



Quorum sensing – the path of least persistence?

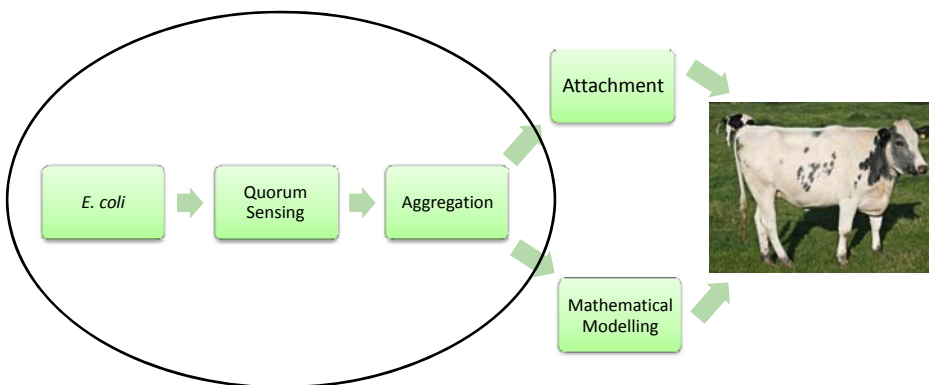


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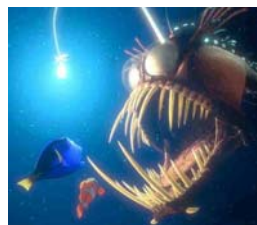


Research Focus



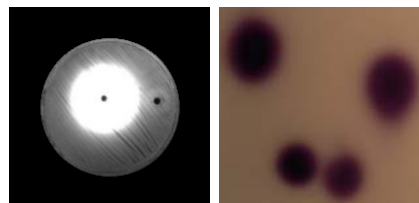
Quorum Sensing in Action

Vibrio spp. live in symbiosis with the deep sea angler fish and the bobtail squid



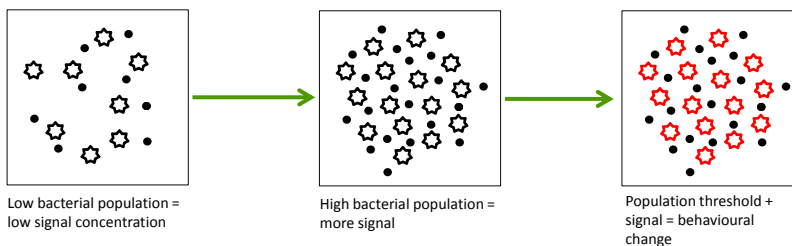
Using quorum sensing these bacteria produce light once the population density has been reached

We can replicate this in the laboratory



Quorum Sensing

Bacteria communicate with each other using chemical signals, initiating co-ordinated behavioural changes in a density-dependent manner



Once a population threshold has been reached a change occurs within the bacterial population triggering adaptation to the host environment, improving bacterial survival

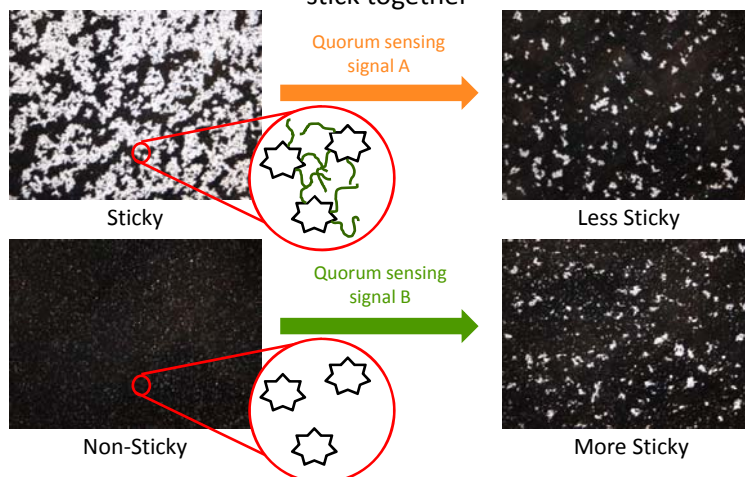


Quorum Sensing, *E. coli* and Bacterial Aggregation



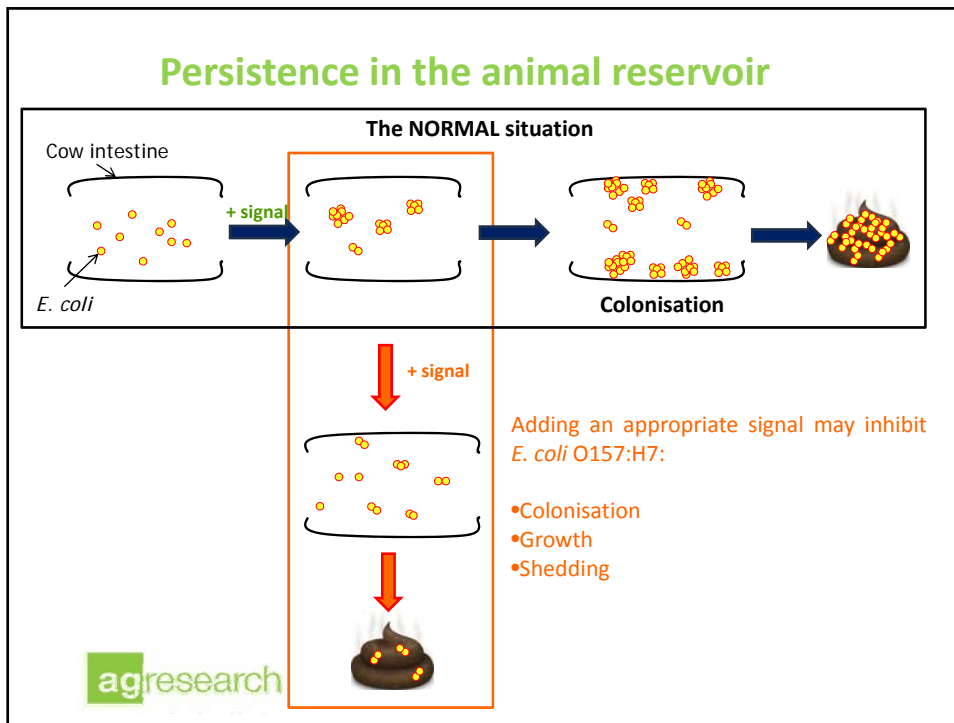
Quorum Sensing and *E. coli*

E. coli form aggregates by expressing adhesins, which cause them to stick together

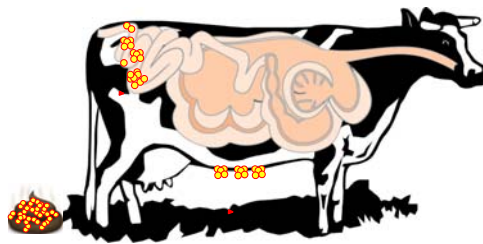


By adding different signals we can control these interactions

Persistence in the animal reservoir



Summary



Fewer *E. coli* O157:H7 in hindgut = Lower *E. coli* O157:H7 in faeces = Less *E. coli* O157:H7 on hide

So ...

Quorum sensing can be used to regulate the attachment process, therefore may be used to control *E. coli* O157:H7 in the animal reservoir

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