



The Tipping Point

The Tipping Point is the title of a book written by *New York Times* journalist, Malcolm Gladwell. Gladwell became intrigued by sudden changes in things, which had seemingly gone along for years on an even keel. In his book he presents numerous examples ranging from diseases, businesses, fashions and politics to mention a few, obviously seeking to find “The Tipping Point”, or more correctly, what circumstances or conditions precipitated the explosion, either positive or negative.

Gladwell has certainly done extensive research into many such occurrences, producing a fascinating book that leaves the reader looking quite differently at the world around him.

What’s the connection here to dairy nutrition? Everything! Dairying is a multifaceted orchestration, a combination of many influences, which when in harmony produces dramatic results. Synergy occurs when two or more ingredients work together to produce a result far in excess of their sum, either positive or negative.

This describes exactly what occurred on many dairies in Western Victoria last week. (This article was prepared in mid July.) We experienced a widespread outbreak of salmonella, even on farms that were not aware they even had salmonella on farm, by virtue of not having had it diagnosed in the past. What was the Tipping Point?

How can so many cows on so many farms all come down with salmonella in the space of a week or two? And even more fascinating, I expect the problem will disappear as fast as it came, while we’re still scratching our heads.

So I embarked on a “Gladwellian” style investigation on about six farms over a two- week period trying to establish The Tipping Point. Most advances in our knowledge are result of a disaster. Rarely do we grow in peace and prosperity, although it’s a nice place to be.

Fact 1: We have a major bacteria load on pasture at present, due I assume to prevailing weather conditions. Spring and autumn conditions are very conducive to bacterial growth. I might add here that although salmonella infection has been diagnosed, doubtless other bacteria are present ‘en mass’ too.

Fact 2: These bacteria are always present as part of the ecology, so why so many affected cows this week? There has to be more influences affecting cow’s immunity to have such an impact.

Fact 3: Stress. Now we are getting into management issues. The things we can control, and should be. Stress in its many guises reduces cow's immunity to cope with a bacterial intake as was obviously present this week.

The following list of stress factors was probably present on all farms to some degree. In a few cases there was clearly a dominance of one stress factor, which tipped cows over.

Firstly, many farms have applied nitrogen either as urea or in a complete mix with the recent and welcome rains. High nitrate levels in pasture were obvious by the dark colour of manure, some almost black. Smudging manure pats with my boot to examine contents also revealed milled grain in varying degrees on different farms. At best, an indicator of rapid passage of feed through the digestive tract with inherent poor feed conversion, but more so, indicative of acidosis.

Secondly, and associated with the above, low fibre levels in rations. No hay or very little. The same is the result, acidosis and poor digestion.

Third, transition management issues even in herds that were lead feeding. It is imperative that lead feed contains 50% of all post calving grain mix additives, especially Rumensin and Tylan. Both are rumen modifiers and require time to manipulate microflora numbers, a shock dose of either of these products, as wonderful as they are, in the dairy after calving is enough to bowl over a cow.

Fourthly, direct nutrition issues. High negative energy balance with its inherent excessive body fat mobilization predisposes our cow to liver problems and ketosis, both clinical and the real thief, sub-clinical ketosis. Excessive grain to forage ratios also lead to acidosis. Low dry matter intake inadequate to meet nutrition needs for the level of milk production. Most of these are found clubbed together, each increasing the other to the detriment of cow health.

In summary; the genetics of the cows we milk today demand ration monitoring not just to optimise production and feed efficiency, but to keep them standing! Vaccination is certainly a consideration in regard to salmonella, but needs to be discussed with your veterinarian.