

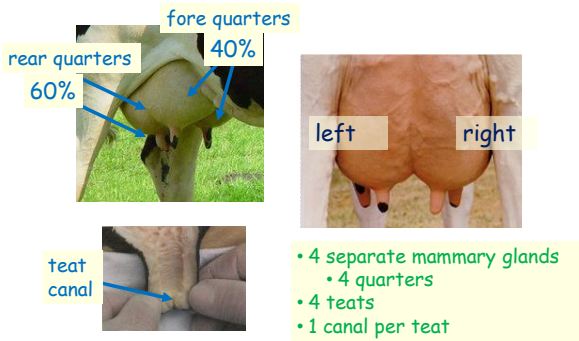
Milk and milking dairy cows



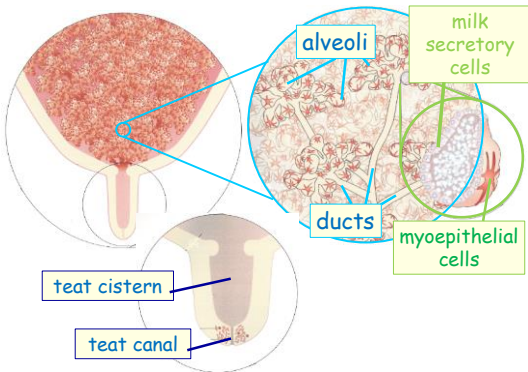
Animal Production Systems



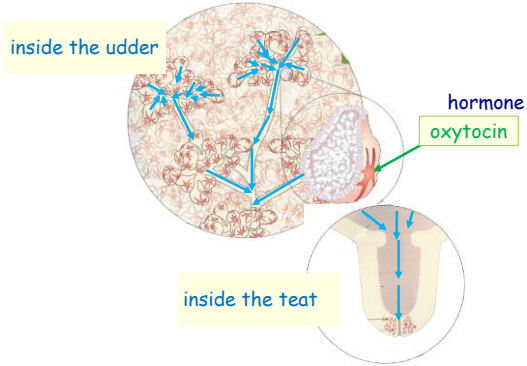
structure of the cow's udder



inside the udder



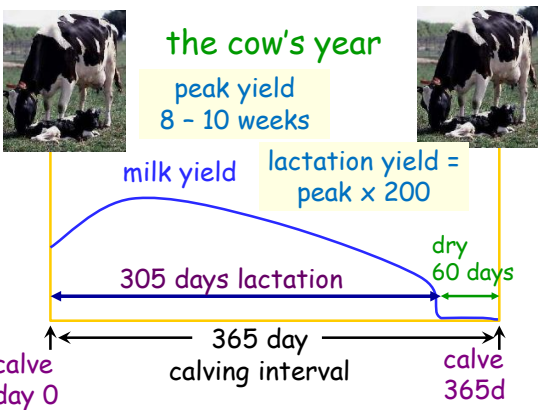
cow should let her milk down before clusters are attached



Milk income = yield x composition

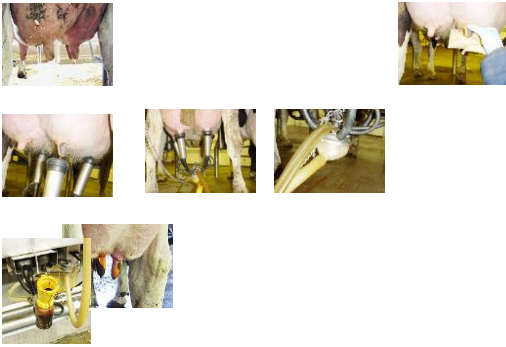
Quality - fat & protein

Hygiene - bactoscan & SCC

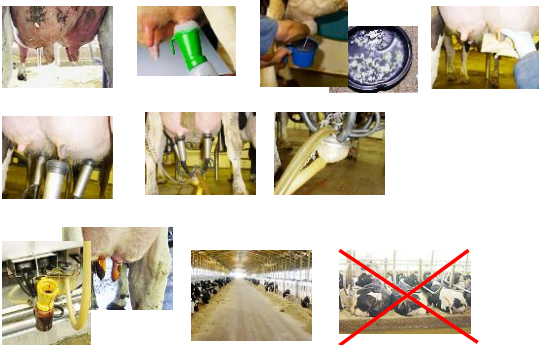


milking

basic milking routine



full milking routine



milking routine

calm

consistent

clean

milk letdown

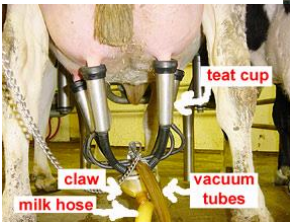
milk removal

efficiency

cost

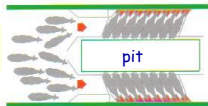
recovery

the milking cluster



herringbone parlour

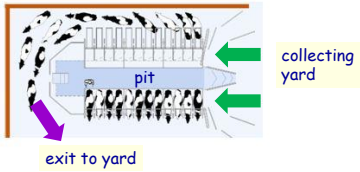
collecting yard



rapid exit, side by side parlour



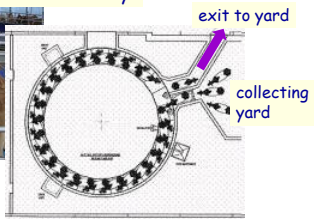
parallel-parlour



rotary parlour



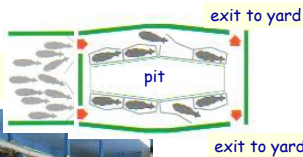
external rotary



tandem



collecting yard



robotic milking

Automated Milking System (AMS)

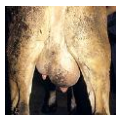


Mastitis
udder infection



mastitis

- definition - inflammation of mammary gland
- main symptoms-
 - clots in milk
 - swollen / hard quarter
 - raised body temperature
- may also be sub-clinical
 - high SCC



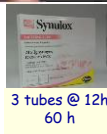
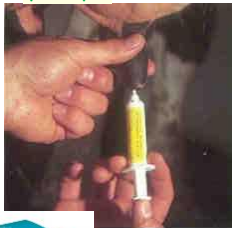
bacteria that cause mastitis

<ul style="list-style-type: none"> ▪ environmental <ul style="list-style-type: none"> ▪ <i>Streptococcus uberis</i> ▪ <i>Escherichia coli</i> ▪ bedding ▪ housing ▪ spread between milking's 	<ul style="list-style-type: none"> ▪ contagious <ul style="list-style-type: none"> ▪ <i>Staphylococcus aureus</i> ▪ <i>Streptococcus agalactiae</i> ▪ <i>Streptococcus dysgalactiae</i> ▪ <i>Streptococcus uberis</i> ▪ udder, teat skin ▪ cracked teats ▪ during milking
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treating mastitis

- antibiotics
 - intramammary
 - broad spectrum
- milk must be withheld from bulk milk
 - time depend on antibiotic

prompt



cost of mastitis

- discarded milk
- treatment costs
- time / labour
- reduced milk yield
- and in severe cases:
 - culling 27% of culls
 - deaths

£211

severe cases £1,148



increased antibiotic use on farm

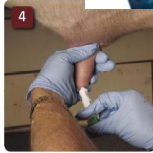
controls herd infection

dry cow therapy

at end of lactation



1. teat sealant
 - SCC <200 000 / ml



barrier

2. long acting antibiotic + sealant
 - all 4 quarters at last milking

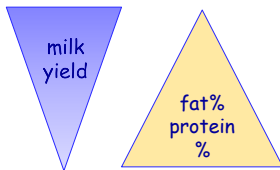


https://assurance.redtractor.org.uk/contentfiles/Farmers-6912.pdf?_=636585117784901746

Factors affecting milk yield & composition

milk yield depends on breed of cow & genetics

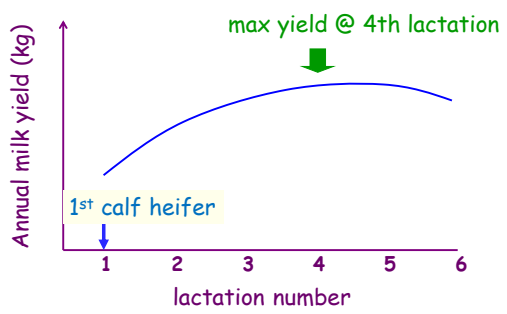
1. Holstein
2. Holstein/Friesian
3. Ayrshire
4. Shorthorn
5. Jersey



great variation within breed

i.e. a high yielding Jersey could out-yield an average Holstein/Friesian

age of cow / number of calvings

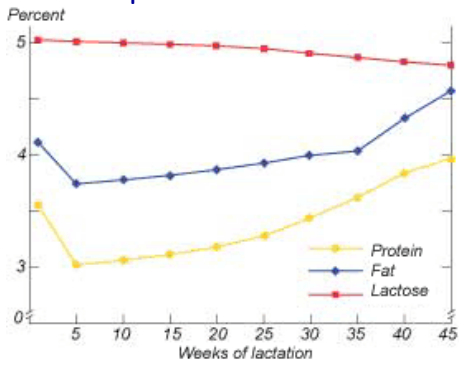


type of feed

milk yield
milk composition

- forage
 - fibre milk fat %
 - quality of forage
 - amount of concentrate fed
 - dietary fat milk yield
- milk fat

milk composition over lactation



milking frequency - typical 2X per day

3X daily

- increase milk yield
 - +8 to 10%,
 - 20%
- increase labour cost
- increase parlour use
- increase feed

1X daily

- reduced milk yield
 - 30%
- lower cost of production

summary

- milk
- lactation curve
- milking routine
- milking parlours
- mastitis
- factors that influence milk yield & milk composition
