Desinfection of farms

a useful risk mitigating measure

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Current status

No standardized protocol for desinfection of contaminated farms

Farmers use mostly water (and soap) if anything

Q-fever is quite persistent, methods applied are inappropriate

Can desinfection at contaminated farms be an effective risk mitigating measure?

Requirements

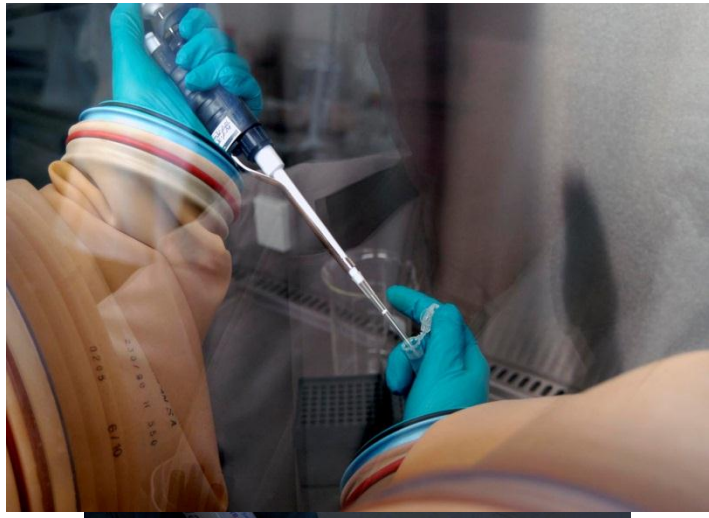
The desinfectant shall:

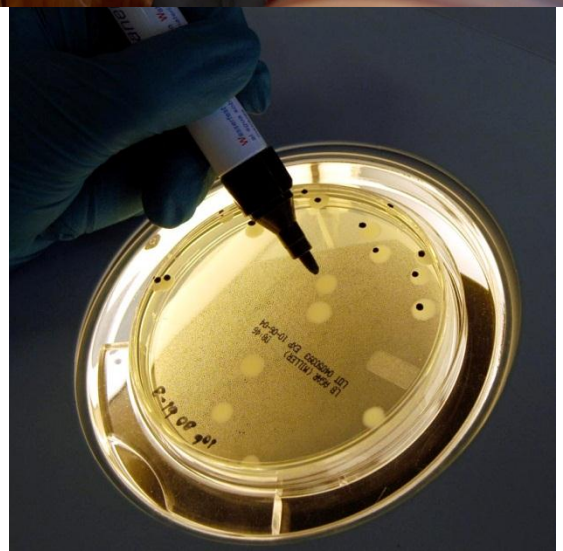
- not be toxic to environment and animals
- be approved by Dutch authorities
- shall give a log 6 reduction in operational experiments
- not drastically influence the working routine
- not require specialized teams

Outcome laboratory tests *in solution*

Desinfectant	Log reduction BG	NM	NL
• HP (D2)	log 5	log 7	log 5
• DCI (D3)	log 7	---	---
• HP (D5)	log 7	log 4	log 3
• HP (D6)	log 7	log 7	log 4

- active ingredient
  - HP = hydrogen peroxide
  - DCI = dichloroisocyanurate





Outcome laboratory test on surface

	Log reduction					
	Wood		Concrete		SS	Plastic
Desinfectant	BG	CB-NL	BG	CB-NL	BG	BG
•HP (D2)	log 2	log 2	log 0	log1	log1	log2
•DCI (D3)	---	---	---	---	---	---
•HP (D5)	log 7	log 1	log7	log2	log6	log7
•HP (D6)	log 7	log 2	log4	log2	log5	log7

--- to be determined

Outcome Operational decontamination on surface

D5 wet	Horizontal high	Horizontal low	Vertical high	Vertical low	ceiling
Wood	1	>=6	4	4	1
Concrete	0	1	0	1	0
Stainless Steel	4	5	4	5	2

D5 dry	Horizontal high	Horizontal low	Vertical high	Vertical low	ceiling
Wood	>=5	>=5	>=5	5	4
Concrete	>=5	>5	>=5	>5	2
Stainless Steel	>=5	>=5	3	5	3

Conclusion: wet decontamination is less effective than expected, probably due to hydrophobic surfaces.
Dry decontamination looks more promising.

TNO innovation for life

Current investigations

- Determination of efficacy of desinfectant D3 on relevant surfaces (wood, concrete, steel) for CB NL strain

- Regular use of desinfectants is useful as risk mitigating measure
- Professional desinfectants are more appropriate than water
- Method of application of desinfectants is of great influence on result
- Desinfection after lamb season and at positive farms does not impose a large logistic burden
- The approach could be an example to mitigate other veterinary outbreaks

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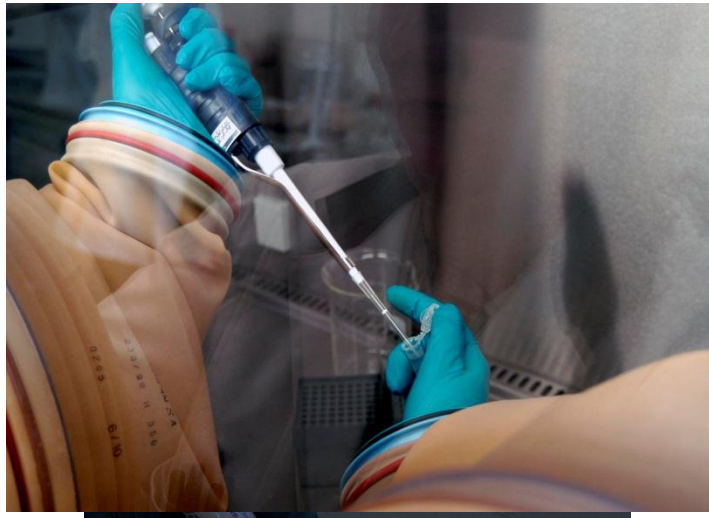

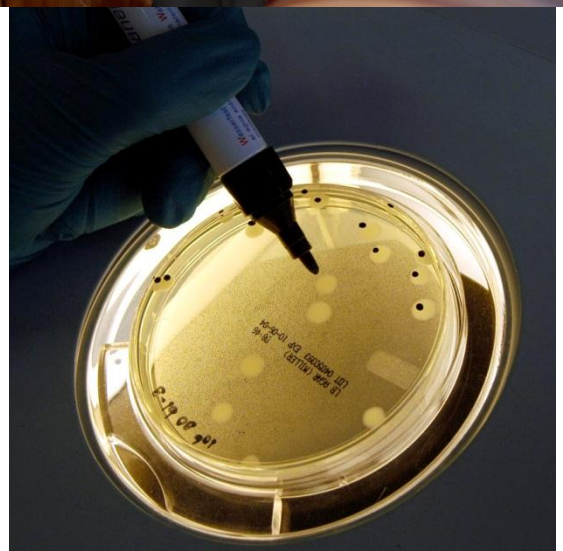

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