Feeding waste/antibiotic milk to replacement heifer calves

To salvage some value from the unsaleable milk (waste/mastitic/antibiotic milk) from cows treated with antibiotics it has been common practice by some farmers to feed this milk to replacement dairy stock. With the increased use of antibiotics, the risk of these antibiotics entering the food chain and the potential for antibiotic resistance to develop questions are being asked about the safety of feeding this milk. There are already bans on using antibiotic milk as a feed for bobby calves. In response to a lively discussion on Dairwn this article has been compiled to provide a summary of the issues and factors to consider when deciding whether to feed waste/antibiotic milk to replacement calves.

Dairy InSight in conjunction with the Dairy Exporter have recently published ‘The Great Farming Guide to Calf Rearing’. This publication provides a good starting point for all aspects relating to Calf Rearing. The recommendation in this publication with regards antibiotic milk is:

TAKE CARE WITH ANTIBIOTIC MILK
Antibiotic milk should never be fed to young calves because it interferes with gut microbes. If well diluted with normal milk, it is probably OK for older calves.

Evidence shows feeding calves antibiotic milk may contribute to antibiotic resistance – so don’t use milk from the day the cow is treated.

- Don’t feed to bobby calves as residues are found in the liver, kidneys, muscle and blood
- If a lot of antibiotic milk is fed it may reduce growth rates
- If the weather is mild it may inhibit natural fermentation of milk which would normally degrade the antibiotic and make the milk acceptable as feed
- High numbers of bacteria in milk may present a disease risk

Dr Penny Back from Dexcel, who was involved in writing the Great Farming Guide, had the following concerns with feeding antibiotic milk:

- Calves getting gut aches and scours from consuming antibiotic milk which is likely to contain a high number of bacteria
- Lower growth rates if too much antibiotic milk is consumed
- The potential for the development of antibiotic resistance
- The potential for antibiotic milk to get into colostrum storage vats

If the antibiotic milk is stored (fermented) for 4-5 days some of the antibiotic will be degraded during the fermentation process.

The web and scientific publications also provide information on the pros and cons of feeding antibiotic milk to calves. With regards antibiotic milk and heifer mastitis there were two articles that mention this practice but neither provide reference to any research that has been undertaken to support the comments that consumption of antibiotic milk by replacement calves increases the incidence of mastitis in heifers. The first (????) acknowledged that “Mastitic milk is an area of controversy in relation to safety and the “seeding” of mastitis causing organisms, especially relative to Staph aureus’. The recommendation from this paper was that mastitic milk should only be fed if it had the
appearance of normal milk ie no yellow material, clots or blood. The conclusion was that antibiotic milk was the least preferred form of supplementation for calves and too much of this milk could slow growth rates.

A second publication (???) stated that mastitic milk should not be fed to calves younger than 4 days of age and that heifer calves fed mastitic milk must be housed individually to prevent suckling of each other as the bacteria can survive in the mouth of calves for more than 24 hours and could be transferred to the developing mammary tissue during the suckling process.

Research in the 1970’s and 1980’s (Kesler, 1981; Otterby & Linn, 1981) reported no long-term effects on health, production or the incidence of Staph Aureus infections in first lactation heifers previously fed waste milk as calves. Also, short-term studies in the 1990’s have shown no obvious increase in antibiotic resistance of intestinal bacteria in calves fed antibiotic milk.

Another risk of feeding waste milk is the risk for spread of infectious diseases that may be transmitted in milk either by direct shedding in the mammary gland or from post-harvest contamination. Such diseases include Johne’s disease, Salmonella, Campylobacter, Mycobacterium bovis and E Coli (???). A survey of waste milk from 12 California dairies (????) reported that this milk contained significantly higher concentrations of bacteria than milk replacer or bulk-tank milk.

Clearly there are some potential risks associated with feeding waste/mastitic/antibiotic milk to replacement heifers

1. Development of antibiotic resistance
2. Lower growth rates
3. Scours/stomach upsets
4. Spread of infectious diseases
5. Inadvertently fed to bobby calves
6. Mixed with stored colostrum

If you do decide to utilise this milk the risks can be minimised by

1. Not feeding to calves less than 4 days old
2. Diluting the antibiotic milk with normal milk
3. Not using milk from the cow the day it is treated
4. Not using milk that has clots, blood, pus
5. Storing milk for 4-5 days before use to allow the breakdown of some of the antibiotics as the milk ferments
6. Having separate and well marked storage containers for mastitic milk

**References**
