

## The Milk Letdown Reflex

At milking time, approximately 60% of the milk in the mammary gland is found in the alveoli, 20% in the milk collection ducts and 20% in the gland cistern. When the cow is stimulated, the hormone *oxytocin* is released by the brain into the bloodstream. When it reaches the mammary gland, oxytocin causes the muscular tissue surrounding the alveoli to contract, squeezing their milk out into the milk collection ducts, the gland cistern and the teat cistern.

The milk 'letdown' effect of oxytocin begins 20 to 60 seconds after initial stimulation and normally lasts for 6 to 8 minutes. Although a second pulse of

oxytocin may be released, it will be less effective than the first.

Stimuli which initiate the milk letdown reflex and oxytocin release include:

- physical contact with the mammary gland, from either a suckling calf or a milker cleaning the teats;
- the sight of a calf;
- the sound of the milking machine.

Inadequate physical stimulation of the teats, delayed attachment of teat cups or faulty equipment may fail to take full advantage of the letdown reflex. Pain, fear or other stress may inhibit letdown through the release of adrenaline which restricts mammary blood flow and blocks the action of oxytocin.

source: Milking and Milking Equipment, WDSI, p 4.