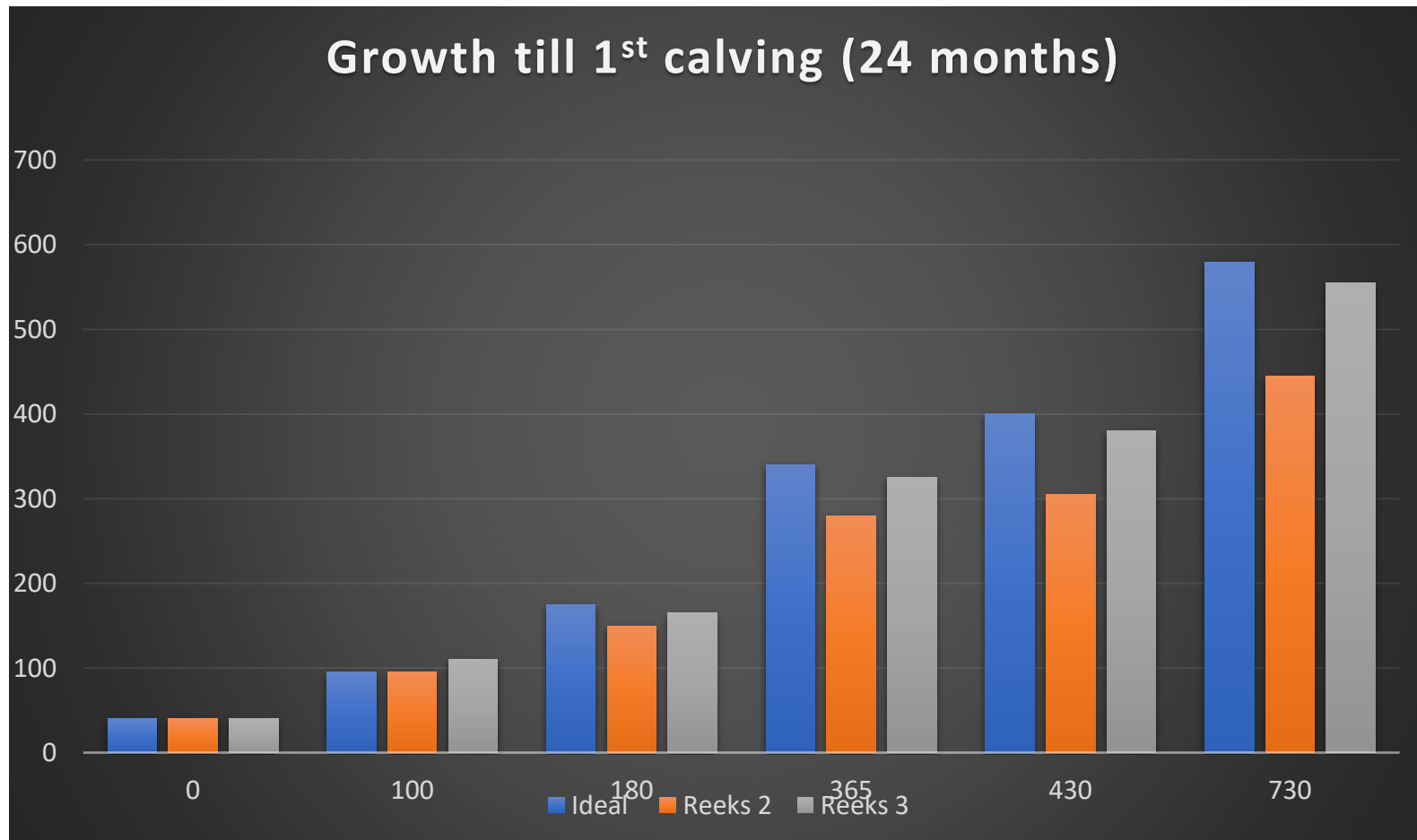
15. Stress prevention

- One month before the expecting calving date, the pregnant heifer moves into the milking herd to get acquainted to the new environment and to avoid various stress moments around calving.

250 days



16. Sample Growth chart



17. Take home messages

Remember;

1. The calf of to day is the cow of tomorrow.
2. Seeding (**rearing**) must take place before harvesting (**milking**).
3. Youngstock rearing is very expensive.
4. Managing youngstock is an art.

NEVER
allow yourself
to get into this
MESSY
situation!

Calves that are poorly managed after weaning are disadvantaged for life.

