



Euroopa Maaelu Arengu  
Põllumajandusfond:  
Euroopa investeringud  
maapiirkondadesse

# Beef cattle welfare

*Requirements and their assurance*

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# Beef cattle welfare

## *Requirements and their assurance*

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## Beef cattle welfare

### *Requirements and their assurance*

- Beef production, biosecurity and welfare
- Herd management
- Calving, diseases and parasites

Växa Sverige is the largest association for cattle farmers in Sweden. We are owned by our members who are also our customers

Our mission: To deliver independent advisory and services to develop farming and secure profitability for farmers

# Swedish production



# Swedish agriculture

- 40,7 million hectare
- 69% **woodland**
- 8% **arable land**
- 993 340 ha with grain
  - Winter wheat
  - Self sufficient in grain (carrots and sugar), average 50%
- 1 066 166 ha **grass land** (pasture and lay)
- Largest crop in Sweden
- 455 100 ha **permanent grassland** (natural grazing)
- 1 450 000 **cattle**
  - 296 543 dairy cows (19% organic)
  - 213 102 suckler cows
  - Dairy largest sector economically

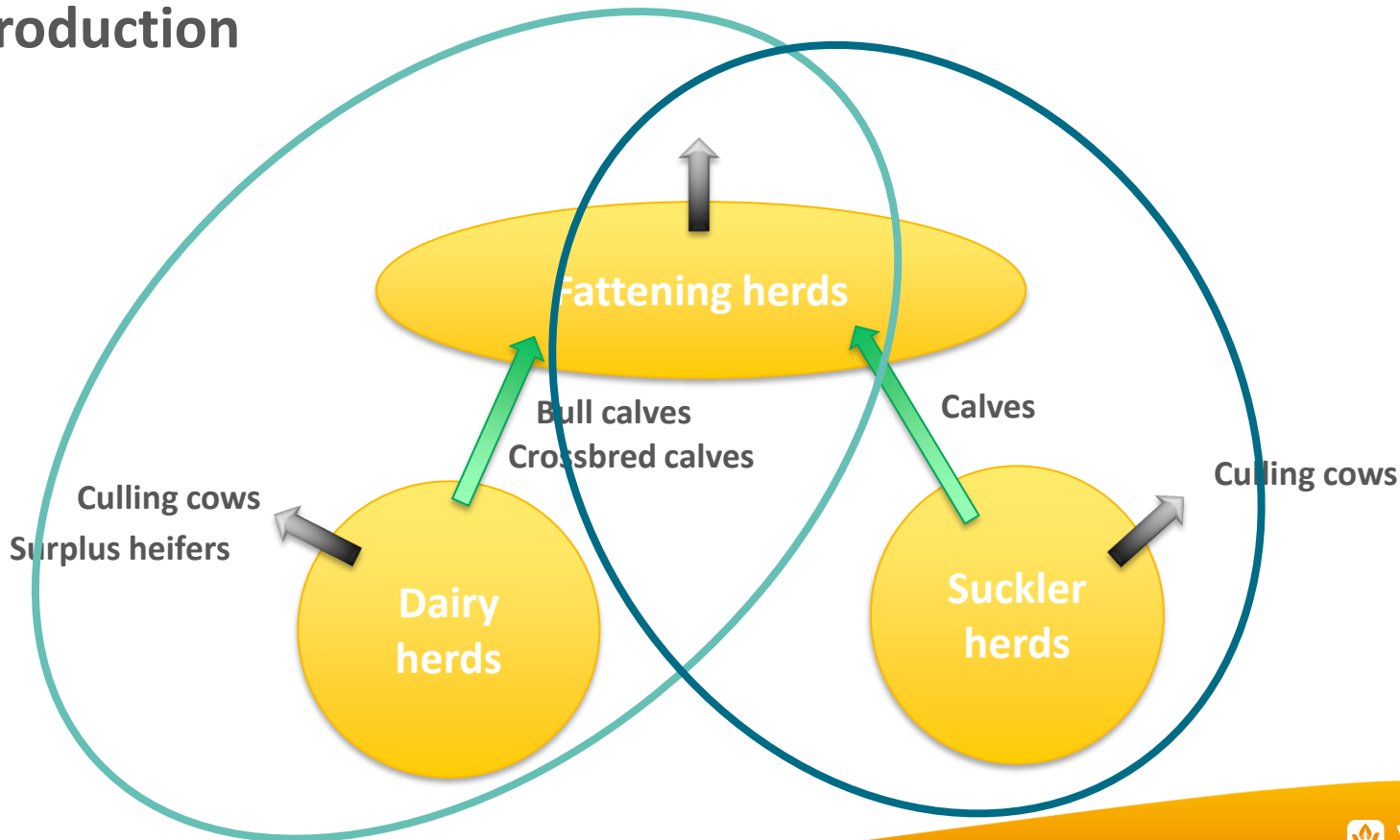




# Fattening herds/meat production in Sweden

- A lot of the meat as a biproduct from dairy businesses (ca 60%)
  - Bull calves
  - Surplus heifers
  - Culling cows
- Suckler herds
  - Calves
  - Culling cows
- Raise all bulls
- Stay in Sweden
- Fully integrated herds both in dairy and beef breed herds
- Cows all over the country, largest herds in the south of Sweden.

# Beef production





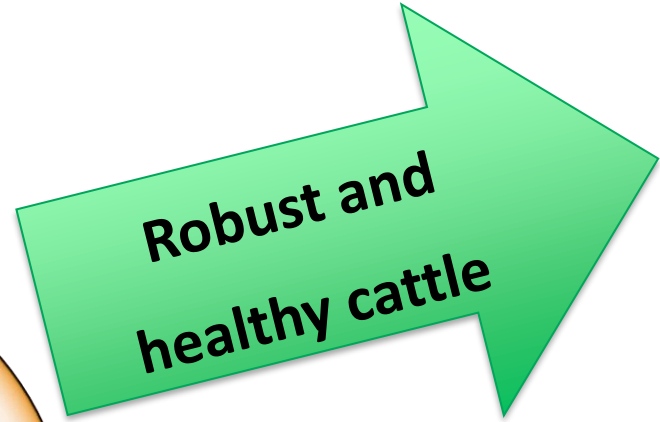
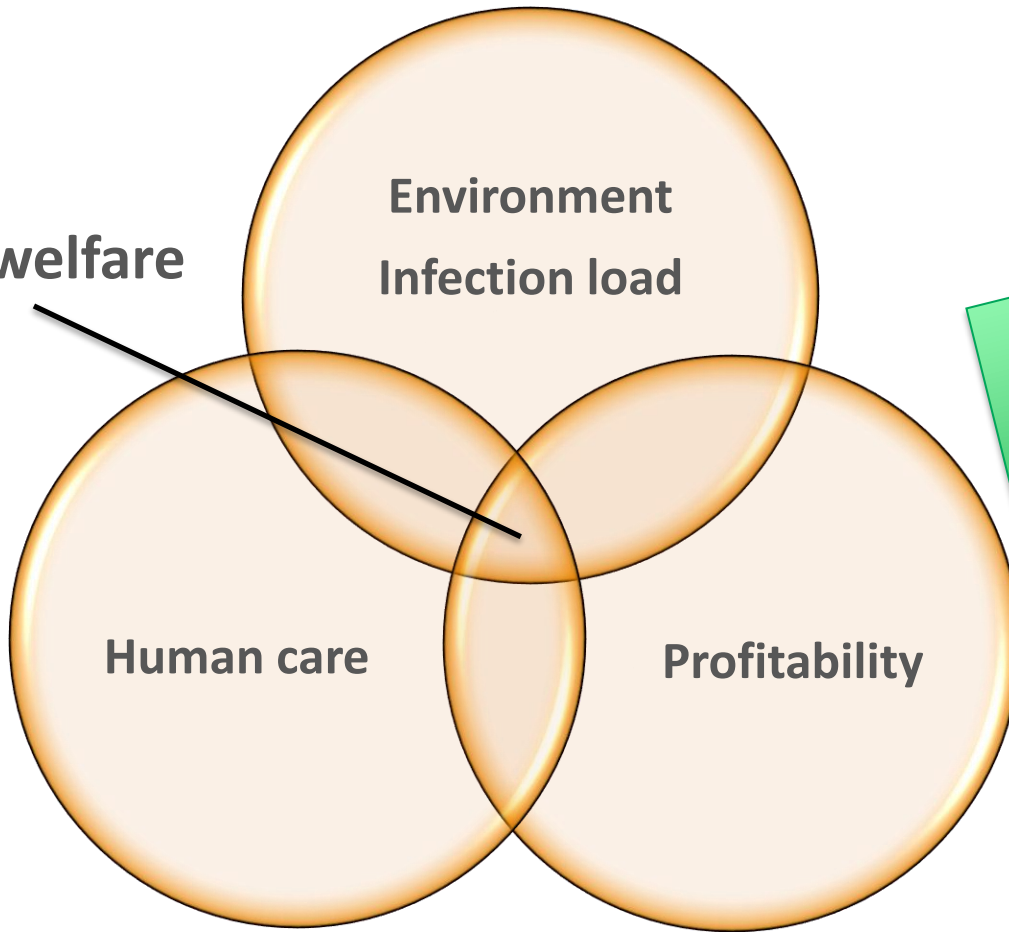
# Suckler cows, herds

- 9900 herds
- Average herd size 21,5 cows
- 65 herds with more than 300 cows
- Main type of production requires about 100 calving's
- Breeding, meat or environment (via pasture)
- Breeds
  - Charolais, Hereford, Angus, Simmental, Limousin
  - Belgian blue, not allowed in Sweden





**Animal welfare**



Input  
On farm

Outcome

Resources

+

Management

=

Performance  
indicators

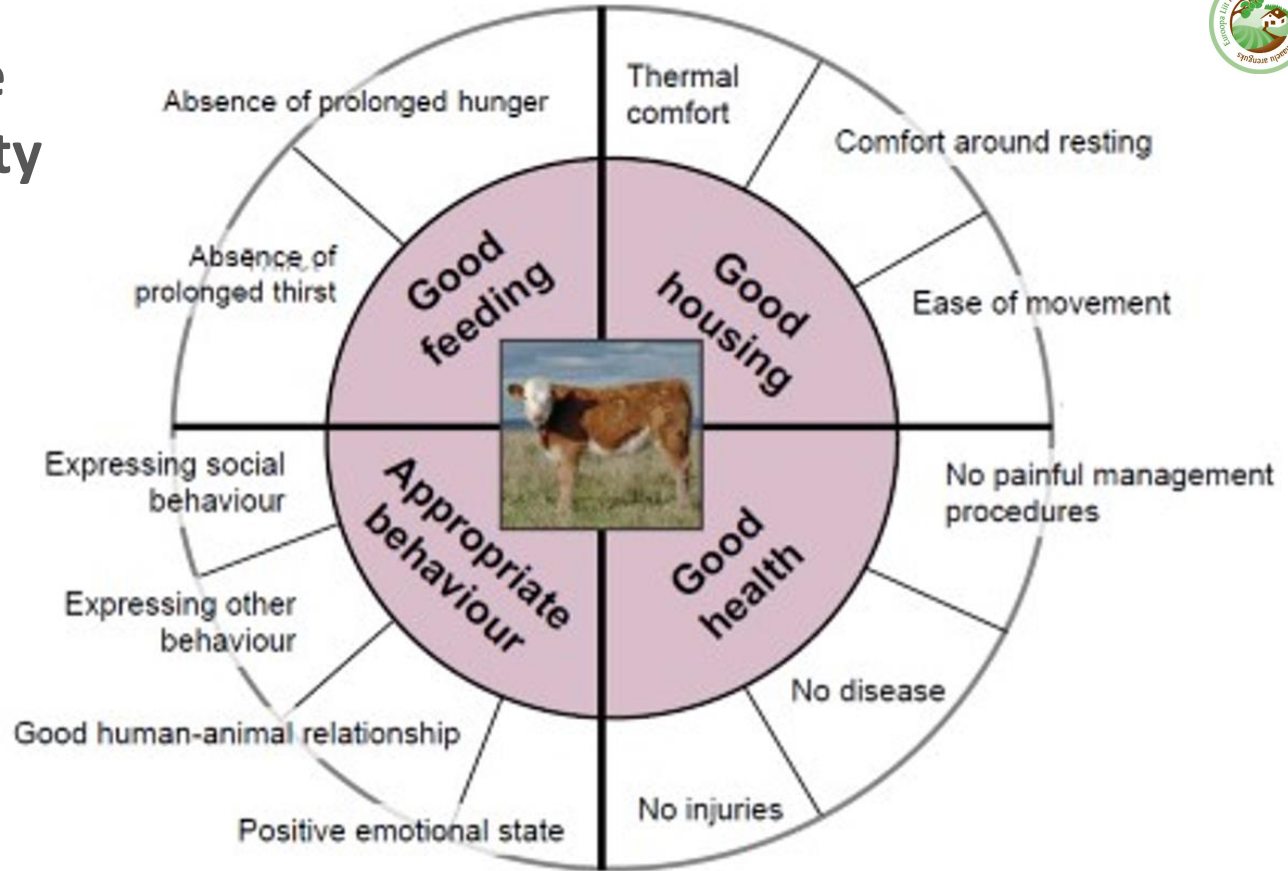
&

The animal



# Cattle welfare

## Welfare quality



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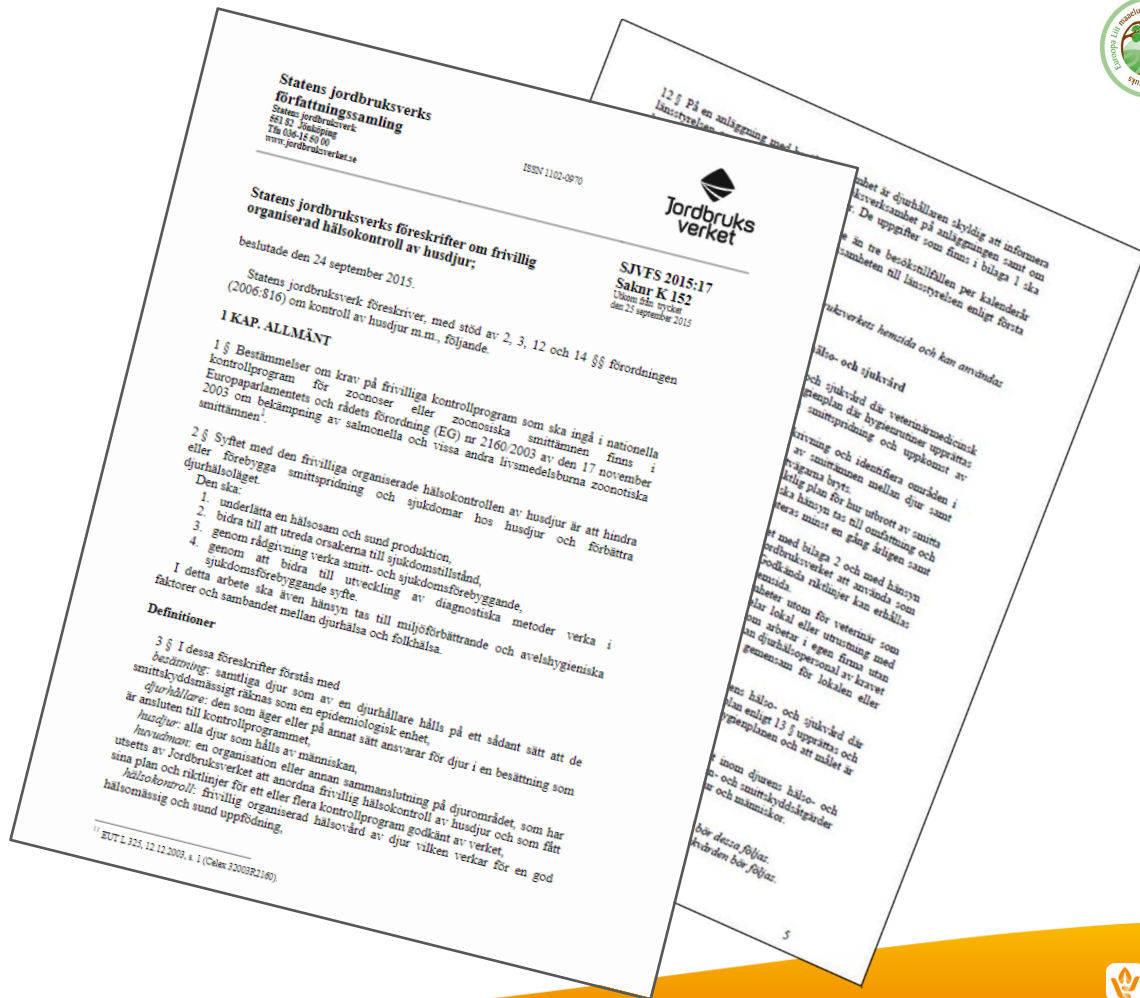
# Control programs and biosecurity

# Successful control programs

- Bovine tuberculosis 1978
  - Brucellosis 1950
  - Salmonellosis Low prevalence 4 % dairy, rarely in suckler herds
  - Enzootic leucosis 2001
  - BSE One case 2006, atypical BSE
  - IBR 1998
  - Paratuberculosis (Johne's disease) 2005 Import
  - BVD <2011, officially free 2022
- 
- Dairy herds: bulk milk, blood samples, autopsies
  - Suckler herds: blood samples at slaughter, autopsies



# Legislation





# Factors for success – Examples

- Geography
- Restricted import – no live animals to dairy farms
- Swedish Farmers Disease Control Program (SDS: agreement by the industry to test imported animals)
- CDB (Database for all cattle and movements)
- Effective logistics for sampling (Bulk milk and at slaughter houses)
- Collaboration and trust
- Research





# Controls and voluntary programs

- Central Data Base
- Animal welfare controls by official inspectors
- Surveillance of certain diseases
- Smittsäkrad besättning
- Cattle held on pasture without built shelter
- Bull breeding evaluation stations
- Health and function breeding bulls
- Health certificates

Mandatory  
Mandatory  
Mandatory  
Voluntary but legislation  
Voluntary but legislation  
Voluntary  
Voluntary  
Voluntary

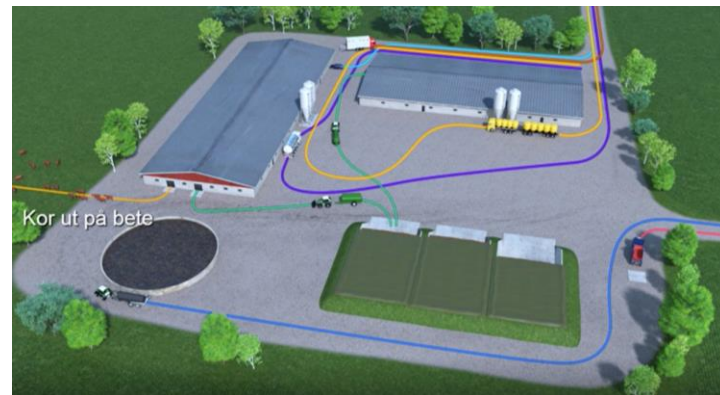


PROVTAGNING				
Besättningsprovtagning				
Provtagningen syftar till att hindra smittspridning av allvarliga smittor mellan besättningar.				
Djur id	Datum blodprov salmonella antikroppar	Resultat senaste provtagning	Datum blodprov M. bovis	Resultat senaste provtagning
<input type="checkbox"/> Provtagningsresultat, dokument bifogas				
<input type="checkbox"/> Aktuella djur har <b>inte</b> provtagits för antikroppar				
EGENFÖRSÄKRAN				
Ringorm				
Symtom på ringorm är hårlösa fläckar/ringar <i>alla</i> på huvud, hals och nacke. Individuell bedömning av ansvarig veterinär.				
<input type="checkbox"/> Symtom på ringorm har <b>inte</b> förekommit i besättningen				
<input type="checkbox"/> Symtom på ringorm förekommer i besättningen				
<input type="checkbox"/> Besättningen har haft ringorm under de senaste 3 åren				
Kommentar:				
<input type="checkbox"/> Aktuellt djur är vaccinerat två gånger mot ringorm under de senaste 3 åren. Dosen minst 21 dagar före leverans.				
<input type="checkbox"/> Vaccinationsjournal där djurid, datum och preparat				
Invärtes parasiter				
Djur infekteras med lungmask eller stora leverflundran på bete. Om djuren inte har vistats på bete är risken liten för att de ska bära på smitta. Uppgift på slaktanmärkningar för det senaste året kan fås från det slakteri som djur har skickats till.				
<input type="checkbox"/> Aktuella djur har aldrig varit på bete, gå vidare till punkt 5				
<input type="checkbox"/> Symtom på lungmask eller stora leverflundran har <b>inte</b> förekommit i besättningen under de senaste 3 åren				
<input type="checkbox"/> Lungmask misstänks eller har konstaterats i besättningen under de senaste 3 åren				



# Smittsäkrad besättning – a biosecurity program for cattle herds

- Launched in 2015
- Växa operates the program
- Aim: To reduce the spread of infectious diseases between and within cattle farms
- Voluntary
- State program Swedish board of Agriculture
- State funded and annual fees for farmers (100 EUR)



# How to motivate the farmer

- Economic incentives
  - State economic compensation in case of Salmonella
  - Demands from insurance companies, banks (loans), other industry programs
- Different program steps (status)
- Relevant education
- Farmer-to-farmer communication, group pressure
- User-friendly systems



# Affiliated herds



**84 % of dairy cows and 58 % of dairy herds**



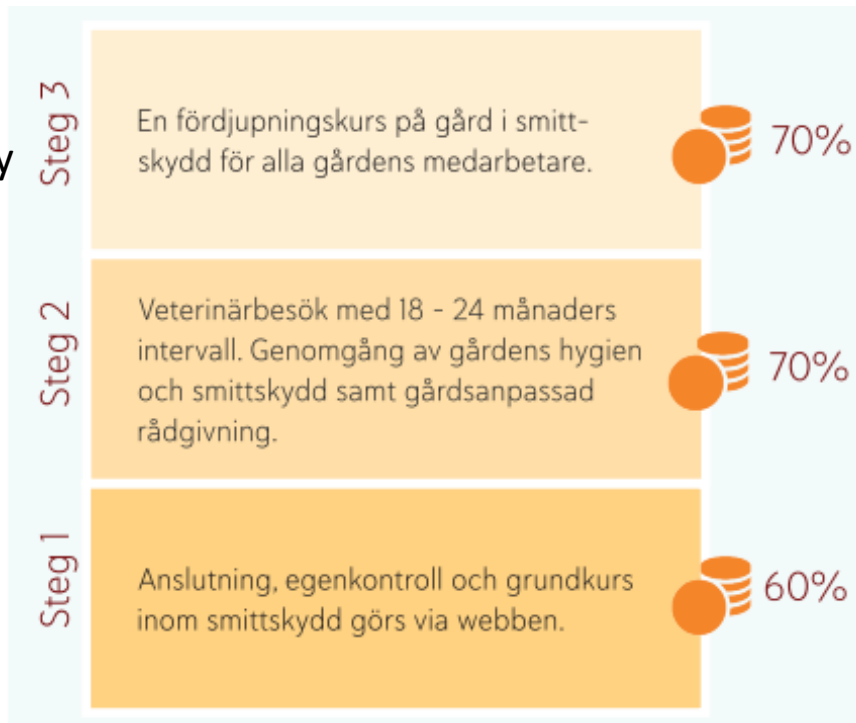
**22 % of beef cows and 8 % of beef cow herds**

# Smittsäkrad besättning

Extra education in biosecurity  
on farm

Veterinärbyrås rådgivning  
Hygiene, biosecurity

Webbaserad kurs och  
självinspektioner



State financial  
compensation  
in case of  
Salmonella



# Biosecurity risk assessment questionnaire

- Web based questionnaire regarding on biosecurity routines and facilities of the farm
- Divided into 7 areas
  - Animal contact, visitors/staff, transport/equipment, hygiene/health monitoring, feed, manure, surroundings
- Result after each section along with advice
- Results saved in the program
- Repeated every 18-24 months



[www.smittsäkra.se](http://www.smittsäkra.se)

## Smittspridning med människor



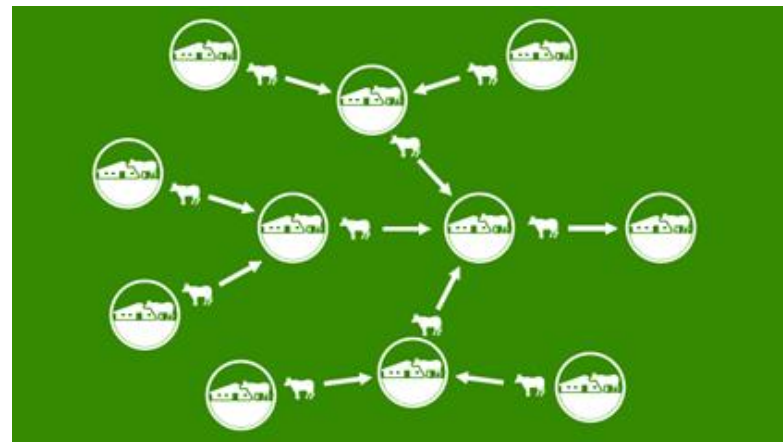
## Smittspridning med människor



## Other requirements



Veterinary biosecurity advice when rebuilding or constructing new buildings



Rules about contact between herds



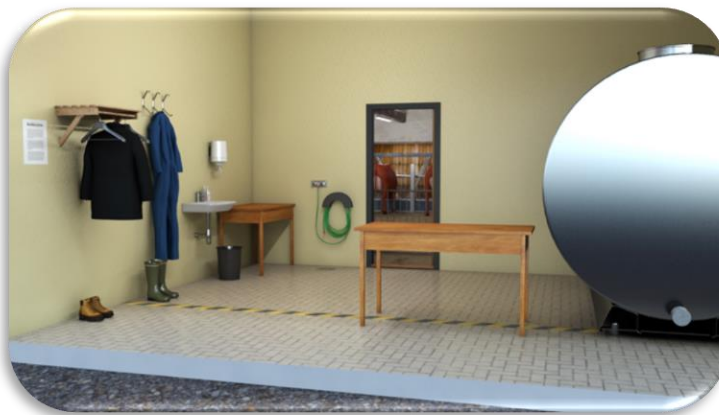
# Veterinary inspection checkpoints (examples)

## Hygiene facilities for visitors



## Besöksingång Smittsäkrad besättning

Kontakta oss innan du går in 



## Smittsäkrad besättning

### Välkommen till vår gård!

För att skydda djuren från smitta vill vi att alla besökare följer dessa rutiner:



Kontakta \_\_\_\_\_ innan du går in.

Telefon: \_\_\_\_\_



Tvätta och desinficera händerna före och efter besöket.



Använd i första hand gårdens egna skyddskläder och stövlar.



Ta bara med dig väl rengjord utrustning.

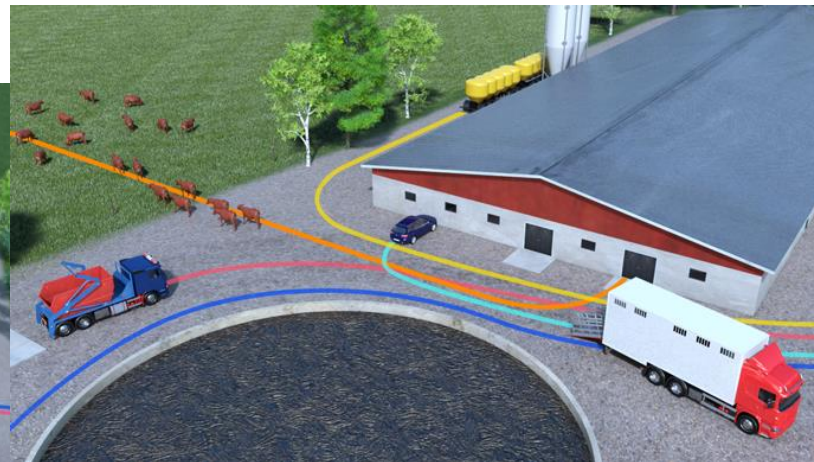
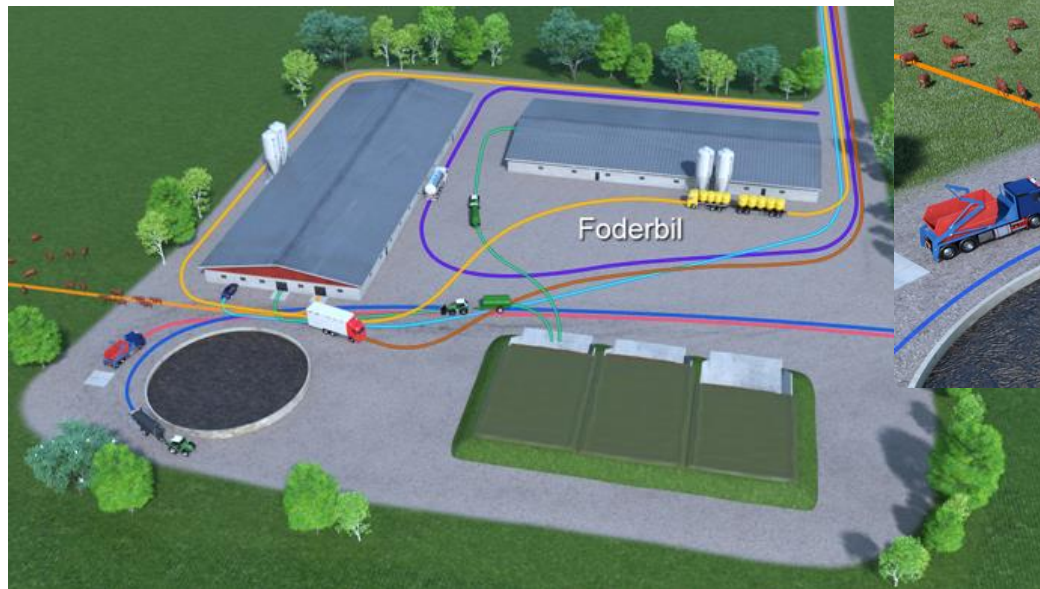


Om du har varit i kontakt med djurbesättningar i utlandet, vänta 48 timmar innan du går in till våra djur (fem dygn om du har varit i ett land som har mul- och klövsjuka).

Vid organiserad besöksverksamhet gäller särskilda regler.

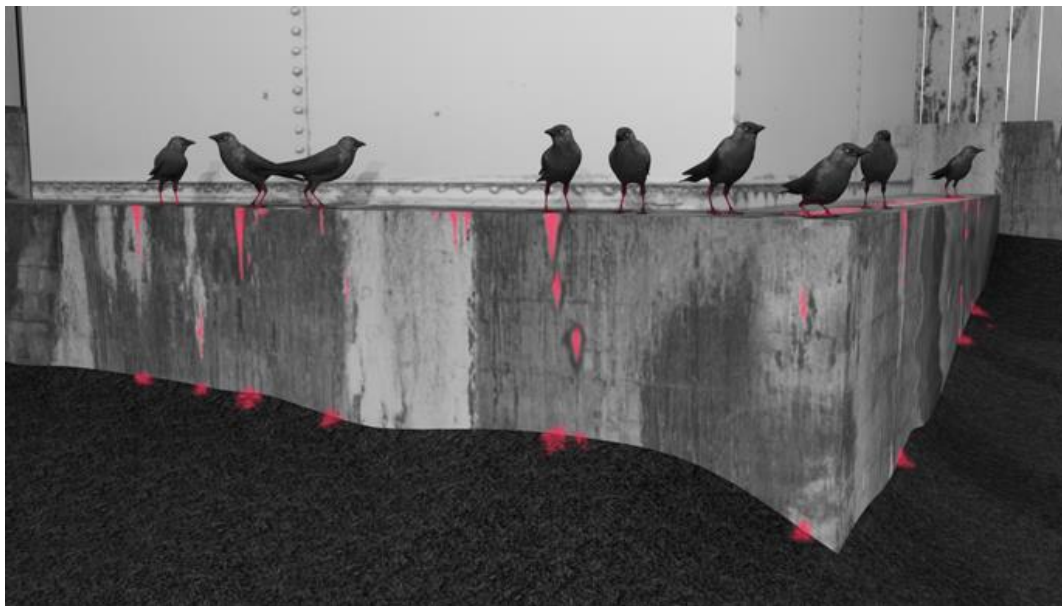
# Veterinary inspection checkpoints (examples)

Internal/external traffic



# Veterinary inspection checkpoints (examples)

Feed storage hygiene



# Veterinary inspection checkpoints (examples)

## Cleaning routines

**Smittsäkrad besättning**

**Dokumentation** årlig stallrengöring/rengöring mellan omgångar

Besättning: \_\_\_\_\_  
Datum: \_\_\_\_\_

Stall/enhet	Frekvens	Rengöringsmetoder											Kommentarer	
		Tömning på djur	Utgrövtning/ grodrening	Torrrengöring östver utgrövtning	Björklagring	Ljårrengöring	Kisgrövtning	Varmvatten	Rengöringsmedel	Upprottning	Tornad östver utgrövtning	Desinfektion		

Sätt kryss i lämpliga kolumner per utrymme. Tom ruta = ej utfört. Tänk på att olika rengöringsmetoder passar olika bra i olika utrymmen.

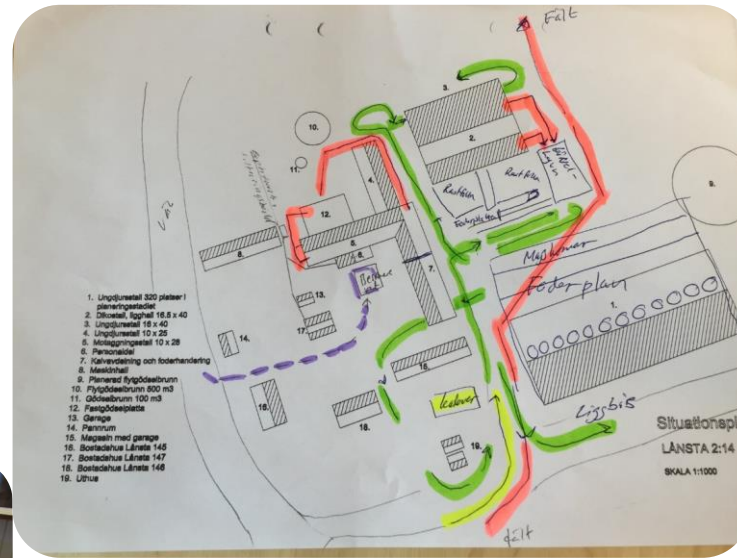
Övrigt

**VÄXA**

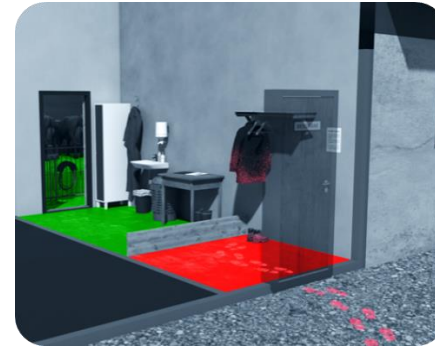


# Veterinary visit - Advice

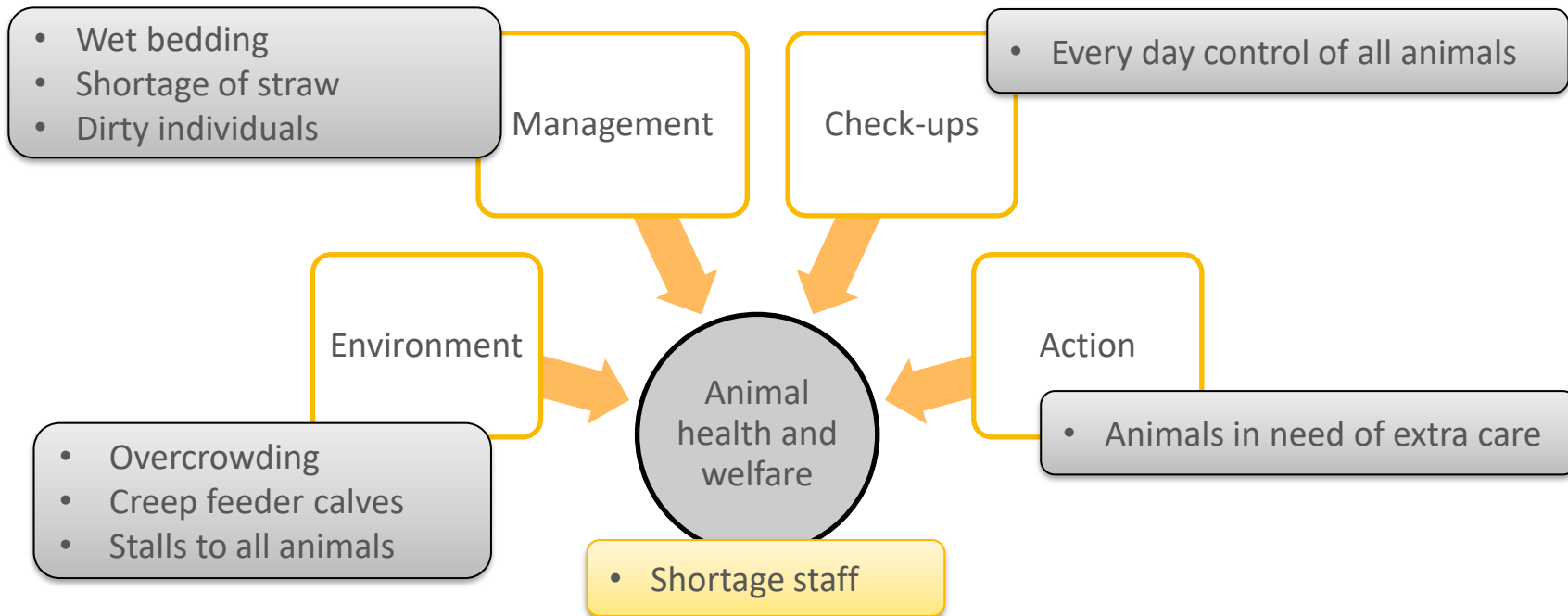
- Results of the risk assessment
- Results of the checkpoints



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maapikundafuse



# Official controls welfare, common shortcomings



# Be prepared



## Undvik onödiga anmärkningar

Här finns en lista som utgår från de vanligaste bristerna. Du kan använda listan för att undvika onödiga anmärkningar vid kontroll.

Det är lätt att bli hemmablind - observera gärna djuren och stallmiljön tillsammans med en kollega. Listan utgår från de vanligaste rapporterade anmärkningarna vid kontroll av djurhållning med nötkreatur\*

### Renhet och hygien

- Är alla djur tillräckligt rena eller finns det djur som behöver rengöras?
- Är alla liggytor rena, torra och ströade?
- Finns det ströbäddar som behöver bytas?
- Är den årliga stallrengöringen utförd och finns den dokumenterad?

### Beläggning och stalmått

- Finns det överbeläggning någonstans?  
Är överbeläggningen i så fall endast tillfällig och finns det en plan för att sänka den?
- Används stallar och boxar till den djurstorlek eller djurkategori som de är byggda för?  
*Om inte, kontrollera att mätten ändå uppfyller lagkraven.*



[Undvik onödiga anmärkningar \(vxa.se\)](https://vxa.se)

**All checkpoints  
ok**

**Animal holding  
ok**

**Voluntary  
actions**

**The herd  
decides actions  
themselves**

**Commanding  
actions**

**The herd must  
improve**

**Sanctions**

**Fines  
Prison  
Ban of keeping  
animals**



# Herd management





# Suckler herd management, basics

- Herd animals
  - Eat, drink, rest together
  - Natural herd size 60- 80 animals
    - Sub groups with 10-12 animals
    - Find their place in 1-2 days
    - Sensitive to stress
  - Important to take into

consideration when planning

- Feeding place
- Placing and design of water troughs
- Cubicals, shelters

**Lowest ranked animals sets the bar for the whole herd!**



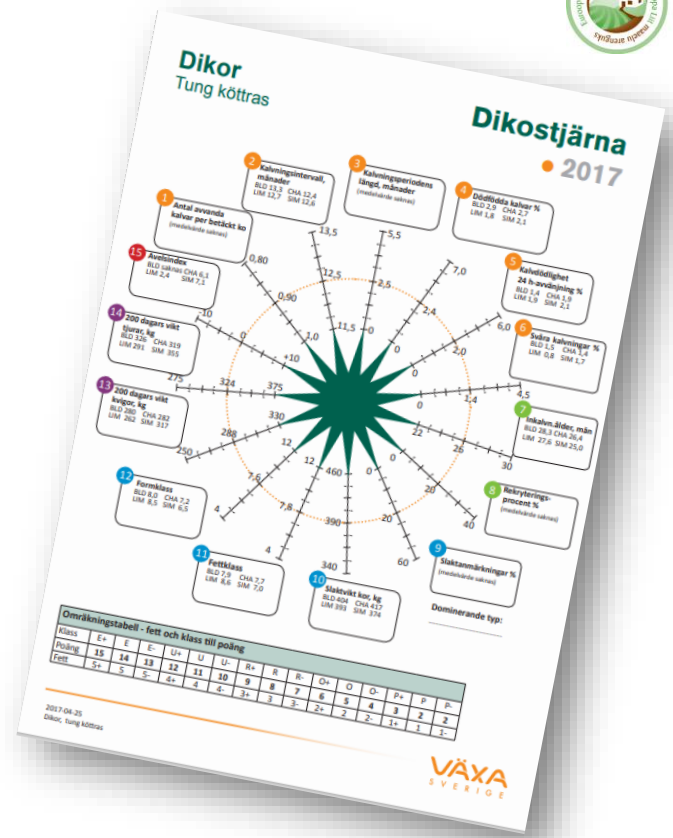
## Success with suckler cows!

- Good fertility and long-lived
- Surviving calves in good health
- High daily weight gain in calves
- Low variable costs



# Key figures – Cow-calf operations

- Weaned calves per covered cow
  - Fertility
  - Pregnancy
  - Calf mortality
- Calf weight at weaning
- Length of calving period
- Calving interval
- Replacement rate
- Variable costs (housing, man hours)



Omväningstabell - fett och klass till poäng

Klass	E+	E	E-	U+	U	U-	R+	R	R-	O+	O	O-	P+	P	P-
Poäng	15	14	13	12	11	10	9	8	7	6	5	4	3	2	2
Fett	5+	5	5-	4+	4	4-	3+	3	3-	2+	2	2-	1+	1	1-

# KAP Breeding

## K (Beef), A (Breeding), P (Production)

- Purebred herds
- Regular weighing
  - Birth, 200 days (weaning), 1 year
- Conformation
- Base for breeding
- Statistics



### 4 important breeding values

- FIX – Easy Calving
- MIX – Maternal traits
- PIX – Production traits
- AIX – Breeding value, An economical value of FIX, MIX and PIX together

# Sire breed

Crossbreeding gives a heterosis effect

The land of the farm, type of feeding, and destination for the offspring should determine what breed is chosen

Lighter breeds suitable for pasture based systems



# Slaughter and follow-up

- Results from abattoir
- Directly to farmer
- Processed in some management tools
  - Key numbers
  - Heifer calving age
  - Replacement %
  - Slaughter planning etc.



# Slaughter and follow-up

- Weight, fat, class
- EUROP-system
- Age
- Daily weight gain
- Payment
- Goals

Grad av marmorering		E	U	R+	R	R-	O+	O	O-	P+	P	
Rimmarering	5	200	200	200	200	200	200	200	0	0	0	Lagst klass O
Stut, ungtko & kviga	4 3	150 100	150 100	150 100	150 100	150 100	150 100	150 100	0 0	0 0	0 0	Fett 2+ till 4 Vikt 275-400
Stut	425 -	4050	3950	3900	3875	3850	3825	3800	3775	3700	3295	
Ungko	275 - 424,9	4600	4550	4500	4475	4450	4395	4350	4325	4100	3495	
	250 - 274,9	4600	4550	4500	4475	4450	4395	4350	4325	4100	3495	
	225 - 249,9	3250	3200	3150	3125	3100	3075	3050	3025	2950	2550	
	200 - 224,9	2950	2900	2850	2825	2800	2775	2750	2725	2650	2250	
	- 199,9	2550	2500	2450	2425	2400	2375	2350	2325	2250	1850	
Ungtjur	425 -	3950	3900	3850	3825	3800	3775	3750	3725	3650	3245	
Yngre tjur	275 - 424,9	4500	4450	4400	4375	4350	4275	4250	4225	4000	3395	
Kviga	250 - 274,9	4500	4450	4400	4375	4350	4275	4250	4225	4000	3395	
	225 - 249,9	3150	3100	3050	3025	3000	2975	2950	2925	2850	2450	
	200 - 224,9	2750	2700	2650	2625	2600	2575	2550	2525	2450	2050	
	- 199,9	2450	2400	2350	2325	2300	2275	2250	2225	2150	1750	
Ko & tjur	275 -	4220	4170	4120	4095	4070	4045	4020	3995	3770	3265	
	250 - 274,9	4220	4170	4120	4095	4070	4045	4020	3995	3770	3265	
	225 - 249,9	3270	3220	3170	3145	3120	3095	3070	3045	2970	2570	
	200 - 224,9	3070	3020	2970	2945	2920	2895	2870	2845	2770	2370	
	175 - 199,9	2970	2920	2870	2845	2820	2795	2770	2745	2670	2270	
	- 174,9	2770	2720	2670	2645	2620	2595	2570	2545	2470	2070	Tjur -200 öre
Övrigt												
Tilläggsersättning som kräver särskilt kontrakt												
		Kategori	Vikt	Klass	Fett	Tillägg						
		Nöt	250-424,9	E till P+	2 till 4	+350 öre						
		Övriga Nöt				+50 öre						
		Nöt	250-424,9	E till P+	2 till 4	+50 öre						
		Övriga Nöt				+50 öre						
		Stut/kvialuko	>250-	E till P+	2 till 4	+200 öre						
		Övriga Nöt				+100 öre						
Fettgrupper												
		Tilläggsdrag från grundnoteringen										ÖVRIGT
		1	2-2	2+3-	3	3+	4-	4	4+	5	*	**
Ungnöt	-200	-40					-100	-200	-500			K-stämplat samtliga
Ko, tjur	-200	-40					-100	-200	-500			djuslag -200
		BASPRIS										Vi tar ej emot Highland Cattle
Lamm	-400				-800	-1000	-1350	-1800				
Får	-200						-250	-400	-700			



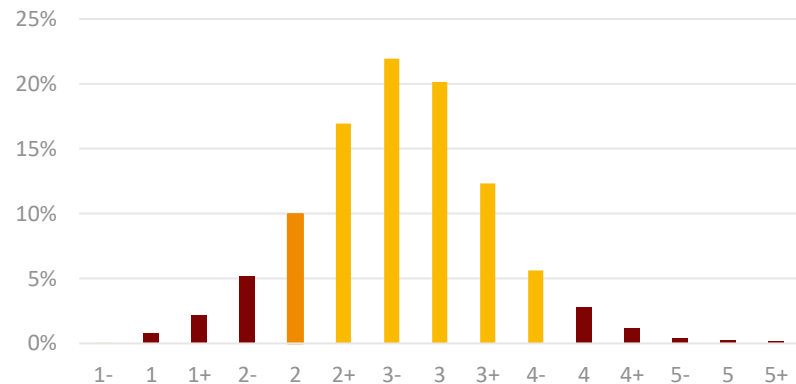
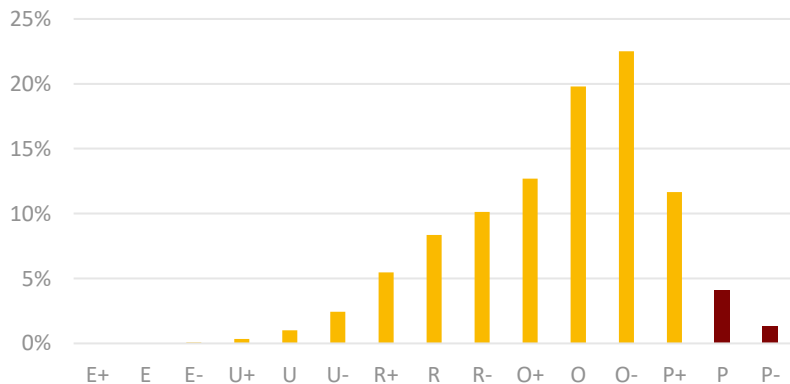




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# Slaughter and follow-up

- Weight most important
- Fat and class
  - Sex
  - Breed
  - Maturity



# Slaughter and follow-up, remarks

## Inspection

- Before and after slaughter
- Food security
- Results in remarks noted

## Interpretation

- Frequency
  - Which ones?
  - Prevention?
- 
- Mechanical injury
  - Liver damage – parasites, abscesses
  - Lung/heart-decease

Kod	Benämning	Alternativ benämning
01/02	Salmonella	Salmonella
03/04	Tuberkulos	Turberkulos
05/06	Atypisk mykobakterios	Fågeltuberkulos
09/10	Trikinos	Trikinos
11/12	Cysticerkos	Dynt
13/14	Echinokockos	Blåsmask
16	Onchocerkos	Bindvävsmask
17/18	Rödsjuka	Rödsjuka
19/20	Septikemi	Allmänt utbredd sjukdom
23	Otillåten läkemedelsförekomst	Otillåten halt av läkemedel
25/26	Tumör	Tumör
27/28	Traumatisk serosit	Vasst
29/30	Abscess	Böld
31/32	Ledskada	Ledskada
33/34	Avvikande utseende	Avvikande utseende
35/36	PSE	PSE (svin)





# Suckler herd management, basics

Larger, heavier breed with good milk production requires good pasture in the summer and more feed in winter

Smaller and tougher breeds suits less fertile lands and requires less feed in the winter

The more even a herd is, the easier it is to manage the feeding

# Cow-calf operations in general

- Calves
  - Sold at weaning, 5-7 months
- 150 abattoirs, 8 have 90% of the market
- Transports
  - Maximum 8 h (legislation)
  - Permit and training required
- Animal sales
  - Between farms
  - Via personnel from abattoirs



# Suckler herds, housing

- Pasture based
- Spring calving
- Housing



# Suckler herds, housing

- Bedding
- Cubicles
- Separate resting place for calves is required by law



# Suckler herds, housing

- Shelter
  - Stationary
  - Movable



# Suckler herds, housing

- Ranch
  - Without built shelter



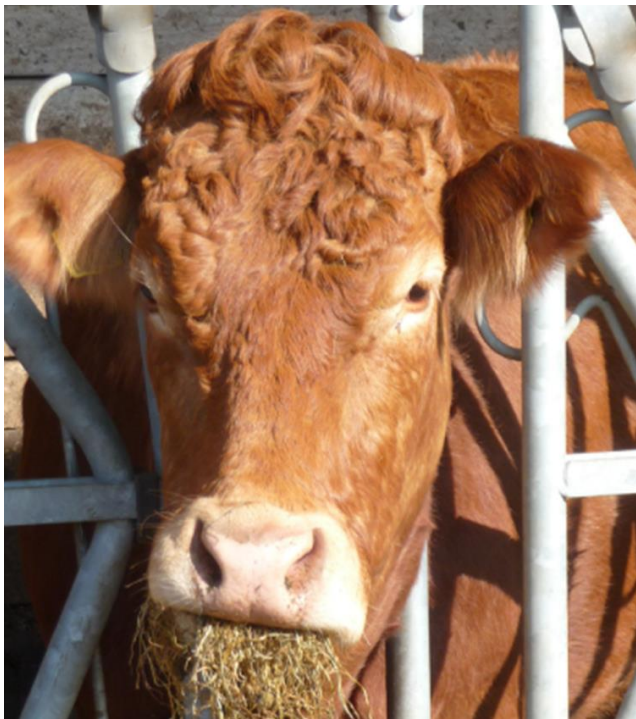


## In the winter...

- Feed requirements slightly increased
  - Wind
  - Water
  - Body condition
- Lactating cows and fattening animals needs rarely affected



## Sorting the cows



- Control the feed intake
- Older animals, good condition (80 % of requirements)
- After first lactation, cows with twins, lower condition scores (100% of requirements)
- Pregnant heifers

# Suckler cows - Nutritional needs

- Body condition
- Size
- Age
- Pregnancy
- Breed milk production
- Climate



1

Klass 1 –  
Mycket mager

(BCS 1-3)  
Mycket mager, skelettstrukturen syns tydligt, samtliga revbenen synliga, svag lårmskulatur, ländkotornas tornutsnitt syns tydligt.



2

Klass 2 –  
Mager

(BCS 4)  
Mager, men de främre revbenen är ej synliga, ländkotornas tornutsnitt kan kännas med handen, Inget fett i dröglappen.



3

Klass 3 –  
Bra hull  
vid kalvring

(BCS 5-6)  
Normalhull, ländkotornas sidutsnitt ej synliga, antydan till fettinlagring i svansgropen, Inga revben synliga.



4

Klass 4 –  
Fet

(BCS 7)  
Höftbenen något synliga, fettknutor vid svansgropen, ländkotornas tornutsnitt kan endast kännas vid kraftigt tryck. Tydlig fettinlagring i dröglappen.



5

Klass 5 –  
Extremt fet

(BCS 8-9)  
Extremt fet, skelettstrukturen svår att identifiera, rörligheten kan vara nedsatt.



# Heifers

- At first calving, 24 months old, daily weight gain should be 600-900 g/day
- Should weigh about 80% of adult weight at calving
- After calving a daily weight gain of 200-400 g/day is optimal
- Free access to forage containing about 10,5 MJ/kg DM



# Feeding suckler cows

- Mainly forage and pasture
  - A lot of calcium
  - Need phosphorus and trace elements
- Selenium important
- Selenium and vitamin E before calving



# Before calving

- More than half of the foetal growth the last month
- Not enough nutrients the last month
  - weak calves
  - decreased milk production
  - fertility problems



# Calving



- Space
- Separate from other cows
- Cleanliness/hygiene
- Safe to assist
- Easy to keep an eye on the cows before, during & after calving
- Check-ups often
- Check new born calf including suckler reflex
- Make sure the calf gets colostrum



# Weak newborn calves

- Suckling reflex?
- Colostrum
- Extra heat and management
  
- Stillborn calves 2,5 %
- Calf mortality day 1 to weaning 1,4 %

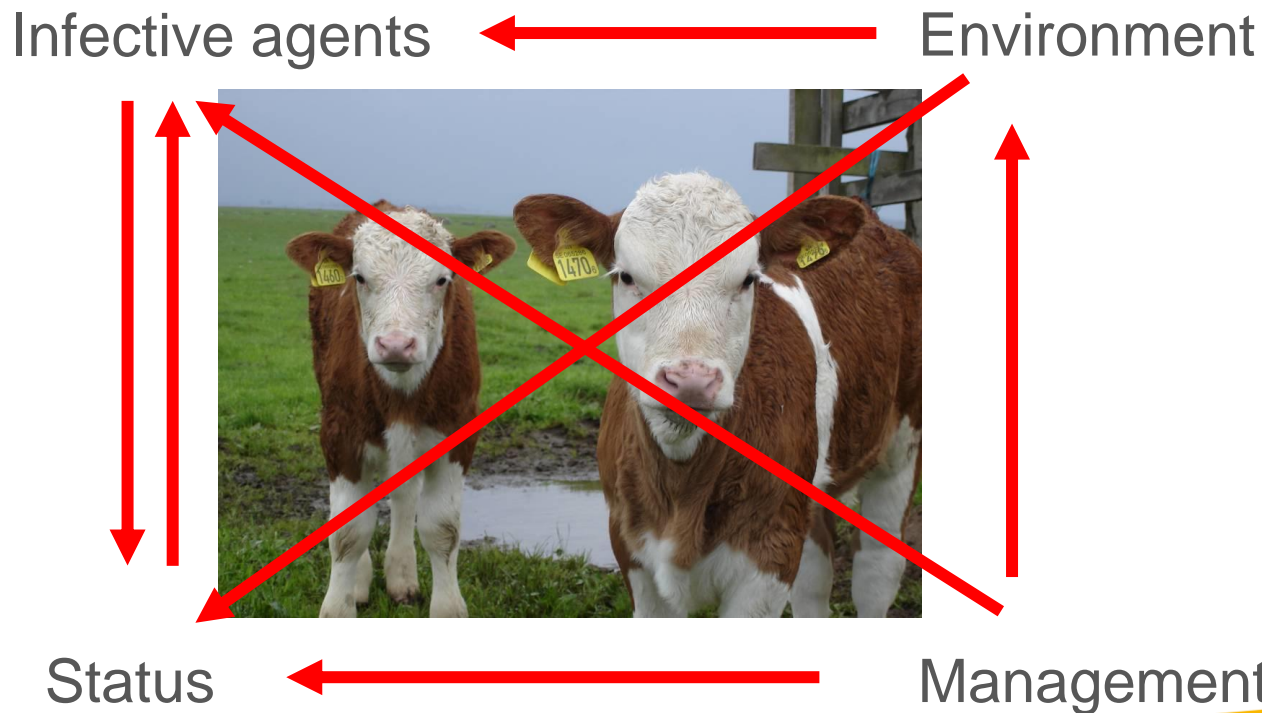
## Colostrum intake within 4 hours

Calving	Strong suckling reflex	Weak suckling reflex
No help	8 %	78 %
Some help	26 %	94 %
Lots of help	49 %	98 %

Elisabeth Homerosky et al. 2017

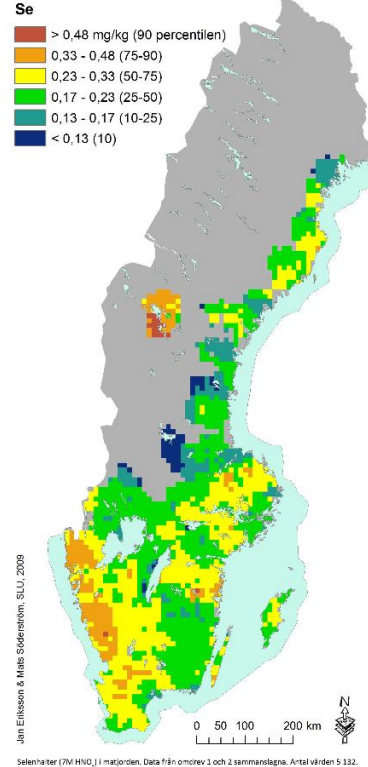


# Robust calves stay healthier



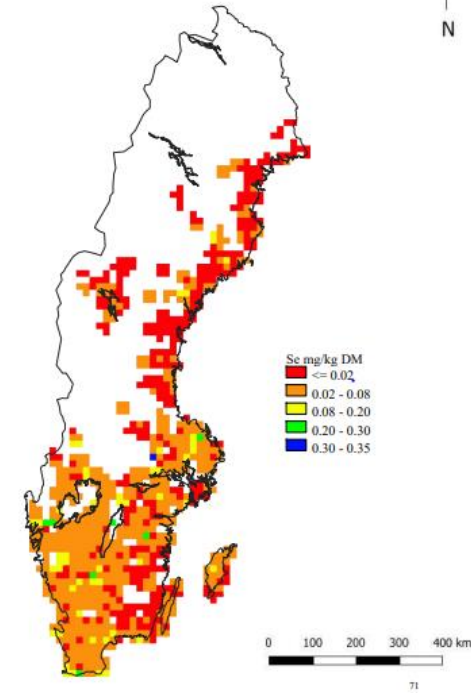
# Selenium deficiency

- Low selenium in ground
- Non-organic- Selenite and Selenate
- Organic- Seleniumyeast, selenomethionine
- Continuous intake in feed
- Small body reserves
- Selenium in uterus, calf reserves first 30-60 d
- Key times for selenium (STRESS)
  - To the cow before calving
  - To calves before stress
  - To bulls and cows before breeding



Datavärdsckap Jordbruksmark, SLU

Appendix 13 Map of selenium



Mineral elements in clover- and grass forage in Sweden Kajsa Lätt, SLU, 2019



# Symptoms

- Diffuse, a herd health problem
- Congenital- around calving
- Stillbirths
- Classic white muscle disease – recumbent calves, alert, eats, no fever
- Most commonly 4-6 weeks old, fast-growing calves
- Gait abnormalities
- Brown urine (myoglobin)
- Decreased growth rate
- Decreased immunity
  - Disease
- Lower fertility





# Multifactorial

- Access
  - Feed
  - Mineral feed
  - Group size and feeding
- Needs
  - Growth rate
  - Grazing
  - Regrouping
- Stress
  - Transport
  - Other disease
  - Heat and cold stress

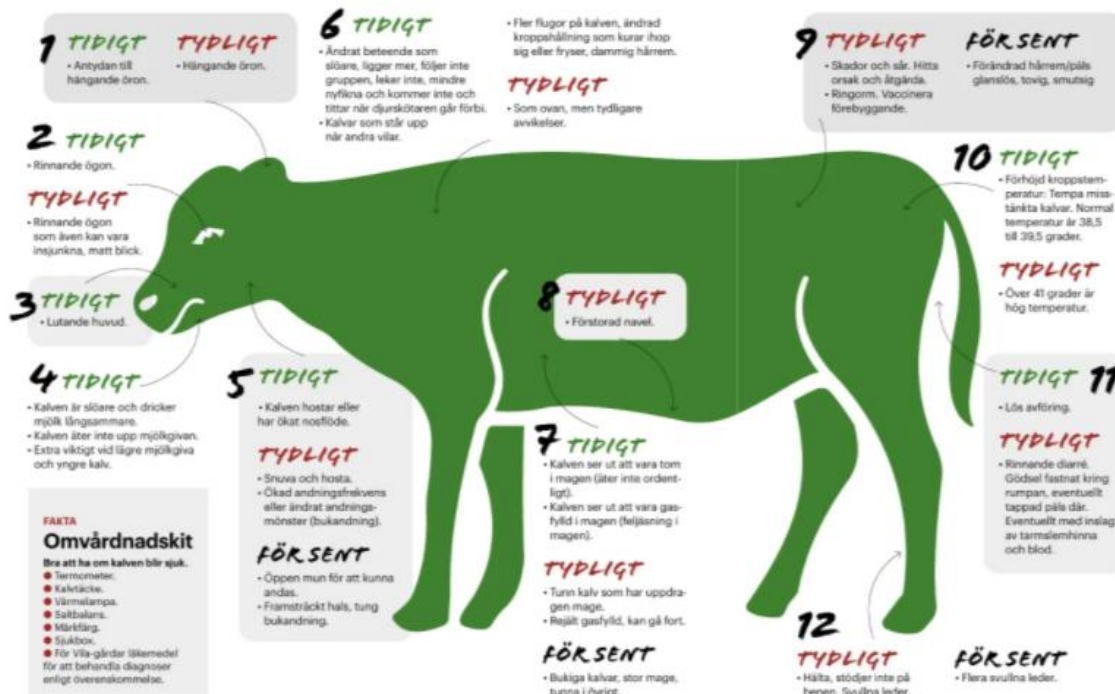


# Biosecurity, spread of disease

- Animal to animal (nose to nose)
- Manure to animal
- Airborne spread within farm or in stall OR between farms
- Surroundings to animal
- Equipment to animal
- Feed to animal
- Human to animal OR Animal to human zoonosis

# Find calves in need early

- Body posture
- Feed intake
- Dehydration
- Head tilt
- Joints
- Diarrhoea
- Nasal discharge
- Coughs
- Eyes



# Calf check

- Both in distance and hands on
- Faeces?
- Nasal discharge or coughing?
- Swollen?
- Lameness?
- Navel ok?
- Body temperature? 38,5-39,5°C
- Dehydration? Skin turgor?



# Calf Scours, common pathogens

- Rotavirus
- Coronavirus
- Cryptosporidium      Parasite
- Eimeria                      Parasite
- E. Coli                      Bacteria
- Salmonella                Bacteria





# Infectious agents diarrhoea



***E. Coli F5***

Incubation <24 h

**Clostridiosis**

Incubation <24 h

**Rota**

Incubation 18-24 h

**zoonosis**

**Cryptosporidia**

Incubation 2-7 d

**Corona**

Incubation 20-36 h

**Coccidia**

Incubation 10-20 d

**zoonosis**

***Salmonellosis***

Incubation 1-3 d

0 1 2 3 4 5 6 7 8 veckor

# Treatment diarrhoea

- Water, electrolytes and milk to calves with diarrhoea and suckling reflex
- Calf standing or in upright position, if flat on side - veterinarian
- Rule of thumb a total of 15 % of body weight 2-3 times per day
- Antibiotics – Rarely
- Coccidia treatment – Sometimes
- NSAID – Makes the calf feel better



Foto: Catarina Svensson

# Pneumonia

## PEACE AND QUIET

- Isolate sick calves
- Nice and cosy, no draught
- Keep warm
  - Calf jacket
  - Heat lamp
  - Plenty of straw
- Help the calf to get feed
  - If dehydrated, electrolytes and water

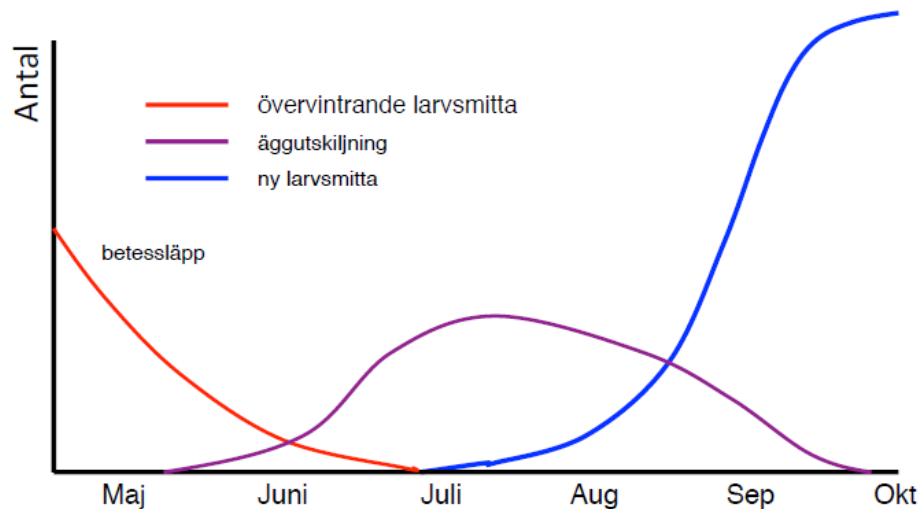




# Treatment respiratory disease

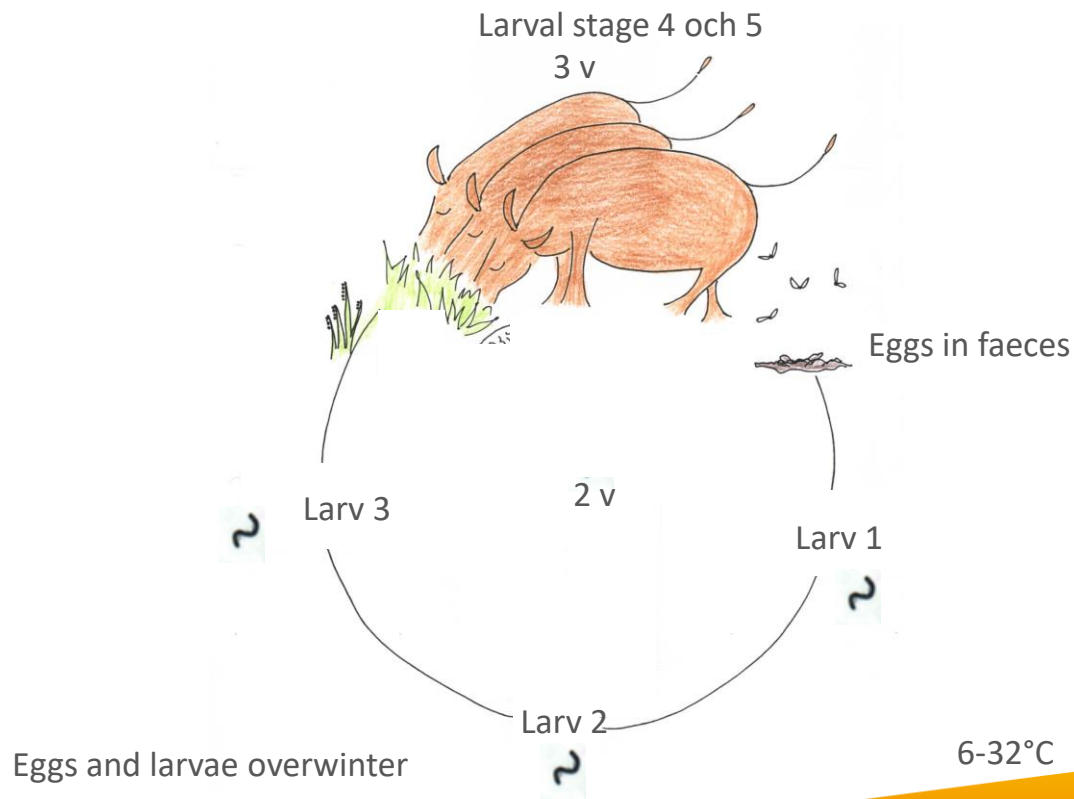
- Early treatment
- Penicillin
- NSAID
- Cull if necessary

# Gastrointestinal parasites, life cycle

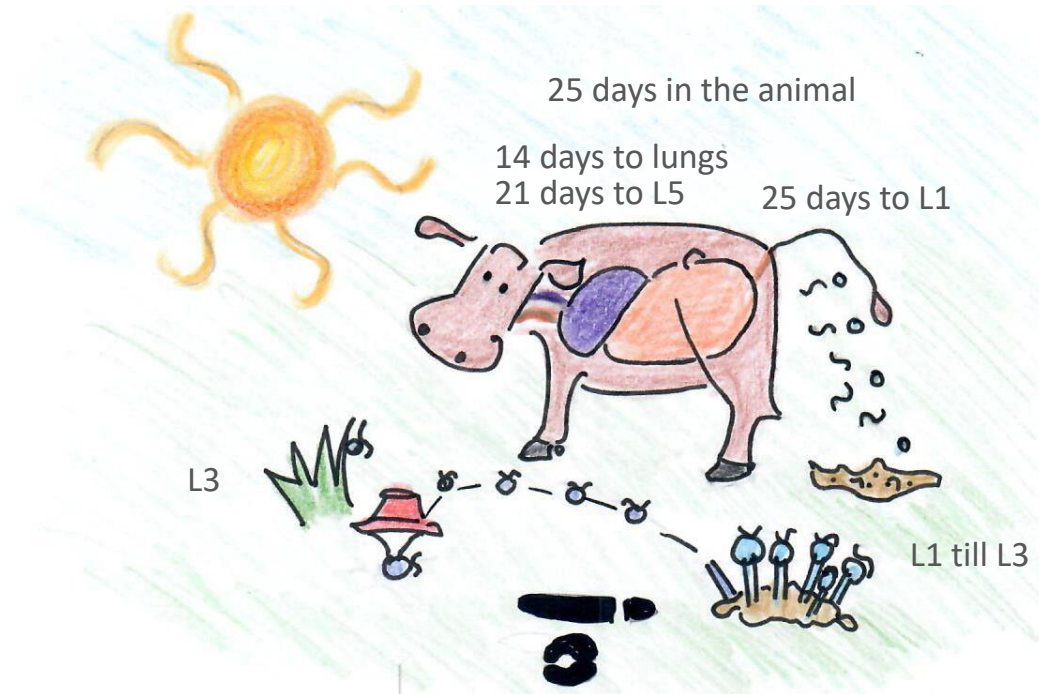


- Temperature
- Rainfall
- Sunshine
- Snow
- Vegetation
- Mechanical intervention
- Other micro organisms

# Gastrointestinal parasites, life cycle



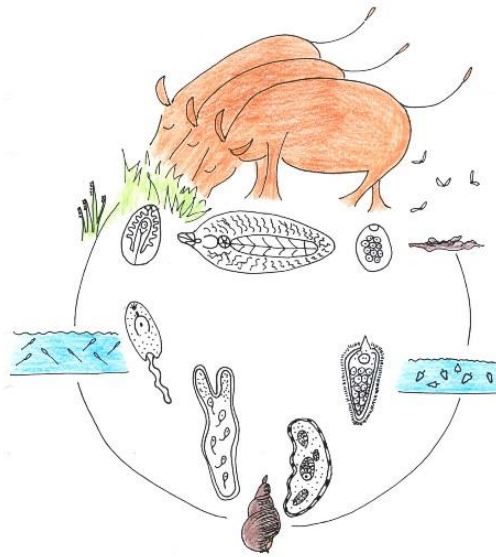
# Lung worm (*Dictyocaulus viviparus*)



7 days on pasture

# Liver fluke

- Liver damages
- Decreased milk production
- Decreased live weights/emaciation
- Fever
  
- All ruminants
- All ages
- Deaths





# Ringworm a zoonosis

- Trichophytes
- Stays in the environment for a long time
- Immune suppression – sensitive calves!
- Treatment varies
- Less symptoms outdoors
- Vaccination available



# Pink eye

- Not so common in Sweden
- Different bacteria, *Moraxella* spp.
- Usually a vector- flies most common
- Treat early with antibiotics to reduce risk of spread by vectors
- Always treat both eyes on affected animals
- Prophylactic treatment to reduce amount of flies
- Painful



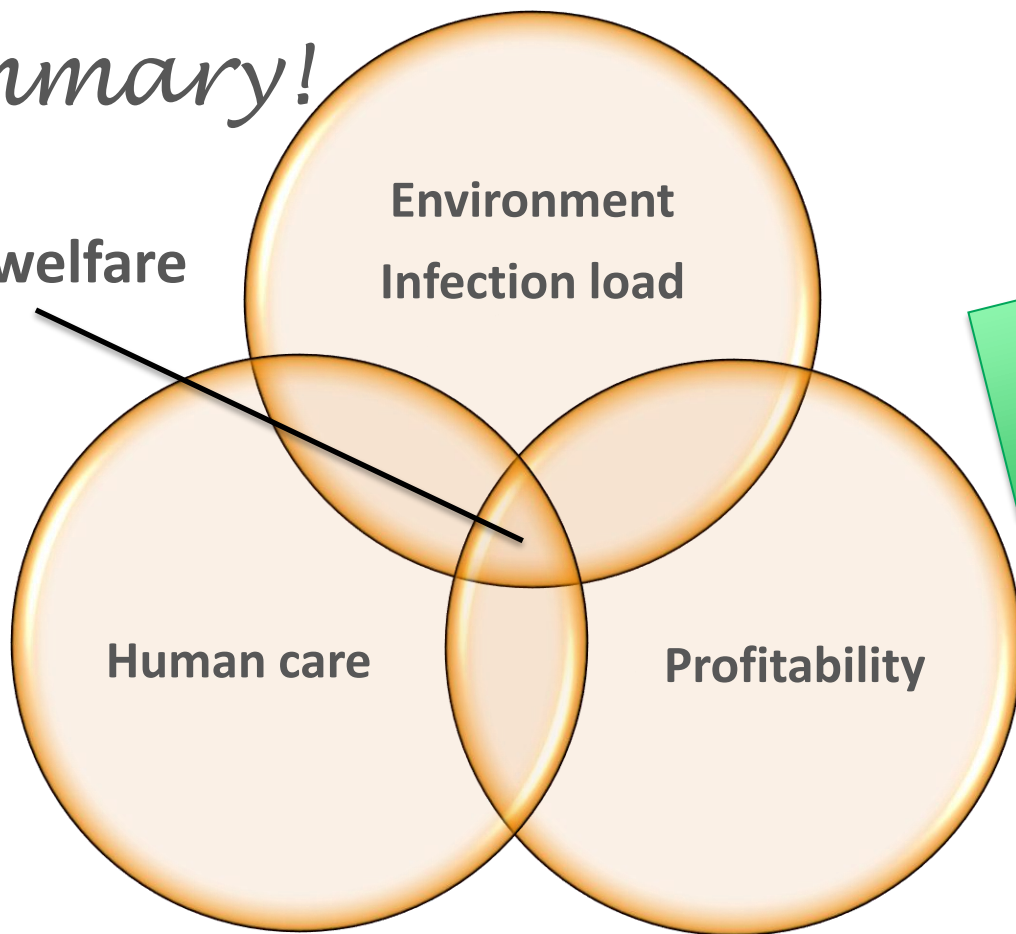


# Weaning strategies

- All at once
- Nose tray, hinders the calf from having milk
- Fence-line weaning
- 1/3 of the cows per week

# Summary!

Animal welfare



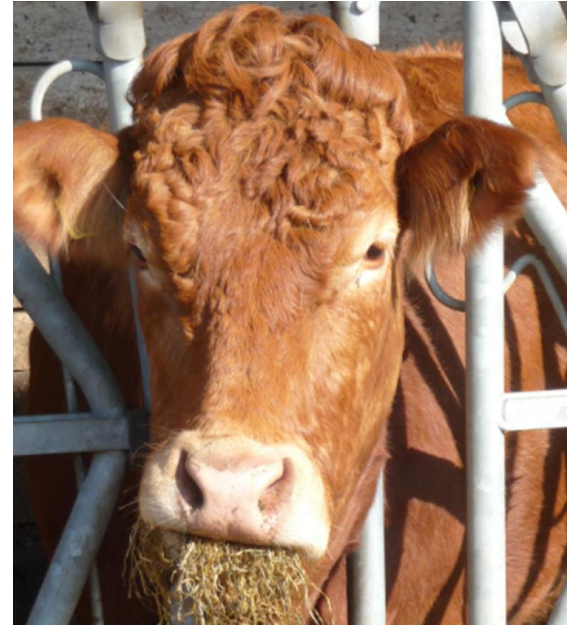
**Robust and  
healthy cattle**



*Summary!*

# Success with suckler cows!

- Good fertility and long-lived
- Surviving calves in good health
- High daily weight gain in calves
- Low variable costs





# Acknowledgements

- Thank you for inviting us
- Thank you for listening
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- Katinca Fungbrant

