

Sustainable organic horticulture

Ulrich Schmutz, ulrich.schmutz@coventry.ac.uk

Centre for Agroecology, Water and Resilience (CAWR) Coventry University

EU-COST, FA1105, BioGreenhouse WG5 Leader: Sustainability and Standards,

www.Biogreenhouse.eu

Outline of the talk

1. Background
2. Sustainability issues - revisiting Raviv 2010
3. Key issues for OGH
4. Discussion: bringing organic forward
5. Conclusions

Background

- **Sustainability – how to measure or assess?**

Booklet by our COST action

- **Resilience – how to assess?**

Sustainability knowledge gaps

Raviv 2010 revisited

1. Weed management
2. Pest and disease management
3. Fertility management
4. Plant breeding

RAW VEGAN

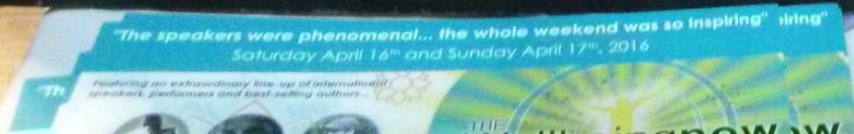
Free from: GLUTEN
DAIRY
EGGS
GRAIN
SOYA
REFINED SUGAR
AGAVE

HEALTHY . 'CLEAN' FOOD

#guiltfree ☺



Example:
Vegan Organic
'guiltfree'



Vegan organic standards (5)



Prohibited fertilisers

- Any animal by-product of livestock or fish origin
- Worm compost
- Human faeces and urine, sewage sludge
- Extracted **peat**
- Soluble fertilisers as the main source of fertility (Vegan Organic Network, 2007)

6.5 Standard Principle

Peat should not be used.

6.6 Standard Principle

Coir should not be used.

Vegan organic standards (4)



Permitted fertilisers

- P: Natural rock phosphate (e.g. Tunisian rock phosphate); Calcined aluminium phosphate rock (e.g. Redzlaag where soil pH > 7.5)
- K: wood-ash (from wood not chemically treated after felling)
- Ca and Mg: Dolomitic limestone, gypsum - calcium sulphate, ground chalk & limestone, Epsom salts (for acute magnesium deficiency), Magnesium rock
- Clays (e.g. perlite and vermiculite)

Restricted fertilisers

- Sulphate of potash, sulphur
- Calcium chloride - for bitter pit in apples
- Industrial lime from conventional sugar production
- Natural rock potash - providing it has a relatively low immediate solubility in water and low chlorine content
- Trace elements: stone meal (ground basalt), boron, copper, iron, manganese, molybdenum, cobalt, selenium, zinc

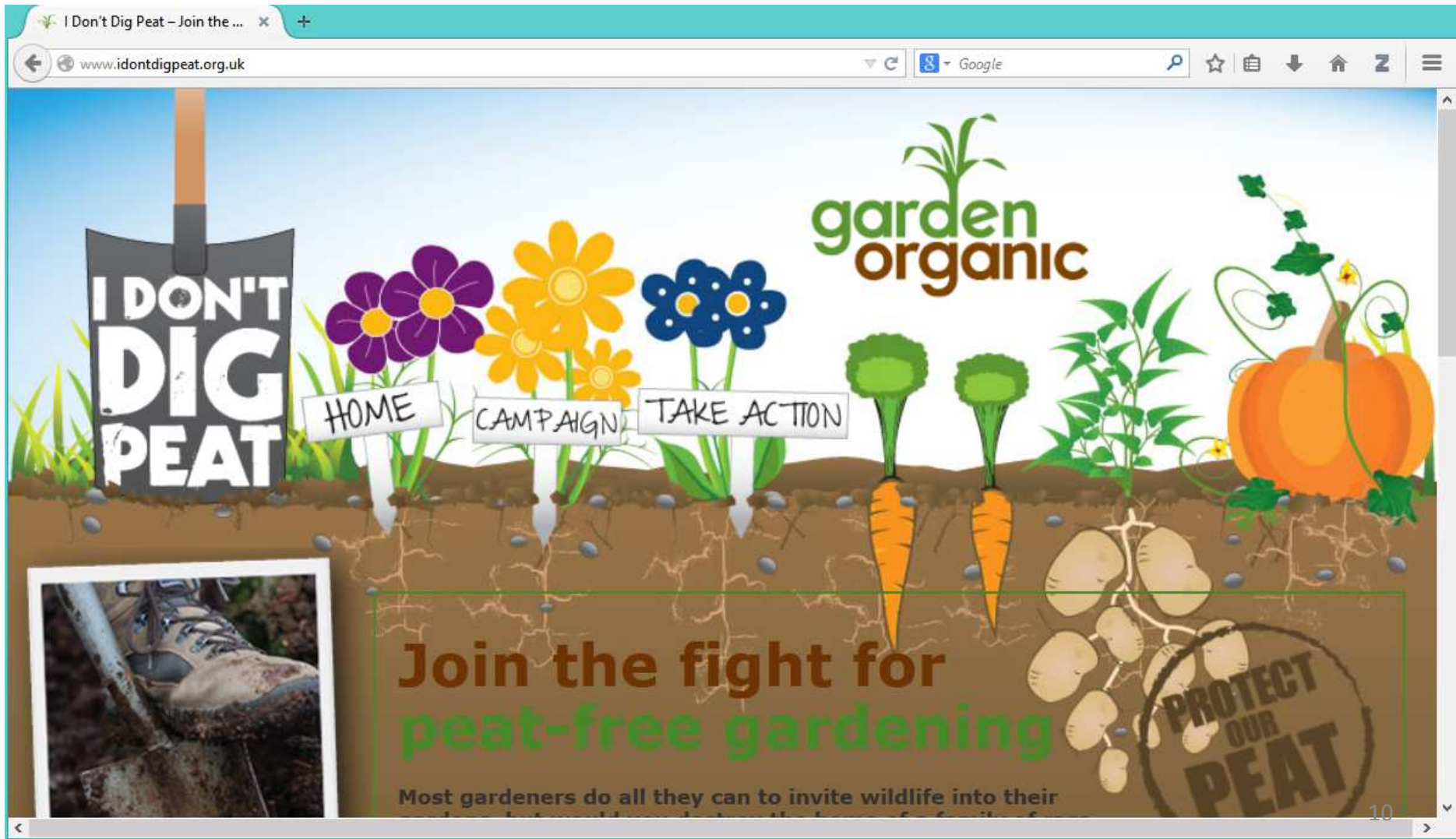
Peat-free compost



Peat-free vegan organic
pressed block



I don't dig peat campaign www.idontdigpeat.org.uk



Soil association organic standards

Managing semi-natural habitats, 4.5.25

you may cut turf or peat from peat bogs only for your own domestic fuel supply

-> *Vegan organic NO!*

Manure, compost and plant wastes , 4.7.4

You may only use peat in propagating media, but you should use alternatives to peat where possible. Ideally these should be from sustainable UK produced materials

- > *Vegan organic NO!*

Growing plants in pots and containers to sell as organic, 5.3.15

you do **not** use peat or slaughterhouse wastes

Roadmap www.the-hta.org.uk/page.php?pageid=1453

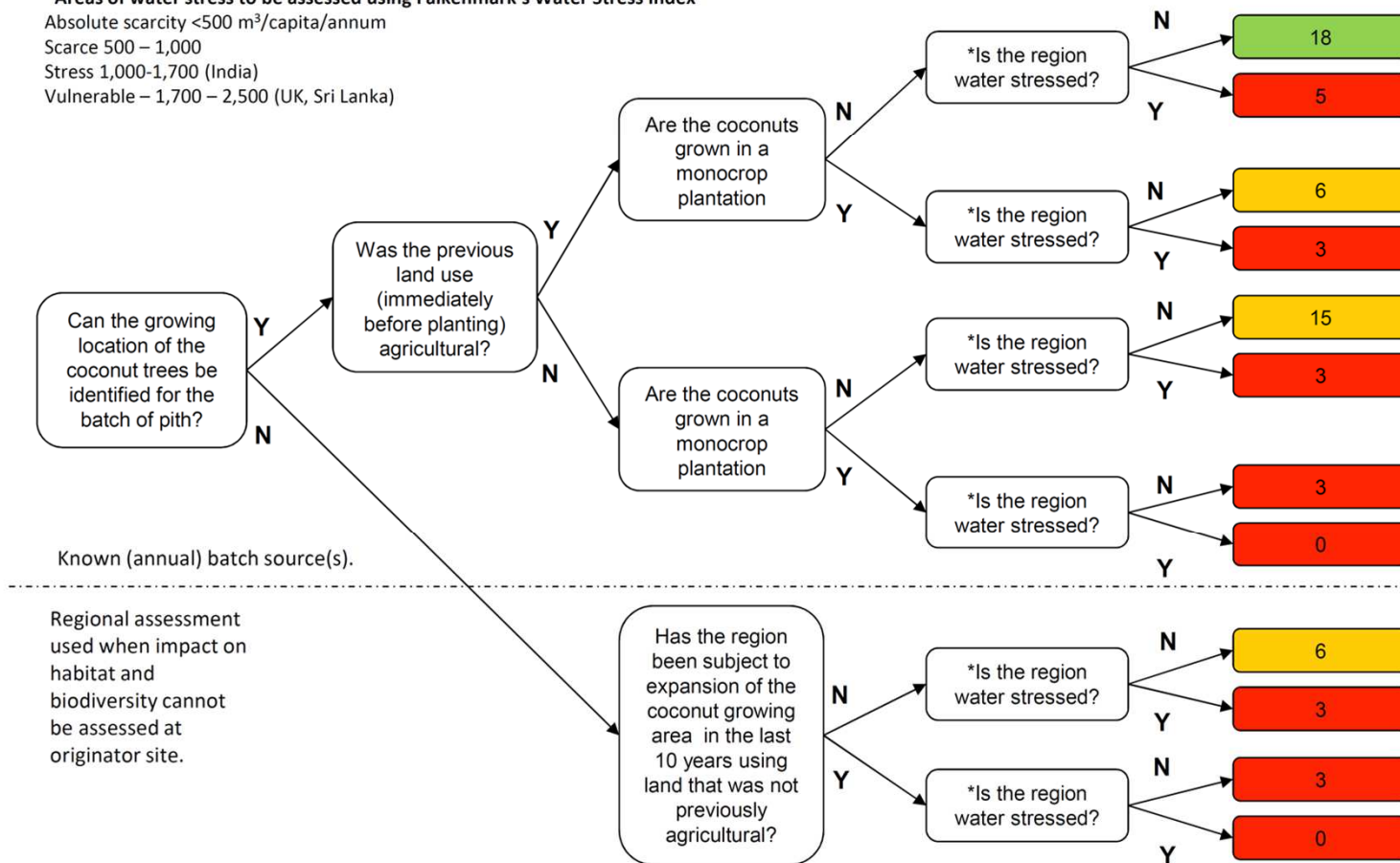


Responsible Sourcing & Manufacture of Growing Media' Project Toolkit (Excel)

Habitat and Biodiversity – Coir

***Areas of water stress to be assessed using Falkenmark's Water Stress Index**

Absolute scarcity <500 m³/capita/annum
 Scarce 500 – 1,000
 Stress 1,000-1,700 (India)
 Vulnerable – 1,700 – 2,500 (UK, Sri Lanka)



Conclusions

Raviv (2010)

“The assumption that organic is a more sustainable form of horticulture than conventional is demonstrated by its lower use of external inputs, more resource recycling, minimal use of potential pollutants, higher biodiversity and system resilience and higher social responsibility. “

Today Schmutz (2016)

“organic is not perfect - it needs to improve sustainability and resilience constantly, and independently from always comparing to poorly defined conventional”

Conclusions

Today Schmutz (2016)

“organic is never perfect - it needs to improve sustainability and resilience constantly”

“Key issues are:

- 1. Knowledge intensive system:
organic weed, P&D, fertility management and participatory breeding
(Raviv 2010, four points)*
- 2. Phasing out all fossil fuel inputs, and peat*
- 3. Increasing diversity and resilience including biodiversity in the landscape
around greenhouses*
- 4. Increasing social and health outputs by using short food supply chains and
community supported agriculture”*



Thank you

Dr Ulrich Schmutz, ulrich.schmutz@coventry.ac.uk
Centre for Agroecology, Water and Resilience (CAWR)
Coventry University and Garden Organic

