



Anne Dulin, microbiologist, places the loop in the catheter for insertion into the mammary gland.

## A new loop in mastitis prevention

BELTSVILLE, Md. — A small plastic loop inserted into each teat of a cow's udder may prevent mastitis, says Max Paape, a SEA animal scientist.

At a rate to producers of approximately \$1 billion per year, mastitis is the most costly disease in dairy cattle.

William Kortum, California veterinarian, developed the loops. Kortum also developed a polyethylene IUD for the bovine uterus.

The loops are made from a polyethylene similar to that used to manufacture plastic milk containers. A 4 1/2-inch piece of the polyethylene is inserted into the teat through a catheter.

Once inside the teat, the

polyethylene resumes the shape of the loop.

The loop works by stimulating the animal's natural disease-fighting mechanism. The loop causes a mild irritation and in response the number of leucocytes in the affected area increases. Leucocytes, or white blood cells, destroy the bacteria that causes mastitis.

Normally, it takes about 24 hours for the leucocytes to build up to a point where they can destroy the invading bacteria.

By this time, the bacteria have multiplied to such an extent that the infection may already have become established.

Having a leucocytes already present, in response

to the loop, can prevent this buildup. Also, the loop "programs" the udder to respond faster in the case of infection.

In tests at the Beltsville Agricultural Research Center, Paape inserted the plastic loops into two quarters of the udders of six cows. (The loops have remained in place for over 1 year).

All quarters were then infused with toxins produced by Escherichia coli. E. coli cause a large number of mastitis infections.

The teats with loops responded faster to the toxin and the leucocyte count rapidly increased in these quarters.

There were four times as many leucocytes in teats

containing the loops as there were in teats without the loops.

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