Foot and Mouth and some research – Chris Lees

With Foot and Mouth on the agenda again perhaps we should begin to wonder a bit about what we are really doing, and why we get disease on the farm? Farming for health rather than firefighting disease is not a new idea. Indeed in the days before a "Health Industry" emerged, care of animals to avoid disease was important, self interested even, because your survival could depend on theirs. So maybe to rethink how we think is necessary.

Originally organic production was based on this philosophy, the health of the soil lead to health of the plant lead to health of the eater. That one created health by good management rather than treated or preventing disease with good medicine. Good management has to include good feeding, and good feeding does not just mean feeding organic stuff, it means feeding appropriate stuff. There is a school of thought which understands "bugs" as mutating. That rather than "catching" a bug, changes in the surroundings change a bug already there. So that soil or body microbes, benign in optimum conditions, become pathogenic when their environment is changed. The change results from "stress", overused word, and that can be inappropriate feed. We know this very well really because the acidity caused by feeding concentrates to dairy cattle is well documented. But the change to the microbes is not. Indeed we have no idea how many microbes exist, or what they do, should or can look like. Most of them we have to kill to look at all. It has been observed that feeding hay or grass to cattle pre-slaughter removes the pathogenic EColi, as does feeding a probiotic. I have taken this extract from the website of Sheepdrove farm because it gives you access to some original thought, which may help the thought process.

Thinking about what causes health. Extracts from two websites.

1) ***Sheepdrove Farm.*** *This article is an edited version of the Independent article on Sunday.*

"Can positive health apply to bird flu? asks Robin Maynard of the Soil Association.The positive health principle, developed by organic pioneer, Sir Albert Howard, (1873-1947) is as relevant as ever. An enormous influence on the Soil Association's foundation in 1946, Howard established that animals reared organically are resistant to disease.

Informed greatly by the Indian peasant farmers he'd been sent out to train, the colonial agriculturist came to believe that the ability of plants to resist pests and disease was directly linked to the health and fertility of the soil in which they grew. These in turn ensured the vitality of the animals that consumed the crop plants.

Howard deliberately exposed his cattle to neighbouring herds infected with foot and mouth disease and scientifically recorded the outcome. The results are compelling: between 1910 and 1936, out of a total of 58 cattle reared on organically-managed land and allowed to come into contact with infected animals, only a few mild cases of foot and mouth occurred. "I have myself seen my oxen rubbing noses with foot-and-mouth cases. Nothing happened. The healthy, well-fed animal reacted towards this disease exactly as improved and properly cultivated crops did to insects and fungi – no infection occurred", wrote Sir Albert Howard in *An Agricultural Testament* (1940).

This positive health principle is the basis of organic standards. These establish key strategies for achieving positive health in livestock: healthy nutrition linked to good soil fertility with skilled husbandry, which minimises stress and most closely meets the natural behaviour of the animals, as well as good breeding to select robust, disease-resistant stock.

http://www.sheepdrove.com/news_archive.asp?news_id=83&strand_id=1

2) from The Journal of the American Society of Animal Science.

Preharvest control of *Escherichia coli* O157 in cattle J. T. LeJeune [1*] A. N. Wetzel [1]

Bovine manure is an important source of *Escherichia coli* O157 contamination of the environment and foods; therefore, effective interventions targeted at reducing the prevalence and magnitude of fecal *E. coli* O157 excretion by live cattle (preharvest) are desired. Preharvest intervention methods can be grouped into three categories: 1) exposure reduction strategies; 2) exclusion strategies, and 3) direct anti-pathogen strategies. Exposure reduction involves environmental management targeted at reducing bovine exposure to *E. coli* O157 through biosecurity and environmental niche management such as feed and drinking water hygiene, reduced exposure to insects or wildlife, and the cleanliness of the bedding, or pen floor. In the category of exclusion, we group vaccination and dietary modifications such as selection of specific feed components, feeding of prebiotics and/or probiotics, and supplementation with competitive exclusion cultures-to limit proliferation of *E. coli* O157 in or on exposed animals. Direct anti-pathogen strategies include treatment with sodium chlorate, antibiotics, bacteriophages, in addition to washing of animals before slaughter. Presently, only one preharvest control for *E. coli* O157 in cattle has been effective and gained widespread adoption (i.e., the feeding probiotic *Lactobacillus acidophilus*). More research into the effectiveness of parallel and simultaneous application of one or more preharvest control strategies, as well as the identification of new preharvest control methods, may provide practical means to substantially reduce the incidence of human *E. coli* O157-related illness by intervening at the farm level.

http://jas.fass.org/cgi/content/abstract/jas.2006-612v1