



# Food Animal Initiative

ENVIRONMENTS FIT FOR ANIMALS FIT FOR THEIR ENVIRONMENT

## *FAI Technical Datasheet C4 - Reduction in antibiotic use through respiratory disease management in finishing cattle - Update August 2005*

Use of antibiotics can give cause for concern see TDS 64 Reducing antibiotic use in farmed animals. Respiratory disease is the single greatest cause of mortality in cattle between 1 and 24 months of age (37% in a study undertaken in Northern Ireland)<sup>1</sup> and most of these mortalities are in dairy calves.<sup>2</sup> Thus it is probable that the greatest use of antibiotic in cattle is in the treatment of respiratory disease.

### ***'the facts.....'***

Respiratory vaccines alone will not prevent pneumonia in cattle. Pneumonia can be caused by bacteria and/or viruses - the latter being generally unresponsive to medication. Once medication is required there will be loss of production and possibly mortalities.

Air quality is one of the most important factors when putting in place prevention measures for pneumonia. Air quality can be improved for housed cattle by giving access to outdoor areas, reducing stocking density and keeping bedding clean thus reducing ammonia levels in the house.

Ammonia levels in cattle housing at FAI were measured at the end of the winter period 2004. The recommended level for animals during housing is below 15ppm although research shows that levels as low as 5ppm can cause damage to the lung tissues. Levels varied from 0.5 to 4ppm and housing with access to woodchip yards showed the lowest levels. With poor bedding management levels could easily rise above 5ppm.

Cattle are given access to an outdoor yard are more active. The dominant cattle make greater use of the area. The extent of activity periods may not be obvious as these occur early morning and evening.<sup>3,4</sup>

Fully drained outdoor yards cost £14 per sqm to erect using farm labour. Stocking increases of 25% have been undertaken at FAI with no detrimental effects where cattle have been given access to an equal area of outdoor yard. The yard will be paid for over 5 years or potentially even less when the benefits from improved health are quantified.



*Cattle in Woodchip yard*

### ***'.... the FAI response!'***

It is well known that the incidence of pneumonia is much lower in cattle kept outdoors and thus management practices at FAI have been developed to mimic this as far as possible. The following practices have been put in place in the beef finishing unit:

- Where possible dairy calves are sourced from a single farm and are reared on that farm. This reduces the negative effects of early weaning, change in environment and peer grouping.
- Dairy calves are not received under 14 weeks of age when they have development of their own immune system.
- Cattle are minimally mixed in the finishing unit although they may be moved as a group. Cattle are kept in these peer groups until slaughter.
- Incoming calves are given access to pens with woodchip runs to enable access to fresh air.
- Cattle are stocked at RSPCA Freedom Food levels i.e. 6sqm minimum for a 500kg animal
- Cattle are well strawed up twice weekly which decreases ammonia levels in the house.

Group outbreaks of pneumonia have not occurred since these practices have been out in place. Mortalities are low (0.5%) and not due to pneumonia.

1. [http://www.afsni.ac.uk/Services/Bovine\\_deaths\\_booklet.pdf](http://www.afsni.ac.uk/Services/Bovine_deaths_booklet.pdf)

2. Roger Hancock VLA personal communication

3. Anna Winton data collected at FAI 2004.

4. O'Connell J et al 1989 Comparison of dairy cattle behaviour patterns at pasture and confinement Irish J Agric Res 28: 65-72



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