CAUTION

KEEP OUT OF REACH OF CHILDREN
READ SAFETY DIRECTIONS
BEFORE OPENING OR USING

Infopest ✓ Verified

APPROVED LABEL

MICROTECH 7000

General Purpose Disinfectant



ACTIVE CONSTITUENTS:
54 g/L BENZALKONIUM CHLORIDE
4 g/L POLY (HEXAMETHYLENE BIGUANIDE) HYDROCHLORIDE

For further information please refer to the product profile or MSDS.

5 LITRE

Comparison of current disinfectants and the effects of organic matter

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Disinfectant trial

"Evaluation of antimicrobial efficacy of polyhexamethylene biguanide, quaternary ammonium and glutaraldehyde disinfectants, against a multiple antibiotic resistant *Escherichia coli* in the presence and absence of 10% organic matter."

Why trial?

- Multi-resistant micro-organisms – due to extensive use of antibiotics
- Examine effectiveness of disinfectants
- OH&S perspective: safety of the product (glutaraldehyde is toxic and irritant to eyes, skin and respiratory tract, PHMB safe)
- Cost effectiveness of disinfectants: cost per meter of application

Previous work

- Trial performed by DPI Bendigo/QAF
- Disinfectants: polyhexamethylene biguanide and glutaraldehyde
- Dilutions 1:150 and 1:500
  - *E.coli* suspension added
  - 0.5/2/10 min incubation - culture media
  - Number of colonies counted after overnight incubation

Results:

Disinfectant	Dilution rate	0.5 minutes	2 minutes	10 minutes
PHMB	1:500	Too numerous	1 colony	No growth
Glutaraldehyde	1:500	Too numerous	Too numerous	1 colony
PHMB	1:150	121	No growth	No growth
Glutaraldehyde	1:150	Too numerous	No growth	No growth

DPI Bendigo/QAF, 2007

Evaluation trial (does organic matter affect effectiveness?)

- Antimicrobial activity
  - Polyhexamthylene biguanide/quaternary ammonium/glutaraldehyde disinfectants
  - Multi-antibiotic resistant *E.coli* serotype 0:141
  - Absence and presence of 10% organic matter (50% milk = 10% DM)
- Antimicrobial activity = growth of *E.coli* on culture media

Disinfectants in this trial:

- Disinfectant 1: 10% polyhexamethylene biguanide (PHMB) and 30% quaternary ammonium compound (QAC).
- Disinfectant 2: 15% glutaraldehyde and 10% quaternary ammonium compound.
- Disinfectant 3: 2.5% quaternary ammonium compound.

Methods and Materials

- Trial in 2007
- Four Dilutions:
  - 1:50
  - 1:150
  - 1:300
  - 1:500
- Broth: 10^7 Colony Forming Units *E.coli* 0:141/ml milk (10^7 CFU/ml)
- Presence and absence of organic matter.
- Two negative controls: water and 50% water/50% milk
- Two positive controls
- 45 min incubation; aerobic culture on sheep blood agar.

Results

Product	Dilution	45 minutes
QAC	1:50	No growth
	1:150; 1:300; 1:500	Growth
Glutaraldehyde	1:50; 1:150; 1:300; 1:500	No growth
Glutaraldehyde in 10% Organic Matter	1:50; 1:150; 1:300; 1:500	No growth
PHMB	1:50; 1:150; 1:300; 1:500	No growth
PHMB 10% Organic Matter	1:50	No growth
	1:150; 1:300; 1:500	Growth
Negative Control	N/A	No growth
Negative Control 10% Organic Matter	N/A	No growth
Positive Control	N/A	Growth
Positive Control 10% Organic Matter	N/A	Growth

Re-evaluation trial with longer incubation

- May 2008.
- Only 10% organic matter.
- Disinfectants: glutaraldehyde and PHMB.
- 6 hours vs 4 days, aerobic culture on sheep blood agar.

- Same method
- Different strain of *E.coli* serotype 0:141.

Results

Product	Dilution	6 hours	4 days
Glutaraldehyde in 10% Organic Matter	1:50	No growth	No growth
	1:150	No growth	No growth
	1:300	Growth	Growth
	1:500	Growth	Growth
PHMB 10% Organic Matter	1:50	Growth	No growth
	1:150	Growth	No growth
	1:300	Growth	No growth
	1:500	Growth	Growth
Negative Control 10% Organic Matter	N/A	No growth	No growth
Positive Control 10% Organic Matter	N/A	Growth	Growth

Discussion

- PHMB disinfectants: recommended dilution rate 1:500
  - Absence of organic matter: effective
  - Presence of organic matter: different results - 1:500 not effective, but after 4 days, 1:300 effective.
- Glutaraldehyde disinfectants recommended dilution rate 1:150
  - Absence of organic matter: effective
  - Presence of organic matter: effective

Applications

- Disinfection process includes and requires removal of organic soiling prior to disinfection
- PHMB disinfectants
  - SAFE - NON-IRRITANT
  - Potential applications: washing sows prior to farrowing shed; boar stud disinfection; wound disinfection; instrument disinfection.

Cost Comparison

Product	Dilution rate	Cost/100 m^2
Terminator (glutaraldehyde/QAC)	1:150	$17.50
Microtech (PHMB/QAC)	1:300	$9.88
Microtech (PHMB/QAC)	1:500	$5.93
Glutacide (glutaraldehyde/QAC)	1:150	$11.60


So clean it shines
MICROTECH
7000
Safer
Cheaper
Australian Made
Microtech 7000, the safe, cost effective Australian made disinfectant especially made for Australian conditions.
Microtech 7000 is the only farm disinfectant to be developed and tested in Australia for Australian conditions. That's why Australian primary producers can rely on its quality formulation and safety standards for highly effective infection control on Australian farms. What's more, it's the most cost effective disinfectant on the market, making it cheaper to use and ultimately better for your profit margin. Microtech 7000. Why use any other disinfectant?
Country Vet

THANK YOU