

Biosolids research at EPA: Linking science and policy

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Biosolids Workshop IV: Linking Industry and Research, 29 August 2017



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How do we make evidence-based policy?

What does this mean for biosolids?

What we have found so far?

Evidence-based policy

- An evidence base is needed to inform regulatory frameworks
- Both research and experience
- We use:
 - academic studies
 - industry and regulatory studies
 - our own research studies and regulatory experiences.



An anaerobic digester photographed by the U.S. Department of Agriculture. Sourced via Creative Commons at <<https://www.flickr.com/photos/usdagov/6350736438/>>

Evidence-based policy

- Policy = Risk/protection
- Specific considerations:
 - identify risk/issues
 - determine appropriate methods for mitigation
 - update policy.
- Requires consolidated evidence from multiple sources
- Economic and social consideration



Sewage treatment pond near Llandegwning, Great Britain. Sourced via Creative Commons at <http://www.geograph.org.uk/photo/209296>

Evidence-based policy – example

- Review of State Environment Protection Policy (Groundwaters of Victoria)
 - Segments of groundwater
 - Literature review
 - Analyse data
 - Update policy
 - Review process will include sustainability



Groundwater diving, Australia. Source: John Kotsifas

What does this mean for biosolids?



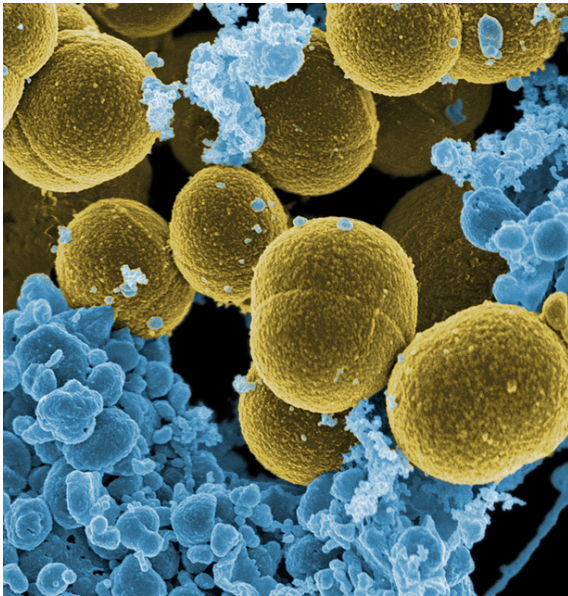
Source: Andrew Stawarz

- Old guidelines, new science?
- Establish an evidence base to inform review
- Particular interest in the risks with land application of biosolids
- Specific questions
 - What are the risks when applying to land?
 - Is the current regulatory approach sufficient?
 - Are further mitigation actions required?

What have we found so far?

- Literature review for environmental risks
 - Typical waste streams and treatment activities
 - Persistent organic pollutants and pathogens present
 - Persistent organics (e.g. PFOS) pose a high risk
 - Pathogens may negatively effect soil biology
 - Unclear how other chemicals affect soil and the environment more broadly

Where to from here?

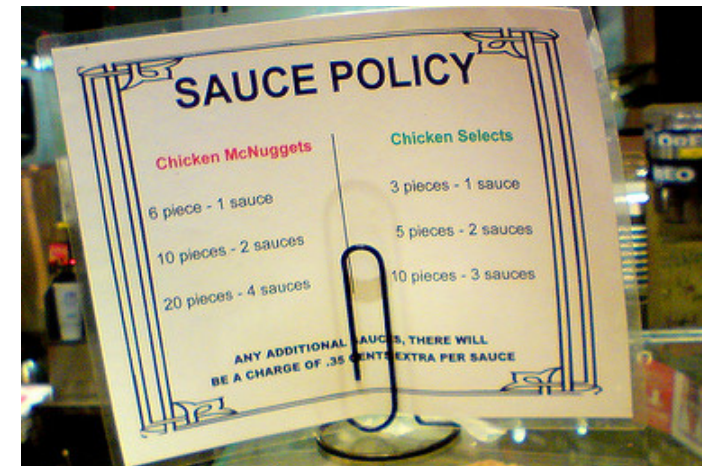


Source: NIAID

- Further research:
 - Literature review of human health risks
- Next steps:
 - Building the evidence base within EPA to support biosolids programs

Summary

- Evidence-based policy:
 - includes research and experience
 - considers risks, impacts and management
 - informs updates to relevant policy.
- Biosolids research on environment and human health risks



Source: Brian Brewer

Thank you

We would especially like to acknowledge Murrang Earth Sciences



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