



## Reference guide for mastitis-causing bacteria

C. S. Petersson-Wolfe<sup>1</sup> and M. Arnold<sup>2</sup>

<sup>1</sup>Virginia Tech Mastitis & Immunology Laboratory & <sup>2</sup>University of Kentucky

(Information obtained from NMC Laboratory Handbook on Bovine Mastitis and veterinary consultation for treatment recommendations)

Classification	Bacteria	Contagious or Environmental	Source	Spread	Control	Treatment*
Staphylococcus spp.	<i>Staph. aureus</i>	Contagious	Infected udders, hands of milkers	Milking time	Post dip, DCT <sup>1</sup> , segregation and cull if necessary	Early lactation – 8 days pirlimycin, do not treat chronic infections
	Coagulase (-) staph. & <i>S. hyicus</i>	Neither	Skin flora & occasionally environment	Infect teat canal from skin sources	Post dip, DCT	Treat clinical cases (broad spectrum), DCT
Streptococcus spp. and Enterococcus spp.	<i>Strep. agalactiae</i>	Contagious	Infected udders	Milking time	Milking time hygiene, post dip, DCT	Label recommendations for beta lactam antibiotics
	<i>Strep. dysgalactiae</i>	Contagious and Environmental	Infected udders and environment	Milking time & environmental contact	Milking time hygiene, pre & post dip, DCT, teat seal	Label recommendations for broad spectrum antibiotics
	<i>Strep. uberis</i>	Environmental	Environment – early dry period	New IMI <sup>2</sup> during early dry period	Milking time hygiene, pre & post dip, DCT, teat seal	IMM <sup>3</sup> Therapy or 4-5d penicillin systemically (5cc/100lbs body weight)** or 5-8 days pirlimycin
	Environmental strep & Enterococcus spp.	Environmental	Environment	Environmental contact	Milking time hygiene, pre & post dip, DCT, teat seal	
Coliform	<i>Escherichia coli</i>	Environmental	Bedding, manure, soil	Environmental contact	Cows clean & dry, use of sand bedding, pre dip, a J5 vaccine	Do not treat local/mild cases. Systemic cases – 2-3L hypertonic saline IV, followed by oral fluid therapy, NSAID <sup>***</sup> , injectable antibiotics and IMM ceftiofur
	<i>Klebsiella</i> spp.	Environmental	Organic bedding	Environmental contact	Avoid sawdust & recycled manure, pre dip, J5 vaccine	
	<i>Enterobacter</i> spp.	Environmental	Bedding, manure, soil	Environmental contact	Cows clean & dry, use of sand bedding, pre dip, a J5 vaccine	
	<i>Serratia</i> spp.	Environmental	Soil and plants	Environmental contact	Cows clean & dry, pre dip (no chlorhexidine products)	Do not respond to IMM treatment
	<i>Pseudomonas</i> spp.	Environmental	Water & wet bedding	Environmental contact	No water use in parlor, no cooling ponds, sand bedding, a J5 vaccine	
	<i>Proteus</i> spp.	Environmental	Bedding, feed & water	Environmental contact	Not much known, use of sand bedding, a J5 vaccine	
	<i>Pasteurella</i> spp.	Probably contagious	Upper respiratory tract of mammals and birds	Unknown – likely cow to cow	Prevent teat injuries, remove affected cows from herd	
Other	Yeast & mold	Environmental	Soil, plants, water	Dirty infusions	Aseptic infusions	No treatment
	<i>Corynebacterium bovis</i> & other coryneforms	Contagious	Infected udders	Cow to cow	Post dip	Treat clinical cases and DCT
	Prototheca	Environmental	Soil, plants, water	Dirty infusions, infected udders	Aseptic infusions, eliminate infected cow	No treatment – cull cow
	<i>Bacillus</i> spp.	Environmental	Soil, water, air	Dirty infusions	Aseptic infusions	Broad spectrum antibiotic
	<i>Trueperella pyogenes</i>	Environmental	Teat injuries	Flies	Fly control	Kill affected quarter or remove from herd
	<i>Mycoplasma</i> spp.	Contagious	Infected udders	Milking time	Milking time hygiene, segregation and culling	Remove from the herd

**\*These are general treatment recommendations – actual recommendations may vary from herd to herd. Please consult your veterinarian.**

\*\*Extra label usage; Please consult your veterinarian before starting this protocol and for appropriate milk and meat withdrawal times

\*\*\*Nonsteroidal anti-inflammatory drugs

<sup>1</sup> – DCT, dry cow therapy; <sup>2</sup> – IMI, intramammary infection; <sup>3</sup> – IMM, intramammary