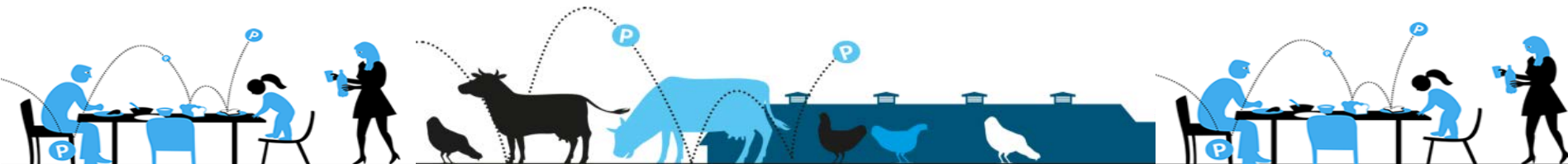




Why do sewage biosolids contaminants matter for the nutrient circular economy

Chris Thornton - European Sustainable Phosphorous Platform

- info@phosphorusplatform.eu
- www.phosphorusplatform.eu  [@phosphorusfacts](https://twitter.com/phosphorusfacts)

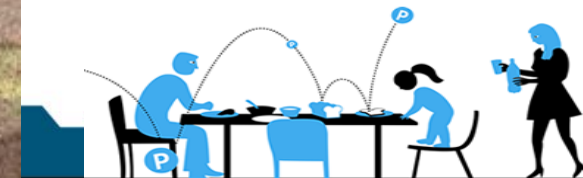
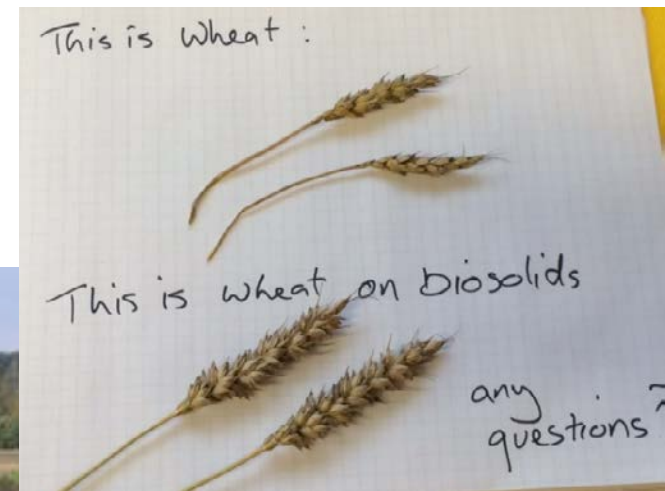


Circular economy for sewage nutrients

c. 40% of sewage biosolids currently spread to fields
= recycling of c. 115 000 tonnes P / year
source of economic nutrients (or income) for farmers

Pressures:

- urbanisation and distance
- organic contaminants
- consumer / supermarket attitudes



Circular economy for manures

*1 760 000 tonnes P in manure spread on land
Development of processing to organic fertilisers*

Some concerns similar to sewage

- antibiotics*
- pathogens*



Regulatory pressure

*Sewage biosolids “excluded” in
EU Fertilisers Regulation revision:
not accepted for EU digestates, composts
Switzerland banned land spreading
of sewage sludge in 2006*

*German proposed law 26/9/16 will ban sludge spreading
from wwtps > 500 000 pe = 2/3 of P in German sludge*



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Principales nouveautés dans l'ordonnance sur le traitement des déchets

L'ordonnance sur le traitement des déchets (OTD) est soumise à une révision totale. Voici en résumé les principales modifications :

- Des exigences sont formulées pour la valorisation de certains déchets, laquelle n'était pas encore réglementée dans le droit fédéral. Il s'agit notamment des biodéchets (y compris réglementation relative aux possibles installations de traitement) et des déchets riches en phosphore.
- Un plan d'élimination des déchets est exigé pour tout projet de construction. Le maître d'ouvrage est tenu de déterminer les déchets dangereux pour la santé et pour l'environnement (e. ex. amiante, déchets de chantier contenant des hydrocarbures

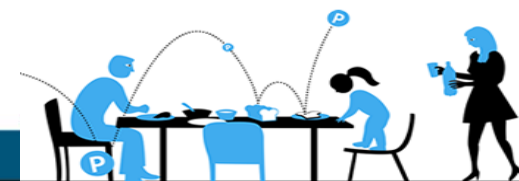


EUROPEAN COMMISSION

European Commission > DocsRoom > Document detail

Proposal for a Regulation on the making available on the market of CE marked fertilising products and amending Regulations (EC) No 1069/2009 and (EC) No 1107/2009

Document date: 17/03/2016 - Created by GROW.A.5.DIR - Publication date: 17/03/2016



Social and consumer pressure

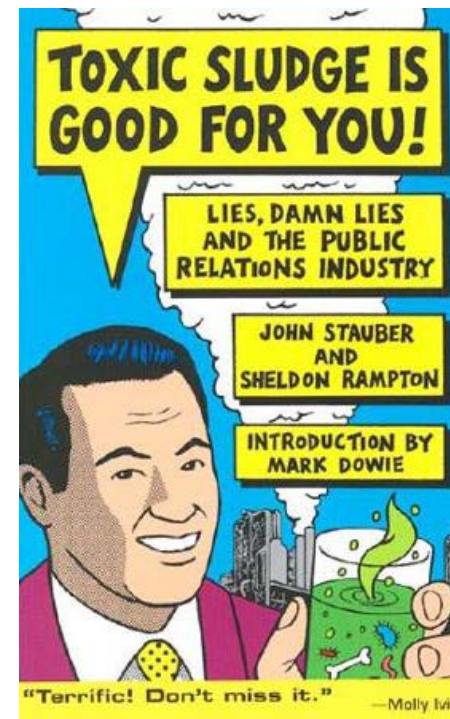
Global GAP food safety certification
excludes sewage biosolids

Pressure from consumers, supermarkets,
food industry ...



GLOBALG.A.P.

CROP BASED STANDARD 5.5.1; Control Point: Has the use of sewage sludge been banned on the farm?; *Compliance Criteria:* No human sewage sludge is used on the farm for the production of GLOBALG.A.P. registered crops. No N/A.; *Level:* Major Must



Under Pressure, Whole Foods Agrees to Stop Selling Produce Grown in Sewage Sludge

Submitted by Rebekah Wilce on January 15, 2014 - 7:21am



The Center for Media and Democracy (CMD) broke the story that the \$12.9 billion-a-year natural and organic foods retailer Whole Foods Market had a policy of "don't ask, don't tell" when it comes to "conventional" -- or non-organic -- produce being grown in fields spread with sewage sludge, euphemistically called "biosolids." Certified organic produce cannot be fertilized with sewage sludge, which is the industrial and hospital waste and human excrement flushed down the drains and later -- in some cases -- spread on some crops.

Since this story broke, nearly 8,000 activists and PRWatch readers have sent emails to Whole Foods executives asking the company to require its suppliers to disclose this information and to label produce grown in sewage sludge so that customers can make informed decisions.



Social and consumer pressure

Science and data will not resolve social pressure

BUT it is necessary to defend biosolids recycling in policy and regulatory




By MICHAEL CASEY / CBS NEWS / February 11, 2015, 10:24 AM

New York, New England groundwater teeming with pharmaceuticals



A study found that groundwater downstream from septic systems in New England and New York contained traces of pharmaceuticals, cleaning products, hormones and personal care products. AP

SUBSCRIBE

SCIENTIFIC AMERICAN

English ▾ Cart  Sign In | Register 

THE SCIENCES MIND HEALTH TECH SUSTAINABILITY EDUCATION VIDEO PODCASTS BLOGS STORE

Environmental Health NEWS

SUSTAINABILITY

Drugs, Chemicals Seep Deep into Soil from Sewage Sludge

The widespread use of biosolids could contaminate groundwater near farms with a variety of chemicals, including anti-depressants such as Prozac and hormone-disrupting compounds in antibacterial soaps



Challenges

Lack of medium term data

New pharmaceuticals and chemicals

Breakdown products

*Wide number of molecules:
which to monitor ?*

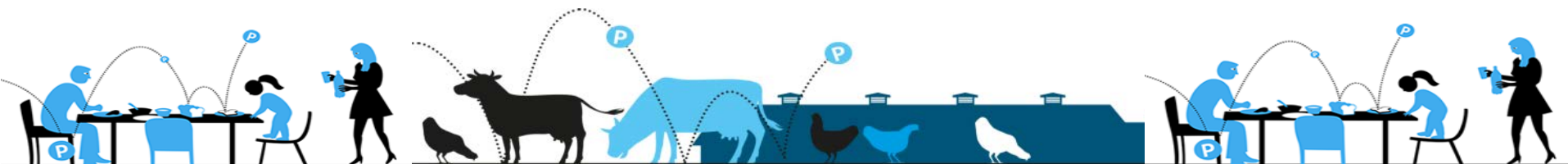
More data today on water than biosolids?

Past EU research more on heavy metals, consumer chemicals

*Need for data on fate of organic contaminants in new biosolids
treatment / valorisation routes,*

including composting, anaerobic digestion

Question is multiple: contaminants in biosolids, in soils, in crops

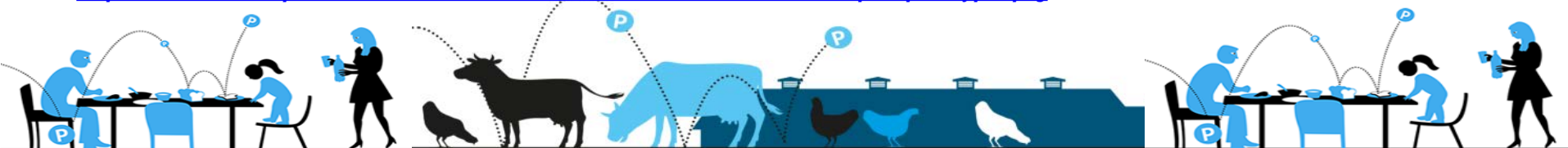


Clarke & Smith (Imperial College London) review of organic contaminants in biosolids, research priorities 2011

- 12 chemical families, inc. pharmaceuticals, consumer chemicals
- Antibiotic resistance of soil micro-organisms is temporary if antibiotics non persistent
- *“Few reported studies”*
- Highest priorities: perfluorochemicals, polychlorinated naphthalene, polydimethylsiloxanes
- Agricultural application of biosolids is most sustainable option
- *“Most risk assessments demonstrate ... does not place human health at risk”*
- Ongoing research into long-term safety is needed

“Review of ‘emerging’ organic contaminants in biosolids and assessment of international research priorities for the agricultural use of biosolids”; Clarke & Smith, Environment International 37 (2011) 226–247

<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.652.7711&rep=rep1&type=pdf>



Workshop objectives

Status of data, science and current research

Priorities for further monitoring, investigation

*Possible joint input to R&D funding decision processes,
e.g. definition of future Horizon 2020 programmes*

Possible joint actions

Input to Circular Economy policies, Fertiliser Regulation revision,...

Further dialogue or exchange ?





Why do sewage biosolids contaminants matter for the nutrient circular economy

Chris Thornton - European Sustainable Phosphorous Platform

- info@phosphorusplatform.eu
- www.phosphorusplatform.eu  [@phosphorusfacts](https://twitter.com/phosphorusfacts)

