



## Feeding waste milk to calves and antibiotic resistance

### The Problem

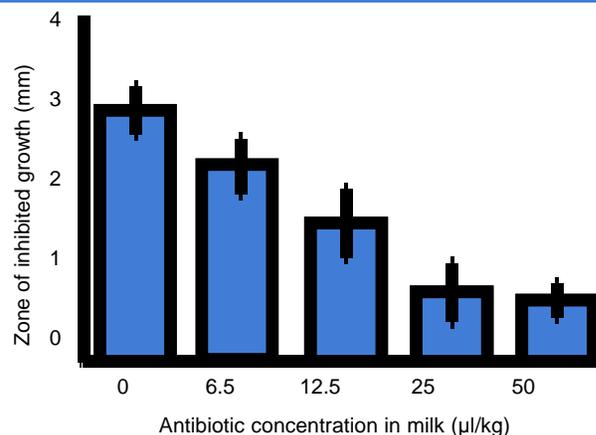
Milk from cows treated with antibiotics cannot be sold for human consumption while residues from these drugs are present in the milk. Feeding 'waste' milk can be nutritious for calves and economical for farmers. However, feeding waste milk may contribute to antibiotic resistance in dairy calves.



Petri dish with bacteria (light area) growing around disks containing antibiotics. The most effective antibiotics inhibit bacterial growth (dark area) around the disks.

### Effects of different feeding practices

Resistance (measured as a zone of inhibited growth) of gut bacteria was monitored in calves fed waste milk varying in antibiotic concentrations (0, 6, 12.5, 25, and 50  $\mu\text{l} / \text{kg}$ ). These concentrations reflect those found in treated milk.



Feeding waste milk with antibiotics, especially with higher concentrations like those on days cows are treated (12.5 - 50  $\mu\text{l} / \text{kg}$ ), resulted in increased resistance. Gut bacteria from these calves were able to grow close to the edge of the antibiotic disks.

### What this means

Avoid using milk from cows on the days they are treated with antibiotics. Pasteurizing milk fed to calves is also recommended as this improved milk quality and calf health. Pasteurization can also help reduce antibiotic resistance in calves.

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