

Decision Making for Dry Cow Therapy

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Dry cow therapy was introduced in the late 1960s as part of the original 'Five Point Plan to help reduce the level of contagious mastitis. At this time, the UK average somatic cell count was close to 600,000/ml and the mastitis rate was 121 cases per 100 cows per year. The NIRD Five Point Plan was designed to reduce the level of contagious mastitis, improve milk quality and animal welfare by reducing the level of clinical mastitis. The success of this and other mastitis control measures adopted over the last 30 years are very evident where the 2000 UK average herd cell count is 165,000/ml and the mastitis rate has decreased to approximately 45 cases per 100 cows per year.

Dry cow therapy has two principal aims; firstly to reduce the level of sub-clinical infection in the udder at the end of lactation and secondly, to help prevent the establishment of new infections during the dry period, in particular summer mastitis. Up until recently, the general recommendation has been to use blanket dry cow therapy. There is now pressure from the WHO (World Health Organisation) to reduce the prophylactic antibiotics in food producing animals and dry cow therapy would be included in this category. In the future it is likely that dairy companies and consumers will require a justification for the use of dry cow therapy in herds and individual animals.

New Zealand has been using selective dry cow therapy for many years. Like the UK, the maximum legal somatic cell count level is 400,000 with penalties being imposed when cell counts exceed 300,000. New Zealand uses the SAMM plan (Seasonal Approach to Managing Mastitis) and this approach to mastitis control has resulted in a national average cell count of 178,000.

Selective dry cow therapy is used on the following;

- Animals with clinical mastitis during lactation

- Cows with a cell count over 150,000, or heifers over 120,000, at the last recoding during lactation.

Unlike the UK, the New Zealand dairy farmers have an alternative to dry cow therapy. Animals which do not receive dry cow therapy are treated with a wax sealant which helps to prevent the establishment of new infections during the dry period. This teat sealant is infused through the teat canal at the end of lactation and acts as a physical barrier helping to prevent new infections becoming established during the dry period.

A considerable amount of research has been carried out on these wax teat sealants in New Zealand. Two large scale studies have been carried out by Woolford (1998 & 1999) comparing No dry cow therapy (NC), dry cow therapy (PC), a teat sealant (TS) and a combination of dry cow therapy and teat sealant (TS+Ab). The results of these trials are shown in Figure 1. These show clearly that if you do not use dry cow therapy or a teat sealant the new infection rate during the dry period and at calving is significantly higher. This also shows that in low cell count cows, there is little difference between using a teat seal and conventional dry cow therapy.

Part of the reason for this is that a considerable number of teats have open teat canals during the dry period. Most people assume that all cows have a firm teat seal which forms a few days after drying off and persists until closely before calving. Williamson (1995) shows that 20 days after drying off almost 40% of teats are still open, see Figure 2. In the UK the average dry period is under 60 days and yet at this time 5% of teats have remained open and therefore prone to infection.

The UK situation is different as we have many dairy farmers who are penalised if the herd cell count exceeds 150,000/ml, and summer mastitis is a problem in many areas. Also about one half of dairy herds in the UK do not record individual cow cell counts. It would not be considered acceptable to stop the use of dry cow therapy if there was going to be an increased risk of mastitis in untreated cows on welfare grounds.

The New Zealand approach has shown that herds are able to achieve a low somatic cell count without the use of blanket dry cow therapy and so there is potential to re-evaluate its use in the UK. This would become more acceptable were there an equivalent teat sealant

available in the UK. As this is not available, herds which opt for selective dry cow therapy or do not use dry cow therapy, such as organic herds, must concentrate on maintaining a low risk dry cow environment and checking all dry cows regularly during the dry period for signs of infection so that prompt treatment can be started.

Hovi (2000) has shown the difference in the new infection rate during the dry period comparing the conventional to the organic dairy herd in the UK. This is shown in Figure 3. Herds which use blanket dry cow therapy in the UK have one third of the new infection rate compared to organic herds (9.2 cases per 100 cows vs 28.9 for the organic herd)

What we can learn is that we need to have individual cow cell counts before we can decide whether to use selective or blanket dry cow therapy. We should have bacteriological data so we have an epidemiological picture for individual herds. This, in conjunction clinical mastitis records and seasonal risk factors during the dry period will allow the veterinary surgeon to make informed decisions. It is likely in the future that a decision to carry out blanket dry cow therapy will need to be justified on scientific grounds rather than relying on the fact that this has been a standard management practice in previous years.

It is essential that farmers continue to achieve the maximum milk price and therefore they must be able to maintain low herd somatic cell counts. If the use of selective dry cow therapy in individual herds would hinder this or increase the likelihood of problems from summer mastitis and animal welfare problems, then its use would be contra-indicated. However, it is important that the use of dry cow therapy is reviewed and assessed on an individual herd basis.