The use of recycled water for irrigation

Jenny Bashford
NFU Water Policy Adviser
NFU HQ Stoneleigh
The NFU champions British farming and provides professional representation and services to its farmer and grower members.
Types of water

Blue Water – Fresh (non-saline) from ground and surface water sources

Green water - rainwater stored in soil (soil moisture)

Grey water - water used in the production of goods and services
Sources of grey water

• Rainwater – roof runoff
• Irrigation runoff
• Industrial food processing ‘wastewater’
• Storm water - street drains and gutters
• Agricultural effluent
• Processing and wineries
• Domestic wastewater
• Wastewater treatment plants
• Water from showers and washing machines
Demand for water is expected to outstrip supply by 40% over the next 20 years.

2030 Water Resources Group 2009, Charting Our Water Future
83% of farmers and growers use mains water supply

Average cost - £1.17 per $m^3$

2010 Defra Water usage in Agriculture and Horticulture 9\textsuperscript{th} June 2011
Agriculture uses 184 million metres$^3$ water per year

1% abstracted (blue) water in England

Cost - £215 million

Source: 2010 Defra Water usage in Agriculture and Horticulture 9$^{th}$ June 2011
38% of water used in agriculture is for irrigation

70 million metres$^3$

Cost £82 million per year

2010 Defra Water usage in Agriculture and Horticulture 9$^{th}$ June 2011
2% recycled water

5.5 million metres$^3$

Value £6.5 million

2010 Defra Water usage in Agriculture and Horticulture published 9th June 2011
Case study 1

£1 million water recycling plant washing potatoes

41 cubic metres saved every day

Ref: Robert Lockhart: NFU Staffordshire County Chair
Case study 1

52 % reduction in main water use

From 79 metres$^3$ to 38 metres$^3$ per day

And

less effluent back to sewer
Case study 2

Re-use of runoff from glass house roof and irrigation.

28 ha of Glass house  280,000 m2

Ref: John Hall MBA MIBC,113, Limmer Lane, Felpham, West Sussex PO22 7LR. john.hall@johnhallconsulting.co.uk
www.johnhallconsulting.co.uk
Case study 2

1 inch rain = 22 gallons of water over 1 acre (of greenhouse roof)

1 wet day = 1.5 million gallons of water = 23/4 Olympic size swimming pools
Case study 3
Salad and fruit export business
Salinas Valley, California

Municipal Waste water treated and blended.

Ref: Water Resources – Generating Value and Minimising Loss
Sophie Barrett  CAAV Centenary Scholar
Investing in Water Efficient Technologies

Enhanced Capital Allowance Scheme

100% allowance for water reuse systems
Conclusions

Water vital for food production.

Increasing pressure to **Use less water more efficiently**.

Agriculture’s use of “blue water” could be reduced by 40% by using alternative water sources.

Increasing attention to saving and re-using water in the UK as abstraction costs increase. ECA helps

Matching quality of a water source to particular use increasingly important.

The case studies demonstrate ‘Intelligent solutions’

Engineering solutions - a major contributor to solving some of the problems raised by such methods.
Next Steps?

THANK YOU