



Wisconsin Veterinary
Diagnostic Laboratory
UNIVERSITY OF WISCONSIN-MADISON

Prototheca species

Background

Prototheca sp are colorless algae that are found in a variety of environmental sources and can cause chronic mastitis in cows. Currently, there is no effective treatment for protothecal mastitis, resulting in significant economic losses for producers.

Source and Transmission

Prototheca sp are widespread in the environment of dairy cows, whether or not there are cows infected with the organism. *Prototheca* are especially associated with wet areas containing decaying matter and plant matter, such as manure, water tanks, water runoff from silage, milking parlor wash water, teat dip containers, milking machine liners, and feed troughs. Infections occur when the teat end is exposed to very high numbers of the environmental algae during the intervals between milkings. Although spread during milking time is not considered significant, new infections can occur if poor milking techniques are being used to milk cows of which a high percentage are infected with *Prototheca*.

Disease

Most cases of protothecal mastitis are subclinical, where the milk is only slightly abnormal, being discolored and often watery with flakes and clots, while the cow exhibits no severe systemic signs such as off feed, depression, or fever. However, the infections persist and progressively decrease milk production. Milk infected with *Prototheca* can have elevated somatic cell counts (SCC) that may exceed 1,000,000 cells/ml.

Treatment

There is no treatment for protothecal mastitis. Antibiotic treatment is not effective. Affected cows should be identified and milked last until they can be culled.

Prevention and Control

The best way to control protothecal mastitis is early detection and culling of all positive cows immediately to decrease the risk of spread throughout the herd. Bulk tank milk should be monitored routinely for presence of *Prototheca* along with other contagious organisms, and milk from clinical mastitis cases should be submitted to the lab for pathogen identification. Optimal milking and hygiene practices can prevent transmission of organisms.

References

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