Housing the dairy cow

Animal Production Systems A4005

why house?

- weather -
 - protection from rain, snow, wind
 - protection from sun
 - thermal neutral zone
- ideal temperature high producing cow
 = 10°C
- lower critical temperature -20°C
- upper critical temperature 26°C

why house?

- management
 - $\boldsymbol{\cdot}$ control environment
 - control diet
 - regulating food intake
 - regulating food quality
- limit damage to pasture • poaching



when to house?

- winter
- early lactation and winter
- all year



cow comfort

How does a cow lie in pasture



housing should provide comfortable lying area



the cow needs to be able to easily move from lying to standing and vice versa







health and welfare

- clean, dry lying area
 - minimise mastitis / SCC
 - maximise milk sold
 - minimise bactoscan
 - minimise lameness
 - standing in slurry
 - not lying down
 - injury

lameness

main causes: infectious digital dermatitis white line disease sole ulcers injury risk £180 per case treatment lost yield shorter herd life

risk factors: housing poor cubicles slurry tracks

ventilation		
	clean air	
air inlet		
Yorkshire boards		







UK systems



loose housing

which is best?



cubicles



undisturbed

personal space

- individual, raised beds
 - walk in, reverse out
 - $\boldsymbol{\cdot}$ not turn around
- partition
- can restrict lying time



size comfort



safe



slurry channel

raised bed





cubicle dimensions

- 400 to 600 kg cow
 - 1.15 m width
 - 2.3 m length
- 600+ kg cow
 - \cdot 1.2 m width centre to centre
 - 2.4 m length



105 cubicles per 100 cows

Newton Rigg





Types of cubicle

cantilever



cubicle bedding materials

- chopped straw
 - 200-400 kg per cow
- sand
 - 2-3 tonnes per cow
- sawdust, kiln dried
 180 kg per cow
- shredded paper
 396 kg per cow
- mats and mattresses



180 day winter amount per cow





requirements of loose housing

- sufficient space for all cows to lie down
 - Holstein 6.5 m²
 - + Channel Island 5 to 5.5 m^2
- straw use -1.5 to 3 tonnes per cow per winter cost

passageways, loafing areas



feed barrier



other feeding systems self-feed silage out of parlour concentrate feeding



water

- clean, fresh, ad libitum supply
- trough space 0.03 m³/cow



 $\boldsymbol{\cdot}$ stage of lactation



housing systems

- comfort
 - free movement
- bedding
- cost effective cubicles

total area / cow cubicles - 8.05 m²

• loose yard

loose yard - 10.5 m²

- loafing area
- feeding area